

SANUPS

HYBRID UPS

E11A



SANYO DENKI

Hybrid UPS Saves Energy and Achieves High Reliability

E11A



Network Support

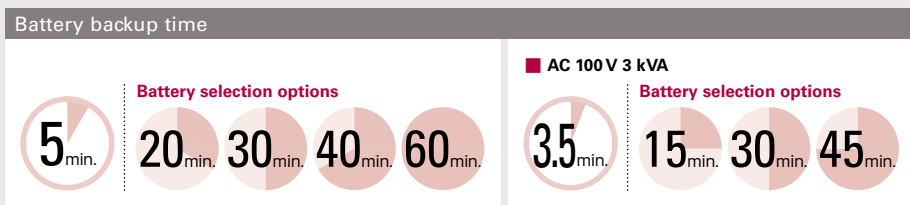


19-inch Rack Mountable



1 to 3 kVA Standard type

Input / Output AC [Single-phase 2-wire]	Output capacity [kVA(kW)]			
	100	110	115	120
100v model	100	110	115	120
200v model	200	208	220	240



Installation example

EIA standard
Includes metal brackets for 19-inch rack installation.
Rack support rail is optional.



Vertical state

0.35 kVA · 0.75 kVA Standard type

Input / Output AC [Single-phase 2-wire]	Output capacity [kVA(kW)]		Battery backup time
	100	110	
100v model	100	110	6 min.

Battery startup function

Even with no input current, the UPS can be initialized and inverter output obtained from the internal battery.

Tower type

Input / Output AC [Single-phase 2-wire]	Output capacity [kVA(kW)]		
	100	110	115
100v model	100	110	115

Battery backup time

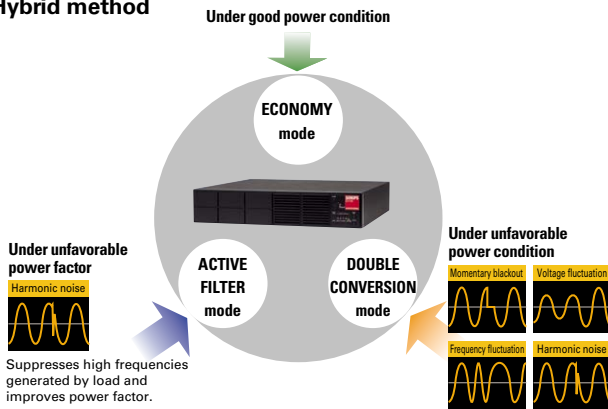
- 0.75 kVA: 6 min.
- 1 kVA · 1.5 kVA: 5 min.



Energy conservation

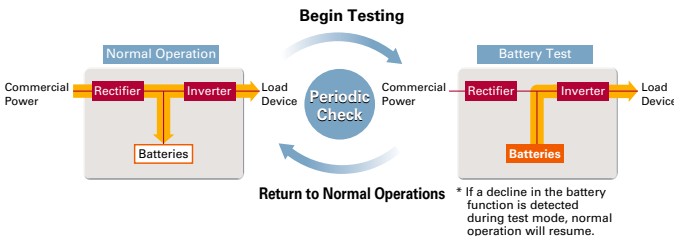
- Conversion efficiency of the SANUPS E11A is increased by 4%* compared to comparable online UPS.
 - * It is a result of comparing the performances with existing 1 kVA UPS of our company.
- The Hybrid type SANUPS E11A automatically selects the most efficient mode of operation for any given power condition. Operating mode can be manually chosen and locked by the end user.

Hybrid method



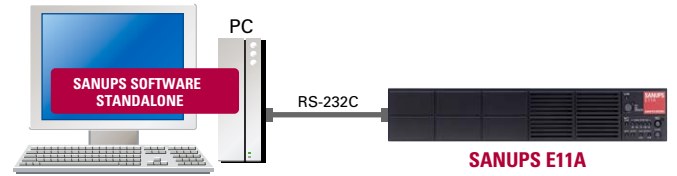
High quality

- The SANUPS E11A automatically performs regular battery tests for operation during a power outage, and maintains peak battery conditions for reliable operation during an actual power outage.
- The frequency of the battery test is open to configuration.
 - * Test frequency choices are 1, 3 and 6 months; the factory setting is 6 months.

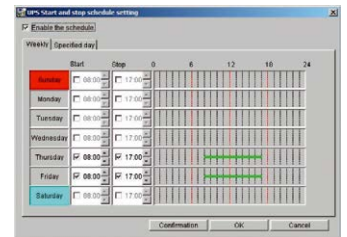


Easy power supply management

- The UPS Management Software "SANUPS SOFTWARE STANDALONE" is included to enable you to manage power supply from a PC. You can easily see the UPS status from a PC or server.



- Supported OS
- Windows NT4.0
 - Windows 2000
 - Windows XP
 - Windows Server 2003
 - Windows Server 2008
 - Windows Vista
 - Windows 7
 - Windows 8
 - Windows Server 2012



Trouble free battery exchange

- Battery packs can be exchanged from the front even while the inverter is supplying power.
 - * Exchange of 0.35 kVA and 3 kVA batteries, and batteries with UL standards or CE markings, must be carried out by appointment with us.

Network Options

LAN interface card

This interface card allows UPS units to directly connect to LAN. It monitors and reports on power supply status, takes quick action in case of a power failure and other malfunction, and informs the system administrator via E-mail on any power problems. Support for SSH (Secure Shell).



Dry contact signal interface card

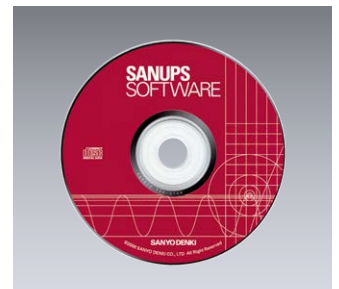
This interface card for Sanyo Denki UPSs provides no-voltage contacts for external transfer of UPS signals.



SANUPS SOFTWARE

This software automatically shuts down the system and stops the UPS when a failure occurs in the commercial power supply. Smooth power management is still ensured even when the UPS is connected to many computers.

- | | |
|------------------|---------------------------|
| for Windows | PMS40H00E (without cable) |
| for Multiple OS* | PMS41H00E (without cable) |
- * Corresponds to all following OS.



for Windows

- Windows 2000
- Windows XP (x86 / x64)
- Windows Server 2003 (x86 / x64 / IA-64)
- Windows Server 2003 R2 (x86 / x64)
- Windows Vista (x86 / x64)
- Windows Server 2008 (x86 / x64 / IA-64)
- Windows Web Server 2008 (x86 / x64)
- Windows Server 2008 R2 (x64)
- Windows Web Server 2008 R2 (x64)
- Windows 7 (x86 / x64)
- Windows 8 (x86 / x64)
- Windows Server 2012 (x64)

for UNIX

- Solaris 8, 9, 10, 11 (SPARC)
- Solaris 10, 11 (x86)
- AIX 5.1, 5.2, 5.3, 6.1, 7.1
- HP-UX 11i v1
- HP-UX 11i v2 for Itanium, 11i v3 for Itanium

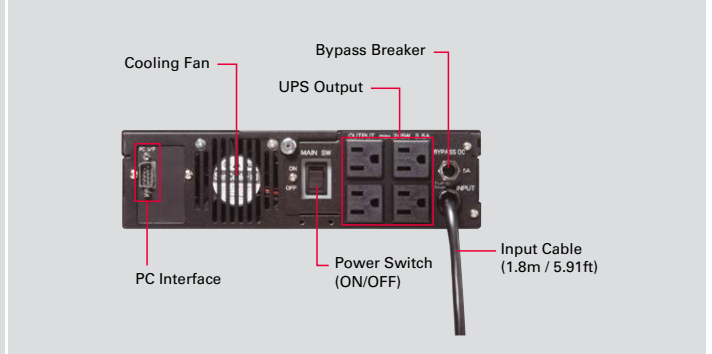
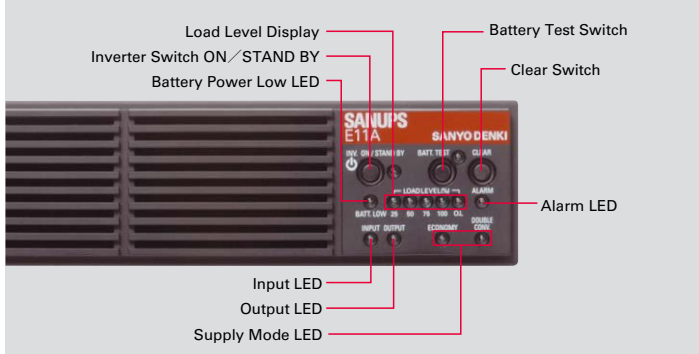
for Linux

- Red Hat Enterprise Linux v.3, v.4, v.5, v.6 (x86 / x64 / IA-64)
- SUSE Linux Enterprise Server 9, 10, 11 (x86 / x64)
- Turbolinux 10 Server (x86 / x64)
- MIRACLE LINUX V4.0 (x86 / x64)
- MIRACLE LINUX Asianux Server 3 (x86 / x64)
- VMWare ESX Server 3.0, 3.5, 4.0, 4.1

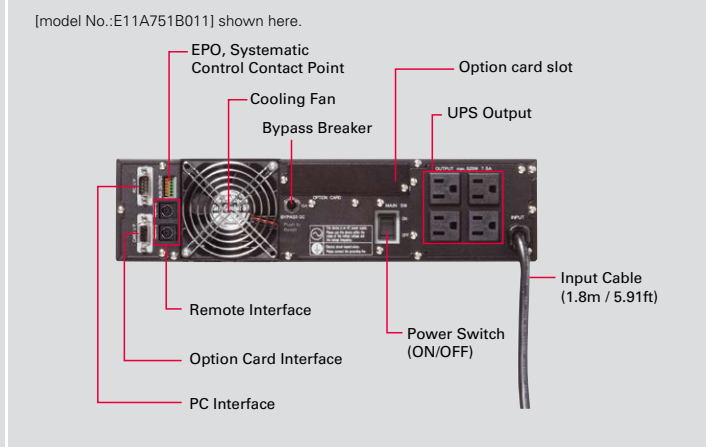
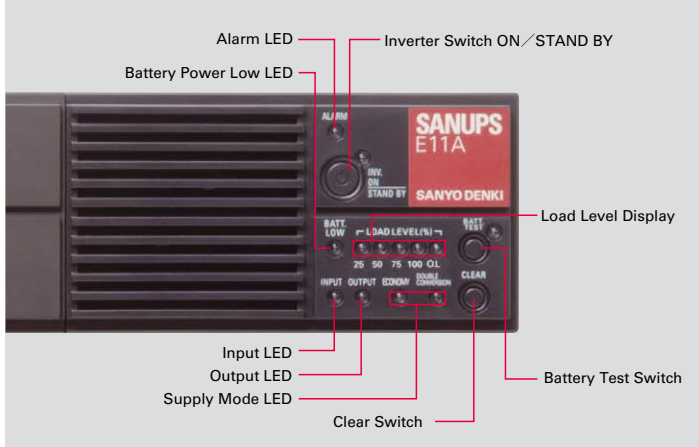
*See our web site for the most recent list of supported operating systems.

External View

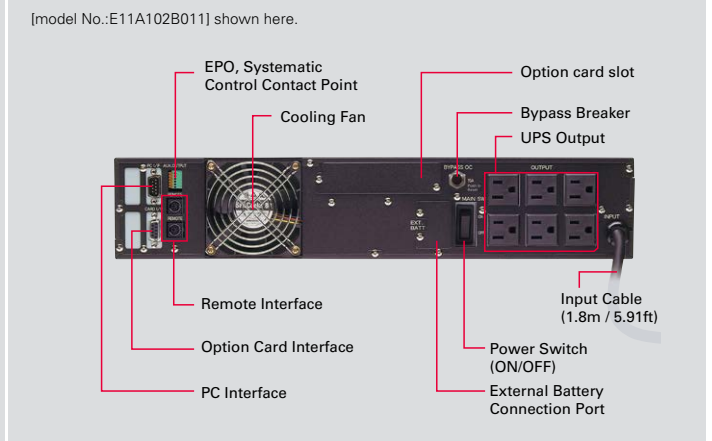
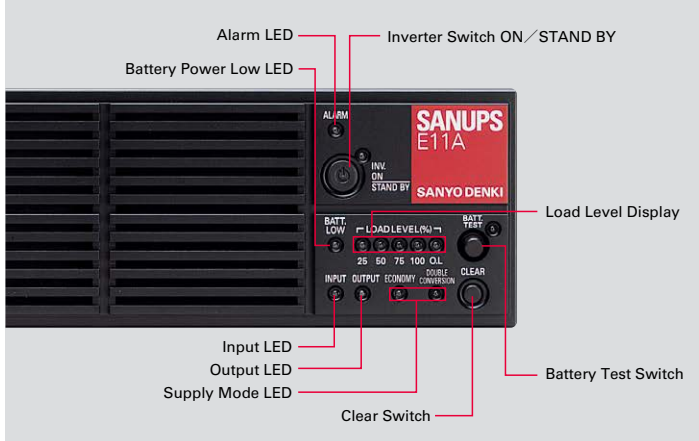
0.35 kVA Standard type



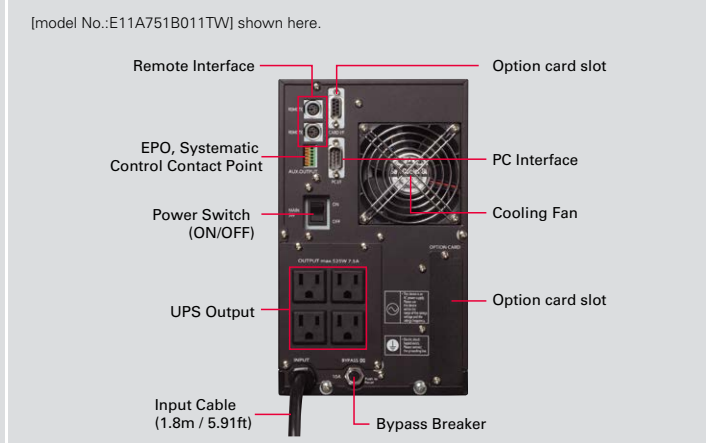
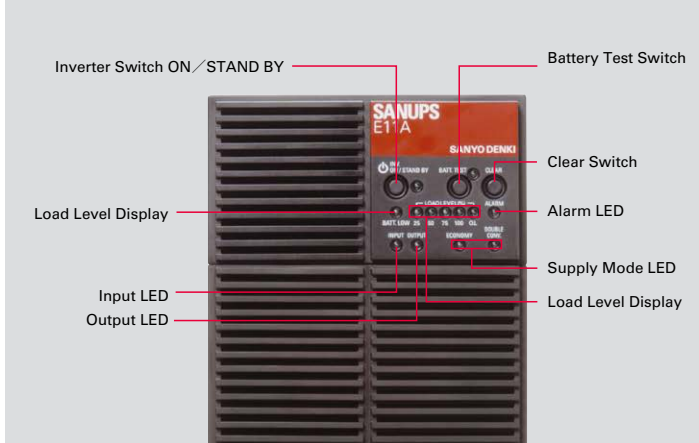
0.75 kVA Standard type



1 to 3 kVA Standard type



Tower type



Interface & INPUT / OUTPUT Connection Chart

■ Standard type

	Output capacity	UL / CE	Model No.	PC (RS-232C)	Remote	EPO*1	System Control Contact	LAN interface card (Option)	Dry contact signal interface card (Option)	INPUT Plug / Receptacle	OUTPUT Receptacle		
100 V Model (100 V to 120 V)	0.35 kVA	✓	E11A351B001UJ	✓	—	—	—	—	—	NEMA 5-15P	NEMA 5-15R×4		
		✓	E11A351B021UJ*2	✓	—	—	—	—	—				
	0.75 kVA	✓	E11A751B001UJ	✓	—	—	—	✓	—			NEMA 5-15P	NEMA 5-15R×6
		✓	E11A751B011UJ	✓	✓	✓	✓	✓	✓				
		✓	E11A751B021UJ	✓	—	—	—	✓	✓				
	1 kVA	✓	E11A102B001UJ	✓	—	—	—	✓	—	NEMA 5-20P	NEMA 5-20R×4		
		✓	E11A102B011UJ	✓	✓	✓	✓	✓	✓				
	1.5 kVA	—	E11A152B001	✓	—	—	—	✓	—				
		—	E11A152B011	✓	✓	✓	✓	✓	✓				
		✓	E11A152B001UJ	✓	—	—	—	✓	—				
	✓	E11A152B011UJ	✓	✓	✓	✓	✓	✓					
	2 kVA	—	E11A202B001	✓	—	—	—	✓	—	NEMA L5-30P	NEMA L5-20R×1 NEMA 5-15R×3 NEMA L5-30R×1		
		—	E11A202B011	✓	✓	✓	✓	✓	✓				
		✓	E11A202B001UJ	✓	—	—	—	✓	—				
		✓	E11A202B011UJ	✓	✓	✓	✓	✓	✓				
	3 kVA	—	E11A302B001	✓	—	—	—	✓	—	NEMA L6-20P	IEC60320-C13×4 IEC60320-C19×3		
—		E11A302B011	✓	✓	✓	✓	✓	✓					
✓		E11A302B001UJ	✓	—	—	—	✓	—					
✓		E11A302B011UJ	✓	✓	✓	✓	✓	✓					
200 V Model (200 V to 240 V)	1 kVA	✓	E11A102B002UJ	✓	—	—	—	✓	—	NEMA L6-20P	IEC60320-C13×4 IEC60320-C19×3		
		✓	E11A102B012UJ	✓	✓	✓	✓	✓	✓				
	2 kVA	✓	E11A202B002UJ	✓	—	—	—	✓	—	NEMA L6-20P	IEC60320-C13×4 IEC60320-C19×3		
		✓	E11A202B012UJ	✓	✓	✓	✓	✓	✓				
	3 kVA	✓	E11A302B002UJ	✓	—	—	—	✓	—	NEMA L6-20P	IEC60320-C13×4 IEC60320-C19×3		
		✓	E11A302B012UJ	✓	✓	✓	✓	✓	✓				

*1 : EPO = Emergency Power Off *2 : With external transmission output (transistor output)
Contact us about support for products with I/O terminal blocks.

■ Tower type

	Output capacity	UL / CE	Model No.	PC (RS-232C)	Remote	EPO*1	System Control Contact	LAN interface card (Option)	Dry contact signal interface card (Option)	INPUT Plug / Receptacle	OUTPUT Receptacle		
100 V Model (100 V to 120 V)	0.75 kVA	✓	E11A751B001TWUJ	✓	—	—	—	✓	—	NEMA 5-15P	NEMA 5-15R×4		
		✓	E11A751B011TWUJ	✓	✓	✓	✓	✓	✓				
		✓	E11A751B021TWUJ	✓	—	—	—	✓	✓				
	1 kVA	✓	E11A102B001TWUJ	✓	—	—	—	✓	—			NEMA 5-20P	NEMA 5-20R×4
		✓	E11A102B011TWUJ	✓	✓	✓	✓	✓	✓				
		✓	E11A102B021TWUJ	✓	—	—	—	✓	✓				
	1.5 kVA	—	E11A152B001TW	✓	—	—	—	✓	—	NEMA 5-20P	NEMA 5-20R×4		
		—	E11A152B011TW	✓	✓	✓	✓	✓	✓				
		—	E11A152B021TW	✓	—	—	—	✓	✓				
		✓	E11A152B001TWUJ	✓	—	—	—	✓	—				
✓	E11A152B011TWUJ	✓	✓	✓	✓	✓	✓						
✓	E11A152B021TWUJ	✓	—	—	—	✓	✓						

*1 : EPO = Emergency Power Off

Specifications

Common

Operation Mode ^{*1}		Economy mode	Active filter mode	Double conversion mode	Remarks
System	Topology	Hybrid			
	Cooling	Forced Air			
AC input	Number of phase / wire	Single-phase / 2 wire			
	Voltage range acceptable	± 8% Max. (Auto selected mode ± 5%)	± 5% Max.	-20%, +15%	
	Frequency	50 Hz or 60 Hz			Auto-sensing
	Frequency range	Rated frequency ± 1%, 3%, 5% Max. (Manually selectable)		Rated frequency ± 8% Max.	
	Load power factor	Same as load power factor	0.85 Min.	0.95 Min.	< 1% Input voltage distortion / lag
AC output	Number of phase / wire	Single-phase / 2 wire			
	Load power factor	0.7 (lag)			Acceptable range for variation : 0.7 (lag) to 1.0
	Nominal voltage	-10%, +8% Max. (Auto selected mode -7%, +5% Max.)	-7%, +5% Max.	± 2% Max.	In terms of domain of load and input
	Frequency	50 Hz or 60 Hz			Same as input frequency
	Frequency range	On normal operation	Rated frequency ± 1%, 3%, 5% Max. (Manually selectable)		Rated frequency ± 1% Max.
		On battery operation	—		± 0.5% Max.
	Transient voltage regulation	Input Voltage step	—		± 5% Max.
100% step load		—		± 5% Max.	0%: at the time of 100% sudden fluctuation
Overcurrent capacity		200% (30 sec.)		105% (200 ms)	Rated load power factor / at rated input
		800% (2 cycle)		—	
Battery type		Maintenance free sealed lead-acid battery (small)			
Environment		Operating temperature : 0 °C to 40 °C (32 to 104 °F), Relative humidity : 20% to 90% (Non-condensing)			
Safety standard		UL1778-4th/C22.2 No.107.3-05-2nd, CE: IEC62040-1:2008			
EMC	Emission standard (Noise standard)	EN62040-2 C2:2006, EN55022:2006 Class-A (FCC Part15 Sub partB Class-A, CISPR 22 Class-A, VCCI Class-A)			200 V : VCCI
	Immunity	EN62040-2:2006, EN55024:1998/A1:2001/A2:2003			

*1 : A momentary power interruption lasting less than 5 ms occurs when switching from Economy mode or Active filter mode to battery power. The unit can also be fixed to the Double conversion mode for applications that require zero transfer time from utility power to battery power.

100V Model (100V to 120V)

Model No.	E11A351B	E11A751B	E11A102B	E11A152B	E11A202B	E11A302B	Remarks
Rated output capacity (Apparent power / Active power)	0.35 kVA / 0.245 kW	0.75 kVA / 0.525 kW	1 kVA / 0.7 kW	1.5 kVA / 1.05 kW	2 kVA / 1.4 kW	3 kVA / 2.1 kW ^{*3}	Load power factor = 0.7
AC input / output	Rated voltage: 100 V, 110 V, 115 V, 120 V						Manually selectable, Factory setting: 100V
AC output	Overcurrent protection: Breaker protection						*1
	Voltage distortion	Linear load	3%				
Non-linear load		8%	7%				
Run-time	6 min.		5 min.		3.5 min.		Ambient Temp. of 25°C, under rated load
Nominal heat dissipation	59 W	111 W	125 W	200 W	250 W	460 W	*2
Acoustic noise	40 dB Max.				45 dB Max.		At 1m (40 in) from the front of unit

*1 : Bypass uninterrupted switching (auto-return) in double conversion mode. Auto-return setting can also be disabled.

*2 : For Double conversion mode.

*3 : For UL products.

Output voltage setting	Output capacity
100 V	2.5 kVA / 1.75 kW
110 V	2.75 kVA / 1.925 kW
115 V	2.875 kVA / 2.013 kW
120 V	3 kVA / 2.1 kW

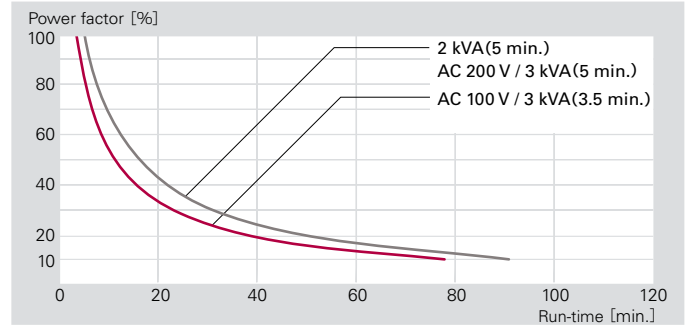
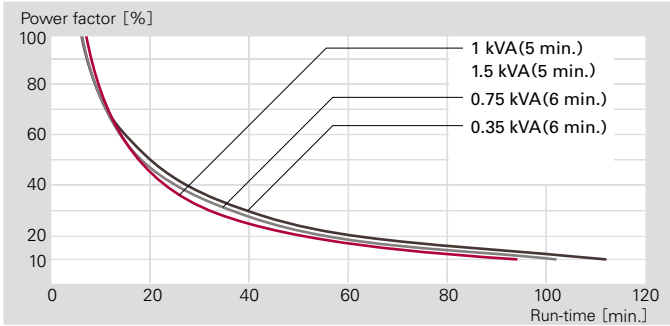
200V Model (200V to 240V)

Model No.	E11A102B	E11A202B	E11A302B	Remarks
Rated output capacity (Apparent power / Active power)	1 kVA / 0.7 kW	2 kVA / 1.4 kW	3 kVA / 2.1 kW	Load power factor = 0.7
AC input / output	Rated voltage: 200 V, 208 V, 220 V, 230 V, 240 V			Manually selectable, Factory setting: 200V
AC output	Overcurrent protection: Breaker Protection			*1
	Voltage distortion	Linear load	3%	
Non-linear load		7%		During rated operations / 100% rectifier load ^{*2}
Run-time	5 min.			Ambient Temp. of 25°C, under rated load
Nominal heat dissipation	125 W	270 W	460 W	*2
Acoustic noise	40 dB Max.		45 dB Max.	At 1m (40 in) from the front of unit

*1 : Bypass uninterrupted switching (auto-return) in double conversion mode. Auto-return setting can also be disabled.

*2 : For Double conversion mode.

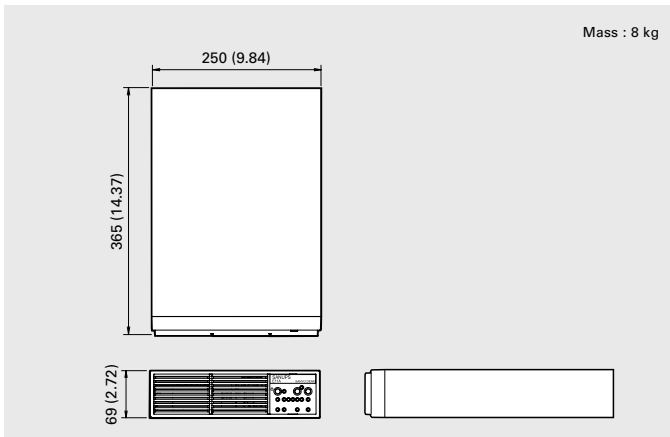
Power factor & Run-time chart



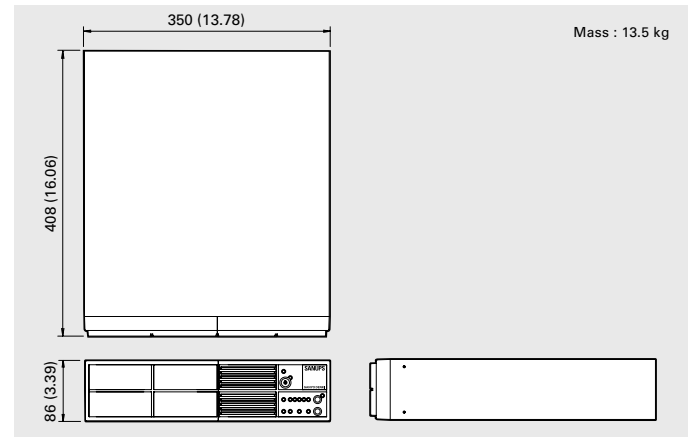
(Note) Ambient Temp. of 25°C, Default, Load power factor = 0.7

Dimensions : mm (inch)

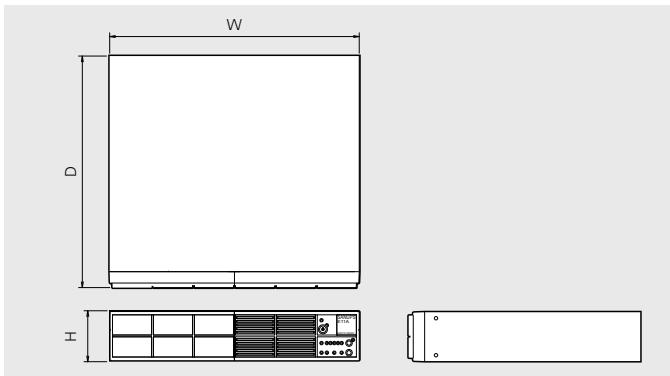
0.35 kVA Standard type



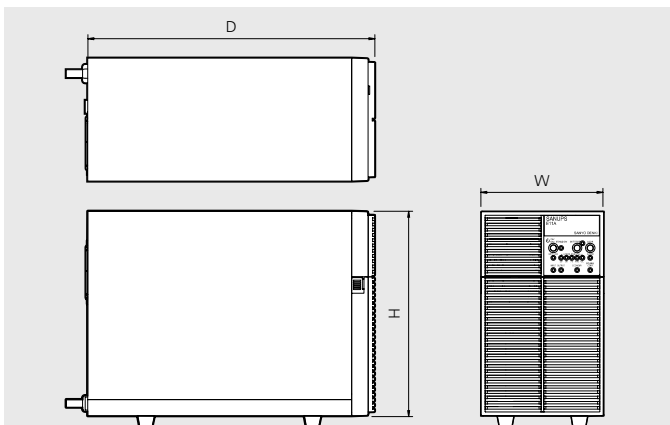
0.75 kVA Standard type



1 kVA to 3 kVA Standard type



0.75 kVA to 1.5 kVA Tower type



Output capacity	W	D	H	Mass
0.75 kVA	150	350 (13.78)	250 (9.84)	14 kg
1 kVA	(5.91)	395 (15.55)		17 kg
1.5 kVA		450 (17.72)		22 kg

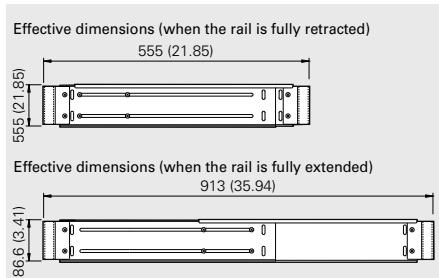
Paint Color : Black (Munsell N1.5)

Option

Item	Model	Remarks
LAN interface card	PRLANIF003-US	Provides continuous monitoring and reporting of power conditions. Power problems can also be reported to the system manager via e-mail.
	PRLANIF005-US (Environmental monitoring function)	This model includes the functions of the PRLANIF003 and adds the capability to monitor UPS ambient temperature and humidity utilizing temperature and humidity sensors.
Dry contact signal interface card	PRCONIF001-US (Terminal box type) PRCONIF003-US (D-sub 15 pin type)	This interface card for Sanyo Denki UPS provides no-voltage contacts for external transfer of UPS signals.
SANUPS SOFTWARE	PMS4 □□□□	This software automatically shuts down the system and stops the UPS when a failure occurs in the commercial power supply.
Remote switch	RSW011 (Cable length approx. 10m) RSW013 (Cable length approx. 2m)	Used for remotely turning on or off outlets of the UPS. ON/OFF switching of a maximum of 5 connected UPS units.
Linked operation cable	P10197 (1 m) P10198 (3 m)	Signal cable for linked ON/OFF control of multiple connected UPS units.
Outlet box	P10037 (for 100 V 1 kVA, 1.5 kVA) P10040 (for 100 V 2 kVA) P10030 (for 100 V 3 kVA)	ON/OFF control and division of UPS output to 3 systems using the UPS system control contact signal.
Rack support rail	RM030 (for 1 kVA, 1.5 kVA, 2 kVA, 3 kVA) RME11A751A00 (for 0.75 kVA)	Used for mounting the UPS onto a 19 inch rack.
Standard type floor bracket	FMA11F00	This bracket secures a standard type UPS (from 0.75 kVA to 2 kVA) to the floor. * Standard accessory with 3 kVA type
Tower type floor bracket	FME11AA03 (for 0.75 kVA) FME11AA04 (for 1 kVA) FME11AA05 (for 1.5 kVA)	This bracket secures a tower type UPS to the floor.
Standard type air filter	FL001 (for 1 kVA, 1.5 kVA, 2 kVA, 3 kVA) FL002 (for 0.75 kVA) FL003 (for 0.35 kVA)	Front side air intake filter to prevent dust ingress.
Tower type air filter	FL004	

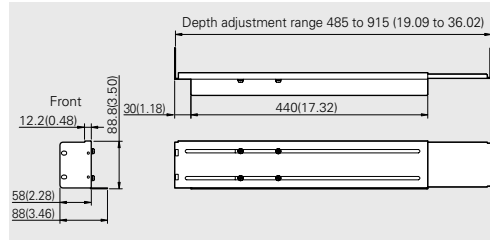
Rack support rail dimensions : mm (inch)

RM030



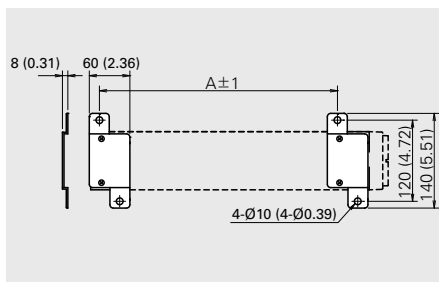
Mounting fixtures are packaged with the UPS unit.

RME11A751A00



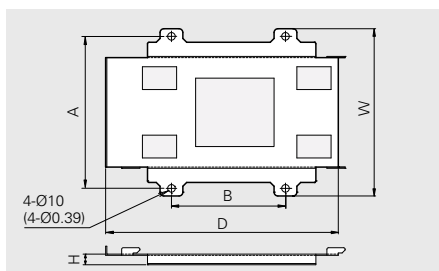
Mounting fixtures are packaged with the rack support rail.

Floor bracket dimensions : mm (inch)



Output capacity	A
0.75 kVA	320 (12.60)
1 kVA	
1.5 kVA	412 (16.22)
2 kVA	477 (18.78)

Tower type floor bracket dimensions : mm (inch)



Model No.	Output capacity	W	D	H	A	B
FME11AA03	0.75 kVA	220 (8.66)	306.1 (12.05)	14 (0.55)	200 (7.87)	150 (5.91)
FME11AA04	1 kVA		351.1 (13.82)			200 (7.87)
FME11AA05	1.5 kVA	406.1 (15.99)	250 (9.84)			

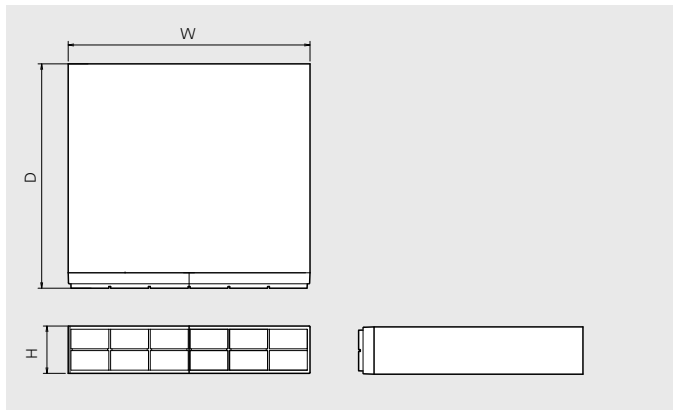
■ External battery module

Specifications

Model No.*	Model	Dimensions : mm (inch)			Mass	Run-time						
		W	D	H		15 min.	20 min.	30 min.	40 min.	45 min.	60 min.	
BCE11A102A01US	For 1 kVA 100 V or 200 V model	440 (17.32)	408 (16.06)	86 (3.39)	20 kg	—	1 unit	—	2 unit	—	3 unit	
BCE11A102A02US			508 (20.00)		29 kg	—	—	1 unit	—	—	—	2 unit
BCE11A152A01US	For 1.5 kVA 100 V or 200 V model		500 (19.69)		26 kg	—	1 unit	—	—	2 unit	—	3 unit
BCE11A152A02US			600 (23.62)		38 kg	—	—	1 unit	—	—	—	2 unit
BCE11A202A01US	For 2 kVA 100 V or 200 V model		565 (22.24)		34 kg	—	1 unit	—	—	2 unit	—	3 unit
BCE11A202A02US			630 (24.80)		47 kg	—	—	1 unit	—	—	—	2 unit
BCE11A302A03US	For 3 kVA 100 V model		660 (25.98)		50 kg	1 unit	—	—	2 unit	—	3 unit	—
BCE11A302A01US	For 3 kVA 200 V model		750 (29.53)		52 kg	—	1 unit	—	—	2 unit	—	3 unit

*Tower type does not support additional battery installation.

Dimensions : mm (inch)



- If the model number of a battery has a 01US or 03US, it can be replaced while the power is on. Simply remove the front cover and replace the battery.
- If the model number of a battery has a 02US, the whole battery module must be replaced. (US module, due to restrictions imposed by UL Standard and CE Marking, in principle it should be performed only by technically qualified personnel.)

Paint Color : Black (Munsell N1.5)

UPS selection method

Step 1 Decide the target devices for backup.

- First, determine which devices (server and network devices) are most severely impacted by a power failure.

Step 2 Check the VA and W power consumption values of the target devices for backup.

- Check power consumption of the target devices for backup by referring to their specifications or catalogs.
- If VA and/or W values are not indicated, use the following calculation method.

(1) If only the W value is indicated for power consumption: $VA = W \div \text{Power Factor}$

The power factor is different depending on the device.

If power consumption information such as power factor is not available, check with the maker directly.

If it is unknown, calculate the capacity using $W=VA$.

(2) If only the VA value is indicated for power consumption: $W=VA \times \text{Power Factor}$

(3) If there is no power consumption indication and only A is known for the input current indication:
 $W = VA = A \times \text{Device Voltage (V)}$

Step 3 Determine output capacity of UPS

- Always select a UPS with output capacity (VA/W) larger than the "Total VA" and "Total W" values respectively.

Step 4 Check the required backup time.

- Use the backup time table listed on the next page for calculations.

: For the 1 kVA model, backup time is 5 minutes for 1000 VA / 700 W, and 15 minutes for 500 VA / 350 W.

* Do not connect to devices that ordinarily draw large current, such as laser printers, plain paper faxes, copiers, and OHP. Overcurrent may prevent the UPS from functioning normally.

* When an inductive device such as motor or coil is used, always check its operation in advance. Inrush current may prevent the UPS from functioning normally.

* Stated backup time is for initial settings and an ambient temperature of 25°C.

Selection example

Check the VA and W values of power consumption of the device to back up.

	Power consumption		Power factor
	VA	W	
Server made by company A	450	441	0.98
PC made by company B	170	166	0.98
Display	63	59	0.94
HUB	20	18	0.90
Total	703	684	—

In this calculation example, the UPS output capacity must be above 703 VA / 684 W.

Because the 1 kVA model's output capacity is 1000 VA / 700 W, 1000 VA > 703 VA (70%) and 700 W > 684 W. As both VA and W values of power consumption are less than the UPS output capacity, it can be used.

In this case, if the display is excluded, $625 W \div 700 W = 89\%$ and there is a surplus of 11%.

Check the required backup time.

In this backup time calculation example (684 W), as the backup time table indicates "6 minutes at 630W" and "5 minutes at 700 W", the backup time will last for 5 to 6 minutes.

Run-time chart

0.35 kVA, 0.75 kVA

Model No.		E11A351B □□□	E11A751B □□□
Maximum Output (VA)		350	750
Maximum Output (W)		245	525
Power consumption values of target devices for backup		Run-time (min.)	
VA	W		
100	70	41	92
200	140	14	39
300	210	8	27
350	245	6	18
400	280	—	15
500	350	—	11
600	420	—	9
700	490	—	7
750	525	—	6

1 kVA to 3 kVA

Model No.		E11A102B □□□	E11A152B □□□	E11A202B □□□	E11A302B □□□1	E11A302B □□□2
Maximum Output (VA)		1000	1500	2000	3000	3000
Maximum Output (W)		700	1050	1400	2100	2100
Power consumption values of target devices for backup		Run-time (min.)				
VA	W					
100	70	87	134	150	230	240
200	140	48	71	87	120	150
300	210	30	48	61	75	87
400	280	20	34	48	55	71
500	350	15	24	37	49	54
600	420	12	20	30	39	48
700	490	9	17	25	32	40
800	560	7	14	20	26	34
900	630	6	12	18	23	31
1000	700	5	10	15	20	28
1200	840	—	7	12	16	20
1400	980	—	6	9	13	17
1500	1050	—	5	8	11	16
1600	1120	—	—	7	10	14
1800	1260	—	—	6	9	12
2000	1400	—	—	5	8	10
2200	1540	—	—	—	7	9
2400	1680	—	—	—	6	8
2600	1820	—	—	—	5	7
2800	1960	—	—	—	4	6
3000	2100	—	—	—	3.5	5

The above run-time values assumes a load power factor = 0.7 (lag)

Figures should be used for reference only. Actual backup times depend on charging conditions, ambient temperature, years in use, etc.



■Eco Products

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.
- ※For any inquiry or consultation, please contact our sales representative.

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