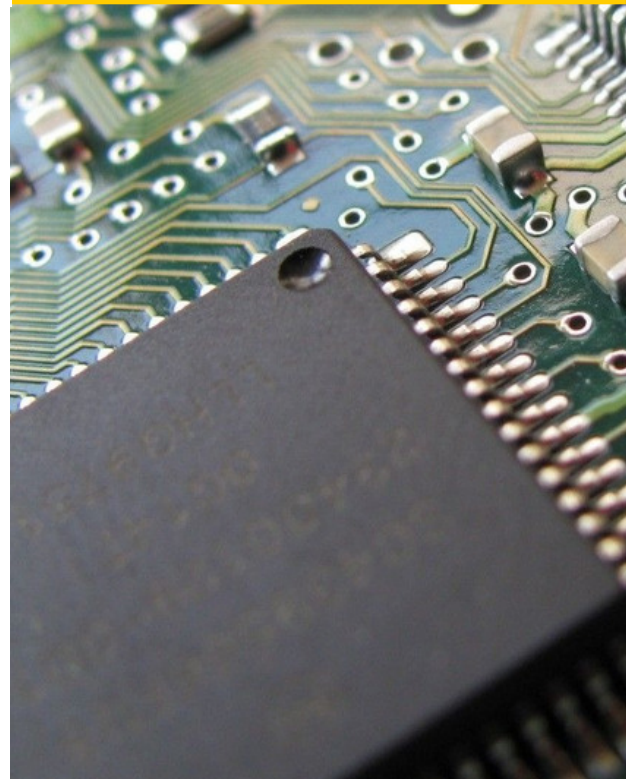




SANYO DENKI
SANUPS
YOUR POWER GUARANTEED

POWER
PRODUCT
OVERVIEW



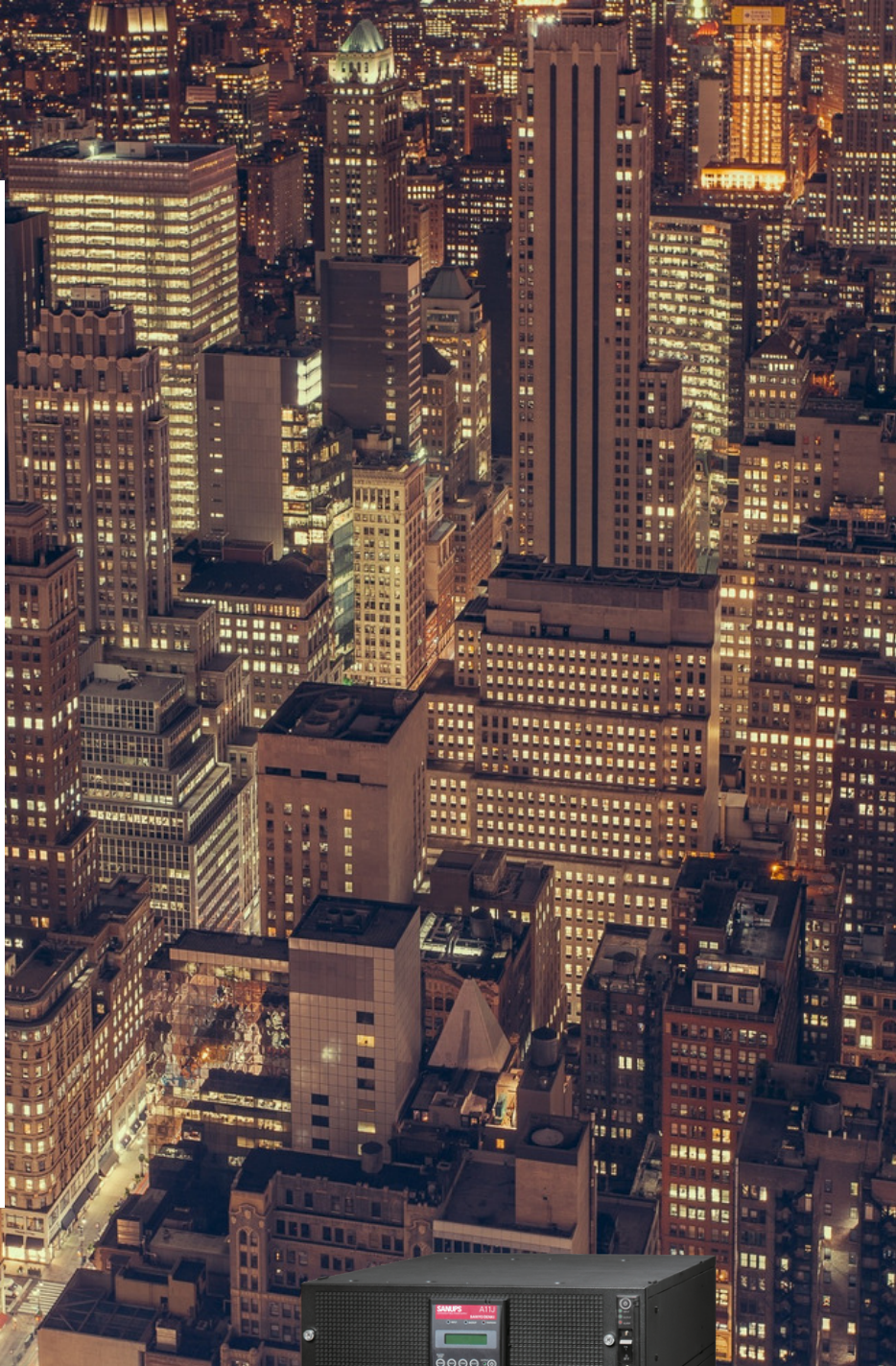
Who We Are

YOUR POWER MATTERS

Due to the extensive research to create the highest quality products, we have been able to provide our customers with the best UPS units in the market for over 90 years. As a result of our dedication in our products and OEM services, we have gained the trust from our most respectable customers.

Our Customers:

- IBM -NEC -NTT -HITACHI
- FUJITSU -Coca Cola -WalMart
- Santander Bank -Sony -SHARP
- Panasonic -RICOH -EPSON -CANON
- KONICA MINOLTA -Kawasaki
- Aisin -Denso -Honda -DMG Mori
- SoftBank -Toshiba Medical Systems
- Ministry of Defense
- National Police Agency



SANUPS



SANYO DENKI



High Quality UPS

SANUPS is the best UPS in the market for many reasons. First, it provides continuous power with zero millisecond in the event of unstable power or an extended black out while simultaneously outputting the cleanest voltage and current. Second, it is highly efficient and is able to compete at a competitive price on the market. Third, it is designed with safety and the environment in mind. Fourth, it saves energy while providing around the clock protection. With all the numerous benefits SANUPS provides, it is no wonder that many companies trust and value our products.

Sanyo Denki America provides wide range of products such as power products of double conversion true online UPS, Hybrid Smart-UPS and parallel or redundant N+1 configurable UPS.



Three Core Technologies



Technology for protecting the global environment



Technology for protecting people's health and safety



Technology for using new energy sources and saving energy

SANYO DENKI

SANUPS TECHNOLOGY



Innovation

Innovation

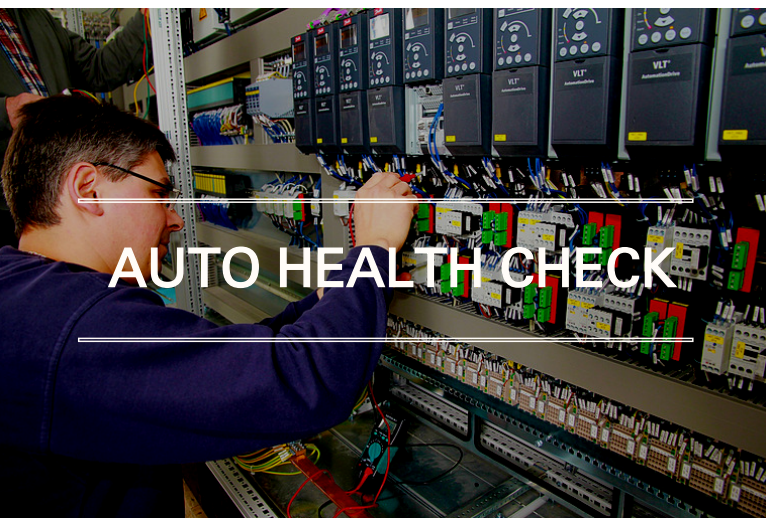
SANUPS was developed by our research and development center based on experiences of serving and tailoring for our valued customers for over 90 years. We are invested in innovating new products, obtaining patents for our technology and improving product quality through customers' feedbacks.

Double Leak Proof

SANUPS is superior in its design where the battery is sealed and enclosed in its pack, which prevents short circuits and important data loss. In any event that the battery leaks inside, the structure of the battery pack prevents the battery liquid from getting in contact with the electronic circuit boards.



DOUBLE LEAK PROOF



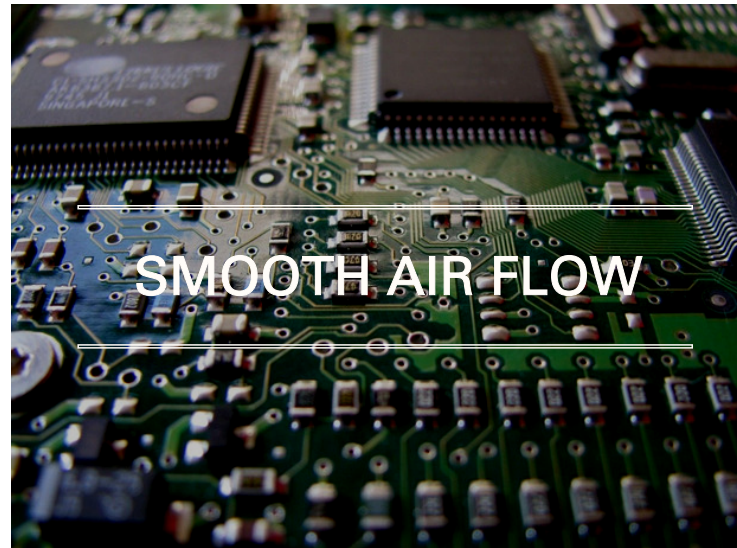
AUTO HEALTH CHECK

Auto Health Check

SANUPS performs battery tests periodically for maintenance purposes and sends notifications to the host if an issue occurs. Without the test, the battery will wear down over time and cause overheating and excessive electrical discharge leading to a complete loss of backup power.

Smooth Air Flow

SANUPS's improved design on heat prevention increased its efficiency and saved more electricity than the previous generation. All designs are tested on a 3D CAD design for air flow and heat simulations on every circuit board and chassis. .

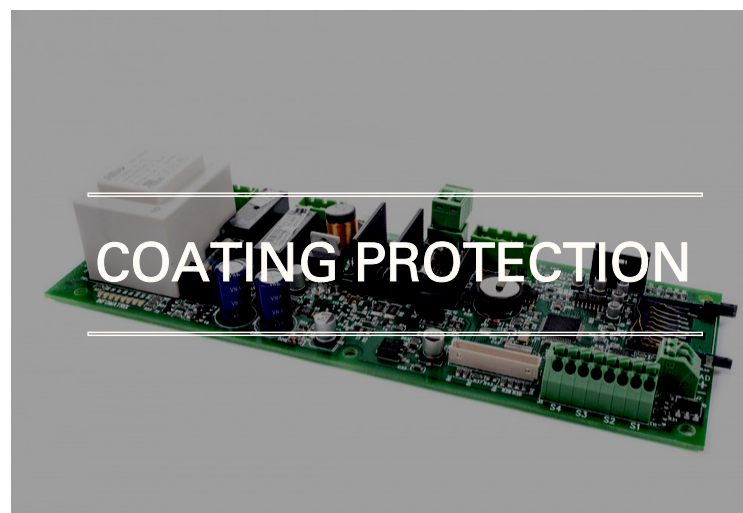


Noise Reduction

SANUPS emits the lowest electrical noise possible preventing potential problems to the peripherals and connected loads. The circuits are designed and tested in the acoustic anechoic chamber (RF anechoic chamber and a noise measurement anechoic chamber). All SANUPS products are EMC tested and VCCI, Class-A certified.

Coating Protection

SANUPS's circuit boards are fully coated through soldering to prevent short circuiting, which is caused by dusts and insects. Our dust filters are also available as an additional protection.



SANUPS E11A

HYBRID UPS



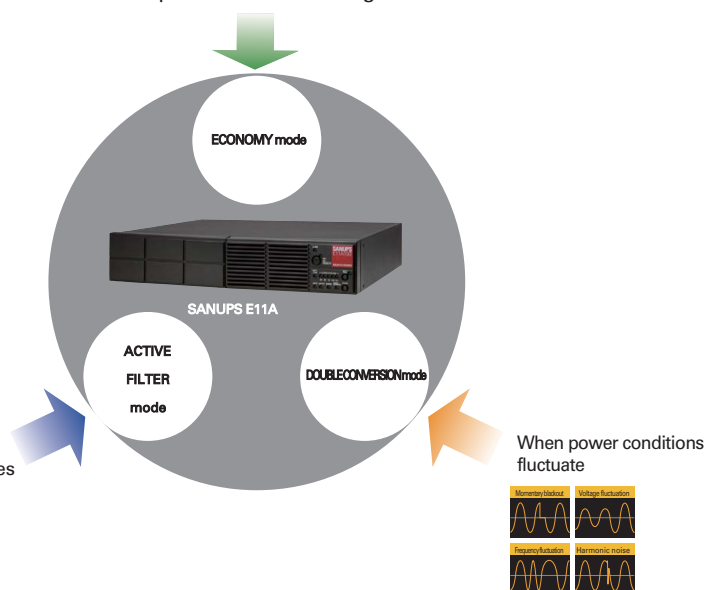
Saving energy and cost HYBRID topology UPS

Product Lineup & Capacity

100V model		Capacity					
Input	Output	0.35kVA	0.75kVA	1 kVA	1.5kVA	2 kVA	3 kVA
AC120 V Single-phase	AC120 V Single-phase	(0.245kW)	(0.525kW)	(0.7kW)	(1.05kW)	(1.4kW)	(2.1kW)

200V model		Capacity		
Input	Output	1 kVA	2 kVA	3 kVA
AC208V Single-phase	AC208V Single-phase	(0.7 kW)	(1.4kW)	(2.1kW)

When power conditions are good



Auto Mode Select

E11A automatically converts AC power to DC power and returns to AC power in order to produce a true sine wave when a power outage or temporary interruption occurs. When the utility is at its original state, it will run on its normal power leading to less electrical consumption.



True Sine Wave

E11A produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



Double Leak Proof

SANUPS batteries are sealed and enclosed in a specially designed battery pack preventing electrical shortages and internal damages to the circuit boards. It is hot-swappable as well.



Auto Health Check

E11A automatically checks the battery's condition periodically and sends notifications to the host when a problem occurs. The auto health check ups will not only prevent future battery related problems and unnecessary downtime, but extends the battery life as well.



Long Battery Life

SANUPS's highly efficient inverter and Auto Health Check functions contribute to a longer battery life saving the cost of changing the battery in the future.

Product Number

0.35kVA	E11A351B001USP
0.75kVA	E11A751B001USP
1kVA	E11A102B001USP
1.5kVA	E11A152B001USP
2kVA	E11A202B001USP
3kVA	E11A302B001USP
208V Type	
1kVA	E11A102B001USP
2kVA	E11A202B001USP
3kVA	E11A302B001USP

*Voltage adjustable unit P/N ends with UJPJ.

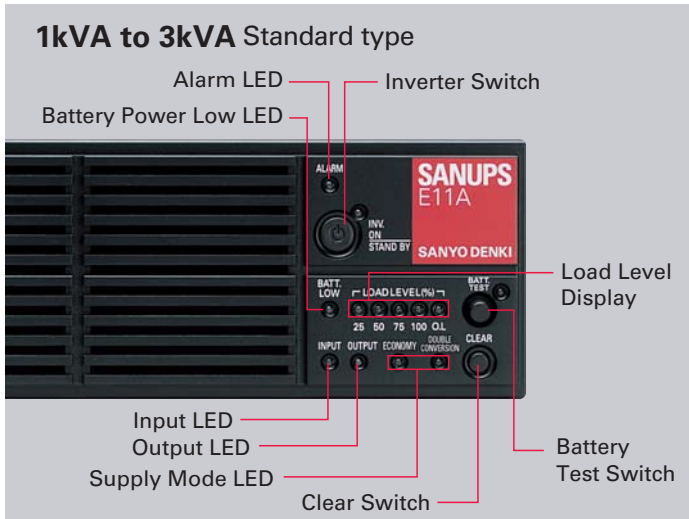
*Units with Dry Contact P/N is 011.

*120V Tower Type is available.

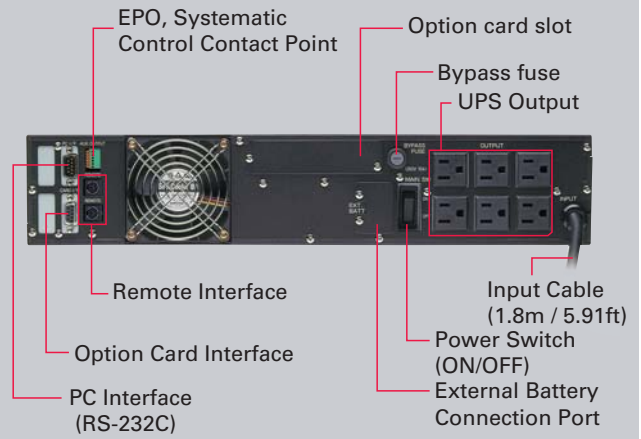
Provides Protection for...

- Communication/IT Device
- Hospital/ Medical Device
- Automated Factory Line
- ATM Machine
-

External View



Back 100V / 1kVA [model No.:E11A102A011] shown here.



Specifications

Item		E11A			Remarks	
		Economy mode *1	Active filter mode *1	Double conversion mode		
Output power		0.35kVA(0.245kW)/0.75kVA(0.525kW)/1kVA(0.7kW)/1.5kVA(1.05kW)/2kVA(1.4kW)/3kVA(2.1kW)			Power factor = 0.7(lag)	
System	Topology	Hybrid				
	Cooling	Forced Air				
AC Input	Number of phase / wire		Single-phase / 2 wire			
	Nominal voltage	100V Model (0.35kVA/0.75kVA/1kVA/1.5kVA/2kVA/3kVA)	100V, 110V, 115V, 120V		Setting can be changed.	
		200V Model (1kVA/2kVA/3kVA)	200V, 208V, 220V, 230V, 240V			
	Voltage range		± 8% (Auto selected mode ± 5%)	± 5%	- 20%, + 15%	
	Frequency		50Hz or 60Hz			50/60Hz Auto-sensing
	Frequency range		± 1%, 3%, 5%		± 8%	
Power factor		0.7	0.85 Min.	0.95 Min.	<1% Input voltage distortion	
AC Output	Number of phase / wire		Single-phase / 2 wire			
	Power factor		0.7 (lag)		0.7 (lag)- 1.0	
	Nominal voltage	100V Model (0.35kVA/0.75kVA/1kVA/1.5kVA/2kVA/3kVA)	100V, 110V, 115V, 120V		Setting can be changed.	
		200V Model (1kVA/2kVA/3kVA)	200V, 208V, 220V, 230V, 240V			
	Voltage regulation		- 10%, + 8% Max. (Auto selected mode - 7%, + 5%)	- 7%, + 5% Max.	± 2% Max.	In terms of domain of load and input
	Frequency		50Hz or 60Hz			Same as input frequency
	Frequency range	On Normal Operation	± 1, 3, 5% Max.		± 1% Max.	Setting can be changed.
		On Battery Operation	-		± 0.5% Max.	
	Voltage distortion	Linear load	-		3% Max.	During rated operations
		Non-linear load	-		8% (0.35kVA, 0.75kVA) 7% (1kVA to 3kVA)	During rated operations / 100% rectifier load
Transient voltage regulation	Input Voltage step	± 5% Max.			Power failure: feedback or supply fluctuation	
	100% step load	-	-	± 5% Max.	0%: at the time of 100% sudden fluctuation	
Overcurrent capacity		Greater than 200% (30 second interval) *2		105% (200ms)	Rated load power factor / at rated input	
		Greater than 800% (2 cycle) *2		-		
Overcurrent protection		Fuse Protection (0.35kVA, 0.75kVA, 1kVA), Breaker Protection (1.5, 2, 3kVA)		Bypass Non-Hit Change (Auto Return)	Auto return mode can be disabled.	
Battery	Type	Maintenance Free Sealed Lead-Acid Battery (small)				
	Backup time	6minutes (0.35kVA, 0.75kVA) 5minutes (1kVA to 2kVA, 3kVA 200Vmodel) 3.5minutes (3kVA 100Vmodel)			Ambient Temp. of 25°C, under rated load	
Acoustic noise		100V model/ 0.35kVA/0.75kVA/1kVA/1.5kVA:40dB Max. 2kVA/3kVA: 45dB Max. 200V model/ 45dB Max.			At 1m (40in) from the front of unit	
Nominal heat dissipation		Double conversion mode 100V model 0.35kVA : 59W, 0.75kVA : 111W, 1kVA : 125W, 1.5kVA : 200W, 2kVA : 250W, 3kVA : 460W 200V model 1kVA : 125W, 2kVA : 270W, 3kVA : 460W				
Environment	Operating temperature	0°C to 40°C				
	Relative humidity	20% to 90%			Non-condensing	
Standard of safety		UL1778-Fourth Edition (file #E226092), CE				
Emission Standard (Noise Standard)		FCC Part15 Subpart B Class A, CISPR 22 Class A, VCCI Class A				

*1 A momentary power interruption lasting less than 5 ms occurs when switching from Economy Mode or Active Filter Mode to battery power.

*2 Reference values

SANUPS A11H

ONLINE UPS



The True Online UPS Trusted by Top Brands.

Product Lineup & Capacity

120V model

Output	Output capacity			
AC120V Single-phase	1kVA (0.7kW)	1.5kVA (1.05kW)	2kVA (1.4kW)	3kVA (2.1kW)



Wide Input Range

A11H produces the widest input voltage and frequency window, which extends the battery life. Voltage input is from 55VAC to 150VAC and frequency input is 40Hz to 120Hz.



True Sine Wave

A11H produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



Double Leak Proof

SANUPS batteries are sealed and enclosed in a specially designed battery pack preventing electrical shortages and internal damages to the circuit boards. It is hot-swappable as well.



Auto Health Check

A11H automatically checks the battery's condition periodically and sends notifications to the host when a problem occurs. The auto health check ups will not only prevent future battery related problems and unnecessary downtime, but extends the battery life as well.



Long Battery Life

A11H's wide input range, highly efficient inverter and Auto Health Check functions contribute to a longer battery life saving the cost of changing the battery in the future.



High Versatility

Since A11H is highly versatile, it can be used for IT server rooms, factory automations or medical applications.

Product Number

Rack Type

1kVA	A11H102B011USP
1.5kVA	A11H152B011USP
2kVA	A11H202B011USP
3kVA	A11H302B011USP

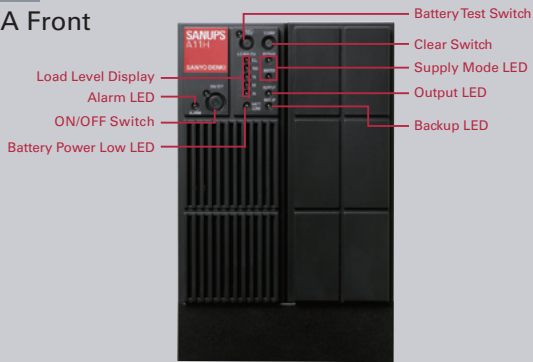
Tower Type

1kVA	A11H102B011USTWP
2kVA	A11H202B011USTWP
3kVA	A11H302B011USTWP

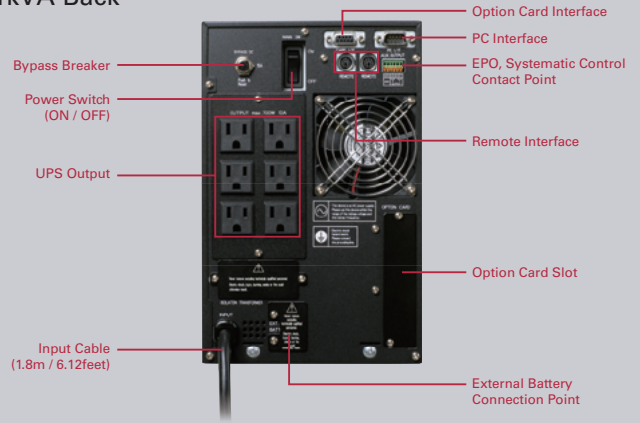
External View

Tower

1kVA Front

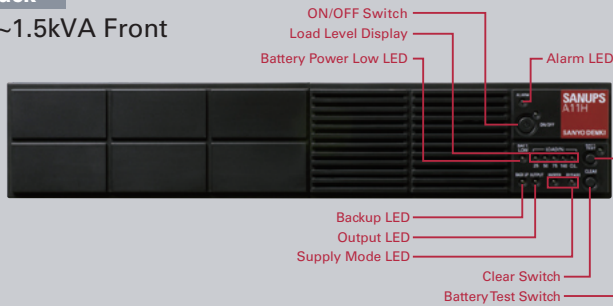


1kVA Back

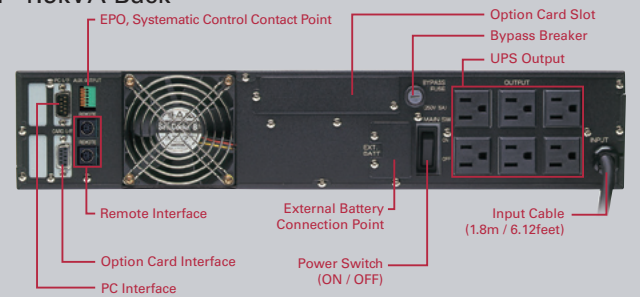


Rack

1~1.5kVA Front



1~1.5kVA Back



Specifications

Item	A11H					Remarks
Tower type	A11H102A011USTW	—	A11H202A011USTW	A11H302A011USTW		
	—	—	A11H202A111USTW	A11H302A111USTW		
Rack type	A11H102A011US	A11H152A011US	A11H202A011US	A11H302A011US		
Output power	1kVA (0.7kW)	1.5kVA (1.05kW)	2kVA (1.4kW)	3kVA (2.1kW)		
System	Topology					Online UPS
	Cooling					Forced Air
AC Input	Number of phase / wire					Single-phase / 2wire
	Nominal voltage					120V
	Voltage range					55V~150V*
	Frequency range					40Hz~120Hz
	Power factor					0.95Min.
AC Output	Number of phase / wire					Single-phase / 2wire
	Power factor					0.7 (lag)
	Nominal voltage					120V
	Voltage regulation					±2%Max.
	Frequency					50 / 60Hz
	Frequency range	On Normal Operation		±1,3,5%Max.		User selectable
		On Battery Operation		±0.5%Max.		
	Voltage distortion	Linear load		3%Max.		During rated operations
		Non-linear load		7%Max.		
	Transient	Input Voltage step		±5%Max.		Power failure: feedback or supply fluctuatio
	Voltage regulation	100% step load		±5%Max.		0% : at the time of 100% sudden fluctuatio
Overcurrent capacity	105% (200ms.)					Rated load power factor / at rated input
Overcurrent protection	Breaker Protection					
Battery	Type					Maintenance Free Sealed Lead-Acid Battery
	Backup time	Tower type	5min.(A11H102A011USTW), 12min.(A11H202A011USTW), 10min.(A11H302A011USTW), 20min.(A11H202A111USTW), 18min.(A11H302A111USTW)			Ambient Temp. of 25°C, under rated load
		Rack type	5min. (1, 1.5, 2kVA), 3.5min. (3kVA)			
Acoustic noise	40dB Max.(1kVA), 45dB Max.(2kVA), 50dB Max.(3kVA)				At 40in from the front of unit	
Nominal heat dissipation	125W (1kVA) / 185W (1.5kVA) / 250W (2kVA) / 370W (1kVA)					
Environment	Operating temperature					0~40°C
	Relative humidity					20~90%
	High degree					9843ft Max.
Standard of safety	UL1778-Fourth Edition (File # E226092), FCC Part15 Subpart B Class A					Load reduction is necessary for 3281ft or more. 6562ft 90% 9843ft 80%

* At 96V or less, operation switches to battery after one minute of AC operation.

The load reduction factor is 40% or less at 55-68V and 70% or less at 68-80V, and if this load factor is exceeded, operation switches immediately to battery.

SANUPS A11J

ONLINE UPS



The True Online UPS Designed for Industry

Product Lineup & Capacity

Input / Output AC [Single-phase 2-wire]	V	Output capacity		kVA (kW)
200, 208, 220, 230, 240		5	10	(4.5) (9.0)

Provides Protection for...

- Small-Mid Size Data
- Center Factory Automation
- Hospital/ Medical Device
- Semiconductor Machine
- Mission Critical Equipment



Swappable Inverter

A11J's inverter unit can be replaced in case of an emergency without any use of special tools. Maintenance is quick and easy making this product cost efficient and time saving.



Long Battery Life

A11J's highly efficient inverter and Auto Health Check functions contribute to a longer battery life saving the cost of changing the battery in the future.



True Sine Wave

A11J produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



Double Leak Proof

SANUPS batteries are sealed and enclosed in a specially designed battery pack preventing electrical shortages and internal damages to the circuit boards. It is hot-swappable as well.



Auto Health Check

A11J automatically checks the battery's condition periodically and sends notifications to the host when a problem occurs. The auto health check ups will not only prevent future battery related problems and unnecessary downtime, but extends the battery life as well.



Rack Tower Convertible

A11J rack type comes with a floor mount bracket providing more flexibility and freedom to its product design. Also, the rack includes an LCD display, which adjusts to any direction depending on how it is installed.

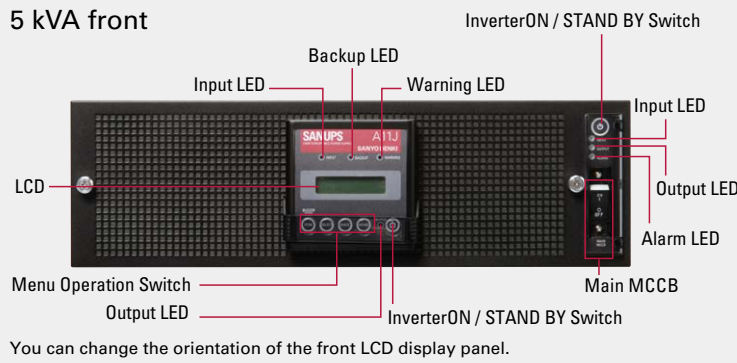
Product Number

5kVA A11J502A002TU
10kVA A11J103A002TU

*10kVA Model will be UL listed in Mid-2017

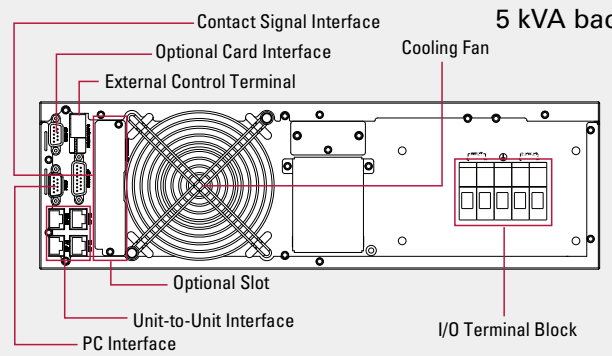
External View

5 kVA front



You can change the orientation of the front LCD display panel.

5 kVA back



Specifications

Model No.		A11J502A002TU	A11J103A002TE	
Rated output capacity (Apparent power/Active power)	N unit setting	5 kVA / 4.5 kW	10 kVA / 9 kW	
	N+1 unit setting	—	5 kVA / 4.5 kW	
System	Power supply system	True online power supply synchronized with commercial power source		
	Cooling system	Forced air cooling		
	Inverter system	High-frequency PWM		
IEC Standard (UPS classification)		VFI-SS-111		
AC input	Number of phase	Single-phase 2 wires		
	Rated voltage	200 V, 208 V, 220 V, 230 V, 240 V (User settable. Factory setting: 200 V)		
	Acceptable voltage range ^{*1}	-40% to +15%		
	Rated frequency	50Hz / 60Hz (Selectable Auto-detect or Constant frequency ² Factory setting: Auto-detect)		
	Max. capacity	N unit setting	5.5 kVA	11 kVA
		N+1 unit setting	—	6.2 kVA
Power factor	0.95 min (At rated input voltage and input voltage distortion rate under 1%)			
AC output	Number of phase	Single-phase 2 wires		
	Rated voltage (same as input)	200 V, 208 V, 220 V, 230 V, 240 V (Factory setting: 200 V)		
	Voltage accuracy	Within ± 2% of rated voltage		
	Rated frequency (same as input)	50Hz / 60Hz		
	Frequency range ^{*2}	On normal operation	Rated frequency Within ± 1, 3, 5% (Factory setting: 3%)	
		On battery operation	Within ± 0.5%	
	Voltage waveform	Sine wave		
	Distortion factor of voltage	Within 3% / 8% (Linear load / Rectifier load at rated output)		
	Transient voltage variation	Rapid load factor change	Within ± 5% (0 ↔ 100% rapid change)	
		Power outage / recovery	Within ± 5%	
		Rapid input voltage change	Within ± 5% (± 10% rapid change)	
	Load power factor	N unit	0.9 lag (acceptable range 0.7 (lag) to 1.0)	
		N+1 unit	0.9 lag (acceptable range 0.7 (lag) to 1.0)	
Overcurrent protection	N unit	110% and over (Automatic swith to bypass ^{*4})		
	N+1 unit	—		
Overload capacity	Inverter	N unit	110% (1 min) / 118% (inst.)	
		N+1 unit	—	
	Bypass	N unit	200% (30 s) / 800% (2 cycles)	
		N+1 unit	—	
Battery ^{*3}	Type	Small-sized sealed lead-acid battery		
	Composition	16 unit (12 V / 1 unit)	32 unit (12 V / 1 unit)	
	Rated capacity	5 Ah / unit		
	Battery runtime	5 min (Ambient Temp. of 25°C, Load power factor 0.8, Default)		
Input leak current	4 mA max.		8 mA max.	
Acoustic noise (At 1m from the front of unit)	45 dB max.		50 dB max.	
Nominal heat dissipation (at rated output after full recharged)	339 W		730 W	
Environment	Operating temperature	0°C to 40°C		
	Relative humidity	20% to 90% (Non-condensing)		
I/O Connector / Wiring Wire, etc. ^{*5}	Input Connector	Field wireless terminal / block: Applicable wire 20 to 4 AWG		
	Input wire	8 mm ² (8 AWG)	22 mm ²	
	Output Connector	Field wireless terminal / block: Applicable wire 20 to 4 AWG		
	Output wire	8 mm ² (8 AWG)	22 mm ²	
	Grounding wire	5.5 mm ² (10 AWG)	14 mm ²	
	Input breaker capacity	35 A (UL489 certified unit)		
Safety standard	UL1778-4th/C22.2 No.107.3-05-2nd, CE: IEC62040-1:2008		—	
Emission standard	EN62040-2 C3 : 2006, EN55022:2006 Class-A, FCC Part15 Sub partB Class-A		—	
Immunity	EN62040-2:2006, EN55024:1998/A1:2001/A2:2003		—	

The output supplied from the inverter startup (Inverter start-up type)

*1 AC input voltage range changes by load factor.

Load factor 70% or less: -40% to +15% / Load factor more than 70%: -20% to +15%

Note that when recovering from power outages at a load factor of 70% or less, the abnormal voltage detection value (-40%) will be -20%.

*2 At auto-detect frequency setting, synchronized frequency range is selectable as ± 1%, ± 3% or ± 5% (factory setting: ± 3%). Acceptable frequency range is ± 8% at this setting.

At constant frequency setting, output frequency is fixed to 50Hz or 60Hz without regard to input frequency. Acceptable range is from 40Hz to 120Hz at this setting.

Note that when recovering from outside the acceptable range, acceptable frequency range will be ± 8% in either setting.

The inverter will not run if input frequency is not within the set value (± 1%, ± 3%, ± 5%) of the synchronized frequency range.

*3 Battery runtime can be extended through the addition of optional battery boxes. Contact us for details.

*4 A conditions to switch to bypass synchronously are as follows.

Frequency auto-detect setting is selected. • Input frequency is in the synchronized range and input voltage is in the rated voltage range.

*5 Transfer signal:

(1) Contact signal: DSUB15 (female) fixing screw M3

(2) PC interface: DSUB9 (male) fixing screw #4-40UNC

Remote control: Spring clamp terminal block Applicable wires: 26 AWG to 20 AWG

SANUPS A11J S2-Type

ONLINE UPS



Modular Redundant N+1 Scalable True Online UPS

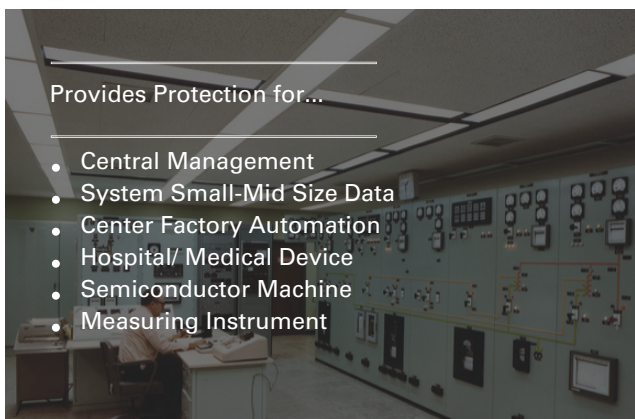
Product Lineup & Capacity

Parallel Operation

Input / Output AC [Single-phase 2-wire]	V	Output capacity	kVA (kW)
200, 208, 220, 230, 240		10kVA, 15kVA, 20kVA	(8, 12, 16)

Parallel Redundant Operation

Input / Output AC [Single-phase 2-wire]	V	Output capacity	kVA (kW)
200, 208, 220, 230, 240		5kVA, 10kVA, 15kVA	(4, 8, 12)



Provides Protection for...

- Central Management
- System Small-Mid Size Data
- Center Factory Automation
- Hospital/ Medical Device
- Semiconductor Machine
- Measuring Instrument



Swappable Inverter

A11J S2 Type's inverter unit can be replaced in case of an emergency without any use of special tools. Maintenance is quick and easy making this product cost efficient and time saving.



High Availability

A11J S2 type is a scalable modular redundant UPS. With redundant N+1 configuration, you can scale up to 15kVA. Even if one module fails to perform, another module will replace it's place to run the within its 15kVA limit.



High Scalability

A11J S2 type is a scalable modular redundant UPS, which means it can be increased up to 20kVA with parallel operation and 15kVA with N+1 redundant configuration with increments of 5kVA to tailor your needs.



True Sine Wave

A11J S2 Type produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



Double Leak Proof

SANUPS batteries are sealed and enclosed in a specially designed battery pack preventing electrical shortages and internal damages to the circuit boards. It is hot-swappable as well.



Auto Health Check

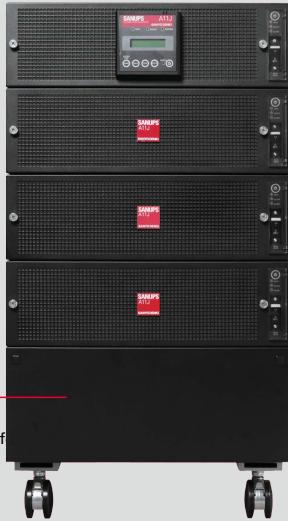
A11J automatically checks the battery's condition periodically and sends notifications to the host when a problem occurs. The auto health check ups will not only prevent future battery related problems and unnecessary downtime, but extends the battery life as well.

Product Number

10kVA	A11J103SA002U
15kVA	A11J153SA002U
20kVA	A11J203SA002U

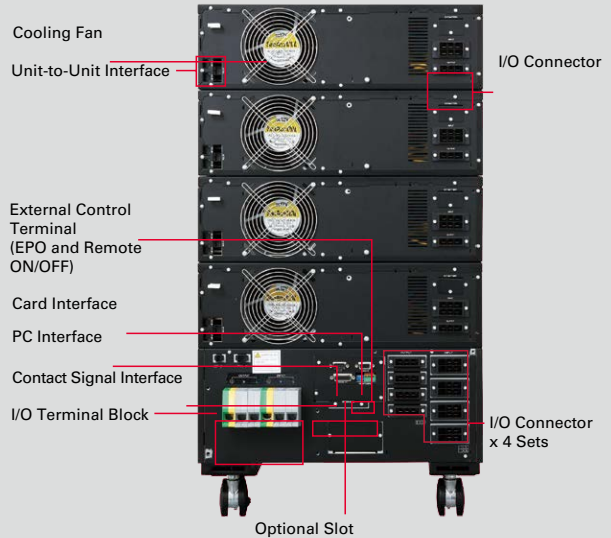
External View

20kVA Front Model: A11J203S****



Maintenance Bypass Switch (Inside Cover)
* This is not available for UL/CE certified units

20kVA UL/CE Certified Unit Back Model: A11J203S****



Cooling Fan
Unit-to-Unit Interface
I/O Connector
External Control Terminal (EPO and Remote ON/OFF)
Card Interface
PC Interface
Contact Signal Interface
I/O Terminal Block
Optional Slot
I/O Connector x 4 Sets

Specification

Item	Model	A11J103SA002U	A11J153SA002U	A11J203SA002	
Feature		Capacity increasable / Parallel redundatable*1			
Rated output capacity (Apparent power/Active power)	N unit setting	10 kVA / 9 kW	15 kVA / 13.5 kW	20 kVA / 18 kW*7	
	N+1 unit setting	5 kVA / 4.5 kW	10 kVA / 9 kW	15 kVA / 13.5 kW	
Capacity increasable (with 20 kVA Power Distribution Unit)		✓ *2	✓	✓	
System	Power supply system	True online power supply synchronized with commercial power source			
	Cooling system	Forced air cooling			
	Inverter system	High-frequency PWM			
IEC Standard		VFI-SS-111			
AC input	Rated voltage	200V, 208V, 220V, 230V, 240V (User settable. Factory setting: 200V) (Acceptable voltage range: -40% to +15%) *3			
	Rated frequency	50Hz / 60Hz (Selectable Auto-detect or Constant frequency *4 Factory setting: Auto-detect)			
	Number of phase	Single-phase 2 wires			
	Power factor	Min. 0.95 (At rated input voltage and input voltage distortion rate under 1%)			
	Max. capacity (at battery recovery charging)	N unit setting	11 kVA or less	16.5 kVA or less	22 kVA or less
	N+1 unit setting	6.2 kVA or less	11.7 kVA or less	17.2 kVA or less	
AC output	Number of phase	Single-phase 2 wires			
	Rated voltage (same as input)	200V, 208V, 220V, 230V, 240V (User settable. Factory setting: 200V) (Acceptable voltage range: -40%~+15%) *3			
	Voltage accuracy	Within ± 2% of rated voltage			
	Rated frequency (same as input)	50Hz / 60Hz			
	Frequency accuracy	Within ± 1, 3, 5% of rated frequency (Within ± 0.5% at UPS free running) *5			
	Distortion factor of voltage	Linear load: 3% or less / Rectifier load: 8% or less (at rated output)			
	Transient voltage variation	Rapid load factor change	Within ± 5% of rated voltage (0 ⇄ 100% rapid change)		
		Power outage / recovery	Within ± 5% of rated voltage		
		Rapid input voltage change	Within ± 5% of rated voltage (± 10% rapid change)		
	Load power factor	0.9 (lag)			
	Overcurrent protection	N unit setting	110% or more (Automatic switch to bypass) *6		
		N+1 unit setting	220% or more (Automatic switch to bypass)*6	165% or more (Automatic switch to bypass)*6	147% or more (Automatic switch to bypass)*6
	Overload capacity	Inverter	N unit setting	110% (1 minute) / 118% (immediately)	
N+1 unit setting			220% (1 minute) / 236% (immediately)	165% (1 minute) / 177% (immediately)	147% (1 minute) / 157% (immediately)
Bypass		N unit setting	200% (30 seconds) / 800% (2 cycles)		
		N+1 unit setting	400% (30 seconds) / 1600% (2 cycles)	300% (30 seconds) / 1200% (2 cycles)	267% (30 seconds) / 1067% (2 cycles)
Battery	Type	Small-sized sealed lead-acid battery			
	Battery runtime	5 minutes (3U type, Ambient temperature 25 degree C, load power factor 0.8, Default value)			
	Expected service life	5 years (Ambient temperature 25 degree C)			
Acoustic noise (1m from front of equipment, A characteristics)		50 dB or less	50 dB or less	50 dB or less	
Heating value (at rated output after full recharged)		678 W or less	1062 W or less	1355 W or less	
Operating environment	Ambient Temperature	0 to 40 degree C			
	Relative humidity	20 to 90% no dew condensation			

*1: A11J103(T) is not a capacity increasable.

*2: A11J103(T) does not have 20 kVA power distribution unit.

*3: AC input voltage range changes by load factor. Load factor 70% or less: -40% to +15% / More than 70%: -20% to +15%

A11J502(N) (NEMA plug type) is as follows. Load factor 70% or less: -40% to +15% / More than 70%: -10% to +15%

*4: Input frequency range is ± 8% at auto-detect setting. At constant frequency setting, the acceptable range is from 40Hz to 120Hz.

*5: At auto-detect frequency setting, the synchronized frequency range is selectable as ± 1%, ± 3% or ± 5% (factory setting: ± 3%).

At constant frequency setting, output frequency is fixed to 50Hz or 60Hz without regard to input frequency.

*6: A conditions to switch to bypass synchronously are as follows.

· Frequency auto-detect setting is selected. · Input frequency is in the synchronized range and input voltage is in the rated voltage range.

*7: Rated active power of UL and CE approval model is 17 kW.

SANUPS ASE-H

ONLINE UPS



Modular Redundant N+1 Scalable True Online UPS

Product Lineup & Capacity

Input	Output	1~5kVA (0.7~3.5kW)
AC100,110,115,120V Single-phase	AC100,110,115,120V Single-phase	
AC208,220,230,240V Single-phase	AC208,220,230,240V Single-phase	



Provides Protection for...

- Central Management
- System Small-Mid Size Data
- Center Factory Automation
- Hospital/ Medical Device
- Semiconductor Machine
- Measuring Instrument



High Availability

ASE-H is a scalable modular redundant UPS. With redundant N+1 configuration, you can scale up to 4kVA. Even if one module fails to perform, another module will replace its place to run the within its 4kVA limit.



High Scalability

ASE-H is a scalable modular redundant UPS, which means it can be increased up to 5kVA with parallel operation and 4kVA with N+1 redundant configuration with increments of 1kVA to tailor your needs.



True Sine Wave

ASE-H produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



Double Leak Proof

SANUPS batteries are sealed and enclosed in a specially designed battery pack preventing electrical shortages and internal damages to the circuit boards. It is hot-swappable as well.



Auto Health Check

ASE-H automatically checks the battery's condition periodically and sends notifications to the host when a problem occurs. The auto health check ups will not only prevent future battery related problems and unnecessary downtime, but extends the battery life as well.

Product Number

1kVA/120V	ASE10S1HUA001-20
1kVA /208V	ASE10S1HUA002-08

Power Distribution Unit

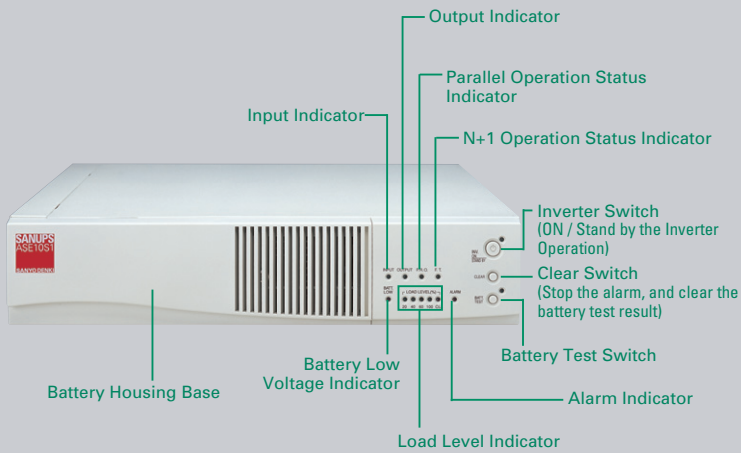
120V/Hardwire	PDASEUA01-US
208V/Hardwire	PDASEUA02-US

PDU with Maintenance Bypass

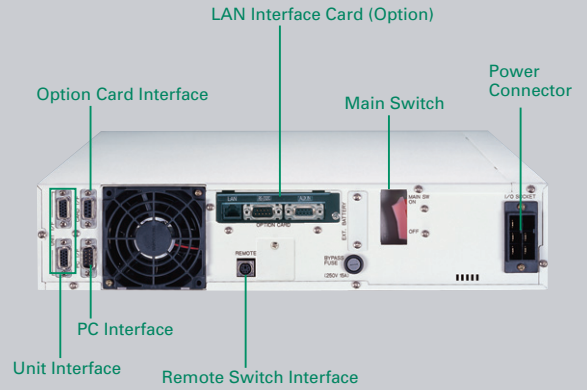
120V/Hardwire	PDASEUA01S-US
208V/Hardwire	PDASEUA02S-US

External View

Front side



Back side



External View

Item									Remarks			
Model	Standard type	ASE10S1HUA001,-10,-15,-20 (100V system) / ASE10S1HUA002-08,-20,-30,-40 (200V system)										
System	Number of units	2Units		3Units		4Units		5Units				
	System composition	N	N+1	N	N+1	N	N+1	N	N+1			
	Output power	2kVA/1.4kW	1kVA/0.7kW	3kVA/2.1kW	2kVA/1.4kW	4kVA/2.8kW	3kVA/2.1kW	5kVA/3.5kW	4kVA/2.8kW			
	Topology	True On-Line, Double conversion										
	Input rectify system	IGBT PWM										
	Inverter system	High-frequency PWM										
AC Input	Cooling	Forced air										
	Number of phase / wire	Single-phase / 2-wire									(Note 1)	
	Nominal voltage	100/110/115/120V (100V system) / 208/220/230/240V (200V system)									Same as output voltage	
	Voltage range	±15%										
	Frequency	50/60Hz									Automatic select	
	Frequency range	±1/3/5% (default 3%)									Same as output frequency range	
	Required capacity	< 1.8kVA	< 0.9kVA	< 2.7kVA	< 1.8kVA	< 3.6kVA	< 2.7kVA	< 4.5kVA	< 3.6kVA			
	Power factor	> 0.95										
AC Output	Number of phase / wire	Single-phase / 2-wire										
	Nominal voltage	100/110/115/120V (100V system) / 208/220/230/240V (200V system)										
	Voltage regulation	±5%										
	Frequency	50/60Hz									Same as input frequency	
	Frequency range	±1/3/5% (default 3%) (battery operation:< ±0.5%)									User selectable	
	Voltage distortion	Linear load	< 3%									
		Non-linear load	< 8%									
	Power factor	Nominal	0.7(lag)									
		Fluctuation range	0.7(lag) to 1.0									
	Transient voltage regulation	100% step load	±10%									On 0-100% change or on output change
		Power recovery	±10%									On rated output
Input voltage step	±10%									±10% change		
Overcurrent protection	Automatically switched to the bypass circuit (With auto return function)									(Note 2)		
Overcurrent capacity	Inverter	105% for 200ms										
	Bypass	200% for 30sec, 800% for 2cycles										
Battery	Type	Maintenance-free sealed lead-acid battery									5 years life	
	Backup time	5min.	15min.	5min.	10min.	5min.	9min.	5min.	8min.	Ambient at 77°F(25°C)		
Operation	Startup on battery	This function is supported									(Note 3)	
Acoustic noise	< 40dB			< 45dB					At 1 meter from the unit front			
Nominal heat dissipation	185W	106W	280W	190W	372W	283W	467W	377W				
Input current leak	< 4.5mA			< 6mA		< 7.5mA		< 9mA				
Operating temperature	32 to 104°F (0 to 40°C)											
Relative humidity	30 to 90% (Non-condensing)											

Note 1: When grounding is connected, the grounding phase of the input and output signals must follow the specification of the equipment.

Note 2: The inverter runs in synchronization with the AC input and momentary switching without interruption become possible when the AC input frequency is within range of the rated output frequency accuracy and at the same time when the AC input voltage is within the range of nominal voltage ±15%

Note 3: The normal inverter output can be obtained using the installed battery even if the AC power input source has any abnormalities (power failure or lowered voltage, etc.)

SANUPS A11G

ON LINE UPS



Nickel-Metal Hydride

Nickel Hydrogen Battery True Online UPS

Product Lineup & Capacity

100V model

Input	Output	Capacity
AC100, 110, 115, 120V Single-phase	AC100, 110, 115, 120V Single-phase	1.5kVA (1.05kW)

200V model

Input	Output	Capacity
AC200, 220, 230, 240V Single-phase	AC200, 220, 230, 240V Single-phase	1.5kVA (1.2kW)



Provides Protection for...

- Hospitals
- Medical Devices



Environmental Battery

A11G is SANUPS's most environmental friendly designed UPS. It uses nickel metal hydride battery (NiMH) whereas the average UPS in the market contains lead acid batteries. A11G contains no cadmium and only mildly toxic substances. It is recyclable and has significantly more energy density than a lead acid batteries.



10 YRs Product Life

A11G can last up to 10 years due it's use of the nickel metal hydride battery. The longevity of A11G has earned the trust of many medical device makers.



True Sine Wave

A11G produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



Double Leak Proof

SANUPS batteries are sealed and enclosed in a specially designed battery pack preventing electrical shortages and internal damages to the circuit boards. It is hot-swappable as well.



Auto Health Check

A11G automatically checks the battery's condition periodically and sends notifications to the host when a problem occurs. The auto health check ups will not only prevent future battery related problems and unnecessary downtime, but extends the battery life as well.

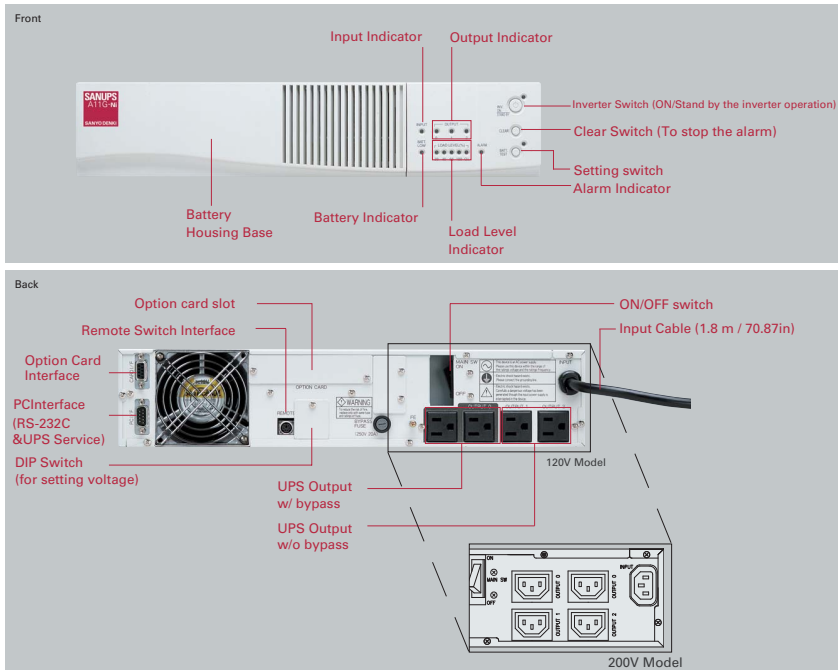
Part Number



Rack Type

1kVA A11GN152A001-20

External View



Specification

Series name		A11G-Ni		Notes	
Item	Model (Note5)	A11GN152A001	A11GN152A002		
Output capacity		1.5kVA/1.05kW	1.5kVA/1.2kW	Apparent power and active power (Note1)	
System	Topology	True On-Line, Double conversion			
	Input rectify system	IGBT PWM		IGBT	
	Cooling system	Forced Air			
	Inverter system	High-frequency PWM			
AC Input	Number of phase	Single-phase / 2-wire		(Note2)	
	Rated Voltage	100/110/115/120 ±15%	200/220/230/240 ±15%	Same as output voltage	
	Frequency	50/60Hz ±1,3,5%		The fluctuation range is the same as with the output frequency accuracy	
	Required capacity	1.3kVA	1.35kVA	Maximum capacity when the battery is recharged	
	Power factor	>0.95		When the input voltage distortion factor is less than 1%	
AC Output	Number of phase / wire	Single-phase / 2-wire			
	Rated Voltage	100/110/115/120V	200/220/230/240V		
	Voltage regulation	±2%			
	Nominal frequency	50Hz/60Hz		Same as the input frequency (auto-selection)	
	Frequency range	±1/3/5% (default 3%)		The setting can be changed Within ±0.5% during battery operation	
	Voltage distortion	Linear load	<3%		On rated output
		Non-linear load	<7%		On rated output
	Power factor	Nominal	0.7(lag)	0.8(lag)	
		Fluctuation range	0.7(lag) to 1.0		
	Transient voltage regulation	100% step load	±5%		On 0-100% change or on output change
		Power recovery	±5%		On rated output
Input voltage step		±5%		±10% change	
Overcurrent protection	Automatically switched to the bypass circuit (With auto return function)		(Note3)		
Overcurrent capacity	Inverter	105% (200ms)			
	Bypass	200% (30sec.), 800% (2cycle)			
Battery	Type	Cylindrical nickel-metal hydrogen battery		10 years life (25°C)	
	Backup time	18min.	15min.(1.05kW 18min)	Ambient at 77°F (25°C)	
Operation	Startup on battery	This function is supported		(Note4)	
Acoustic noise		<40dB		At 1 meter from the unit front	
Nominal heat dissipation		145W	145W		
Input current leak		<3mA			
Safety Standard		UL1778 (E226092), VCCI classA		-	
Environment		Operating temperature : 32 to 104°F (0 to 40°C), Relative humidity : 30 to 90% (Non-condensing)			

Note1 : The UL standard rated output capacity of A11GN152A001 is as follows.

Output voltage: 1.25 kVA/1.05 kW when 100 V is set, 1.35 kVA/1.05 kW when 110 V is set, 1.45 kVA/1.05 kW when 115 V is set, and 1.5 kVA/1.05 kW when 120 V is set.

Note2 : When grounding is connected, the grounding phase of the input and output wirings must follow the specification of the equipment.

Note3 : The inverter runs in synchronization with the AC input and momentary switching without interruption become possible when the AC input frequency is within range of the rated output frequency accuracy and at the same time when the AC input voltage is within the range of nominal voltage ±15%.

Note4 : The normal inverter output can be obtained using the installed battery even if the AC power input source has any abnormalities (power failure or lowered voltage, etc.)

Note5 : The model varies depending on the setting of the I/O voltage.

SANUPS D11A

INVERTER

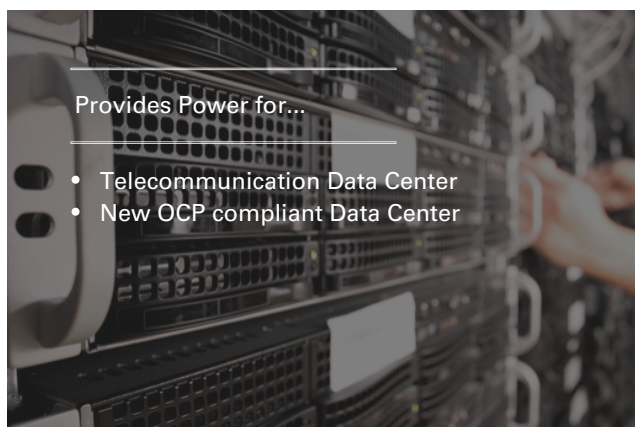


48VDC to 120VAC Scalable Inverter Parallel Redundant Configurable

Product Lineup & Capacity

Input	Output
DC48V	AC100V

Stand-alone operation	Parallel operation	Parallel redundant operation
1kVA 1kW	2kVA ~ 6kVA 2kW ~ 6kW	1kVA ~ 5kVA 1kW ~ 5kW



48VDCIN/120VACIN

D11A can input both 48VDC and 120VAC simultaneously to provide reliable power. When one of the inputs stops, D11A still provides power continuously.



True Sine Wave

D11A produces only clean, stable AC power (voltage and current) resulting in a longer battery life. It is ideal for competitive industries with critical applications.



High Scalability

D11A is a scalable moduler redundant inverter, which means it can be increased up to 6kVA with parallel operation and 5kVA with N+1 redundant configuration with increments of 1kVA to tailor your needs.



High Availability

D11A is a scalable moduler redundant inverter. With redundant N+1 configuration, you can scale up to 5kVA. Even if one module fails to perform, another module will replace its place to run the within its 5kVA limit.



Easy Installation

D11A can be installed in a parallel operation cabinet where it can be easily inserted. If there is a need for more D11A units, it is possible to install more of them vertically.

Part Number Guide

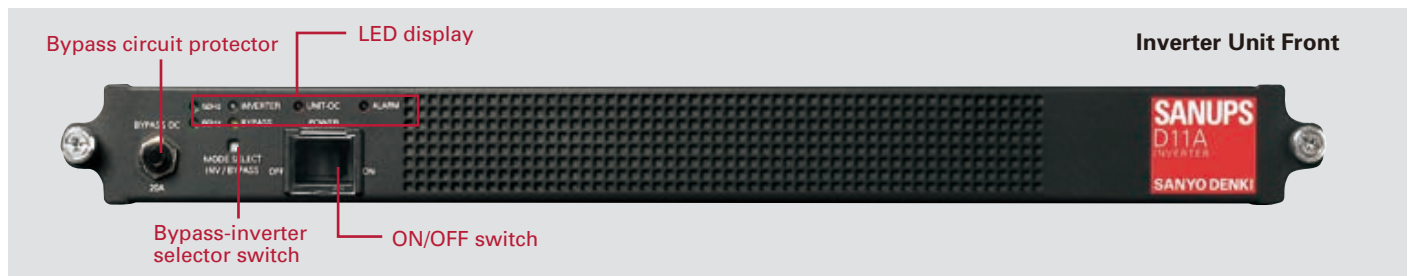
Stand Alone

1kVA	D11A102B001USP	W/O Bypass
1kVA	D11A102B011USP	With Bypass
1kVA	D11A102B001SUSP	W/O Bypass
1kVA	D11A102B011SUSP	With Bypass

Parallel Operation Cabinet

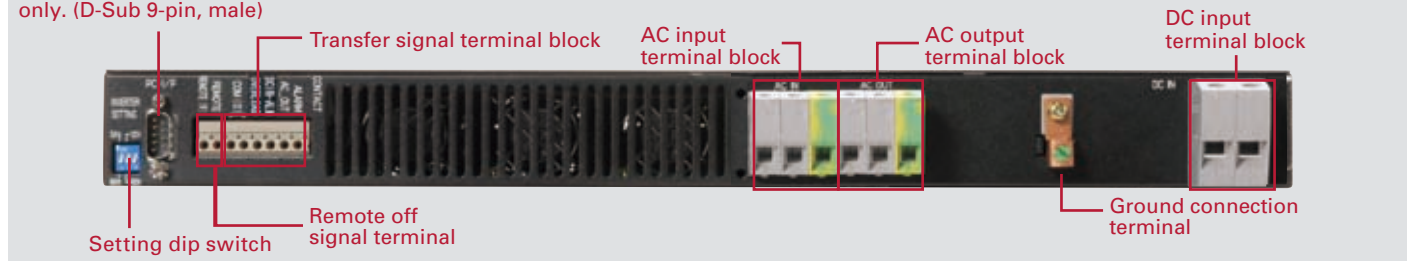
1-3kVA	PDD11AB03USP	1-3kVA
	PDD11AB13USP	1-5kVA
	PDD11AB05USP	1-5kVA
	PDD11AB15USP	1-6kVA
	PDD11AB06USP	1-6kVA
	PDD11AB16USP	

External View



Serial port for factory used only. (D-Sub 9-pin, male)

The rear view of stand alone operation.



Specification

Inverter Unit

Item		Standard or Performance		Notes
Model No.		D11A102B011US	D11A102B001US	Parallel operation DC/AC inverter
Rating capacity		1kVA(1kW)		Apparent power and active power
Bypass circuit		With	Without	
Rating		Continuous		
Cooling system		Forced Air		
Life of device		15years		
Acoustic noise		55dBMax.		1 meter (39.4 inch) in height at the front of the unit, A characteristic
Environment		5°C to 40°C		A short time : 0°C to 50°C (72 hours continuation/Annual less than 15 days)
		5% to 85%		A short time : 5% to 90% (72 hours continuation/Annual less than 15 days)
DC Input	Rated Voltage	48V		
	Variation Range	40.5V to 57V		
	Max. Input Current	29A		During rated output
	Input Feedback Noise	2mV		Evaluated value (at rated input and output with a resistance load)
AC Output	Number of phase / wire	Single-phase / 2 wire		
	Voltage	100V/120V		Sine waveDependent on the DIP switch setting*1
	Voltage regulation	±2%		
	Frequency	50 / 60Hz		Dependent on the DIP switch setting
	Frequency Regulation	±0.5% (※±1% at parallel operation)		※2
	Distortion factor of voltage waveform	8% Max.		
	Transit Voltage Variation	Rated voltage ±10%		During rated output
	Response time	100ms Max.		0⇔100% load variation
	Load Power Factor	1		Variation range 0.7 (lag) to 1.0Load power factor should not exceed 1 kVA at 0.7 (lag).
	Overcurrent Protection	105%以上		
AC Input for Bypass circuit	Rated Voltage	100V/120V	-	Sine waveDependent on the DIP switch setting
	Variation Range	100V±15% 120V±15%	-	
	Max. Input Current	12.5A 10.4A	-	During rated output During rated output
	Capacity of circuit protector	20A	-	
Safety Standard		UL (E203489)/CE	UL (E203489)/CE	UL 60950-1, IEC 60950-1: 2005 2nd Edition
Safety EMC Standard	emission	VCCI Class-A, IEC62040-2: 2005, CISPR22: 2005 Class-A, FCC Part 15 sub B Class A		
	Immunity	IEC62040-2: 2005, CISPR24: 1997/A1: 2001/A2: 2002		

※1: When you change the DIP switch settings, be sure to do so before the DC power is received. Even if you change the settings after the DC power is received, the changes will not become effective.

※2: When the AC input power is received, the inverter output performs synchronization operation in the frequency variation range of ±5% of the AC input so the frequency regulation is ±5% of the rated frequency

Electrical Characteristics of the Cabinet

With Bypass Circuit

Cabinet model No.	PD-D11AB13 PD-D11AB13US				PD-D11AB15 PD-D11AB15US				PD-D11AB16 PD-D11AB16US		
	2		3		4		5		6		
Device configuration	N-unit configuration	N+1-unit configuration	N-unit configuration	N+1-unit configuration	N-unit configuration	N+1-unit configuration	N-unit configuration	N+1-unit configuration	N-unit configuration	N+1-unit configuration	
DC Input	Nominal voltage										
	48V										
	Voltage range										
40.5V to 57.0V											
	Rated input current	48.4	25.2	72.6	49.4	96.7	73.5	120.8	97.6	145.0	121.6
	Maximum input current	58.5	30.4	87.6	59.5	116.8	88.7	146.0	117.9	175.1	147.0
AC Input	Nominal voltage										
	100V or 120V										
	Voltage range										
85V to 115V or 102V to 138V											
	Maximum input current	20.4	10.3	30.6	20.5	40.8	30.7	51.0	40.9	61.2	51.1
AC Output	Nominal voltage										
	100V/120V ※ It dependent on the device setting										
	Voltage range										
	99V to 101V or 117.6V to 122.4V ※ It dependent on the inverter unit										
	Rated output current	20	10	30	20	40	30	50	40	60	50
	Rated output	2	1	3	2	4	3	5	4	6	5

SANUPS SOFTWARE



Flexible Management

SANUPS's software will not only allow automatic shut down of the UPS in the event of a major malfunction and overload, but will automatically start-up when the power is being recovered. There is an option to turn off the automatic start up until the battery charge reaches the pre-set amount.



Easy Maintenance

Maintenance is easily done from Telnet and a web browser. Notifications of battery replacement and major malfunctions are sent via email to the host.



Multiple Interfaces

With SANUPS's software, you can shut targeted system down through Telnet connection. The host can choose which signal communication (WakeOnLAN, SNMP, DHCP, and DNS) to turn on to receive information from the software. There are also optional UPS connection cards available such serial, dry contact and LAN Card.



Central Management

The IT Monitor Manager uses SNMP (Simple Network Management Protocol) to remotely monitor and manage up to 500 Sanyo Denki UPS devices.



Real Time Monitoring

The IT Monitor Manager records and displays not only status history, but also real time status. It is designed for those who manage large IT infrastructures.



Notification

When a problem occurs with the UPS, the IT Monitor Manager notifies you by a pop-up message or an e-mail. Additionally, data can be collected and saved as a batch file in a designated server location. (Currently support Windows version only)

Remote Monitoring Software

SANUPS IT Monitor Manager



Ideal for

- Small to Mid-Size Data Center IT Managers
- FA Production System Traffic Management System

Product Number

- SANUPS LAN/SNMP Card PRLANIF003-US
- SANUPS LAN/SNMP Card with Temp & Humi Sensor for Temperature PRLANIF005-US
- SANUPS LAN/SNMP Card with Temp & Humi Sensor for Humidity PRLANSN001
- SANUPS Relay Option Card PRLANSN002
- SANUPS SOFTWARE for Windows PRCONIF003-US
- SANUPS SOFTWARE for multi OS PMS40H00E
- SANUPS SOFTWARE for multi OS with DB9-25 IT Monitor Manager PMS41F00E
- PMS41F01E
- PMS34C00E

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8 Factories

3000 Employees



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Sanyo Denki's ECO PRODUCTS are designed with the concept of lessening impact on the environment in the process from product development to waste. The product units and packaging materials are designed for reduced environmental impact. We have established our own assessment criteria on the environmental impacts applicable to all processes, ranging from design to manufacture. Those products that satisfy the criteria are accredited as ECO PRODUCTS.

Notes when investigating use of this product in your applications

- Before starting installation, assembling and use, read the "Operation Manual" carefully and use the product correctly in your applications.
- When you are going to use this product in the following application, the special considerations are required for operation, running, maintenance and control.
Be sure to consult with our company as a part of your investigations.
 - (a) Medical equipment and other equipment that are related directly to human life.
 - (b) Train or elevator that can give injury to human body.
 - (c) Socially and publicly important computer systems
 - (d) And other equipment that are related to safety of human life and that can affect severe effects on maintenance of public functions.
- For the applications that undergo vibration such as vehicles, ships and transportation facilities, please consult with our company.
- Never modify this product or give additional processing to this product.
- For the installation and maintenance work, please consult with our company or with specialized company.

Note: For any inquiry or consultation, please contact our sales representative.

All data is based on SANYO DENKI'S Standard Test Method. Specifications and availability are subject to change without notice. Weight and dimensions are approximate. Products not shown to scale. At time of printing, A11J 10kVA MODEL has not been listed as UL. This device is not offered for sale or lease until authorization is obtained. ©2016 Sanyo Denki America, Inc. All rights reserved.

SANYO DENKI

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