SANYO DENKI

SANUPS A23D

Online UPS

Ver. 1
English

ECO PRODUCTS

SANUPS A23D

Lineup

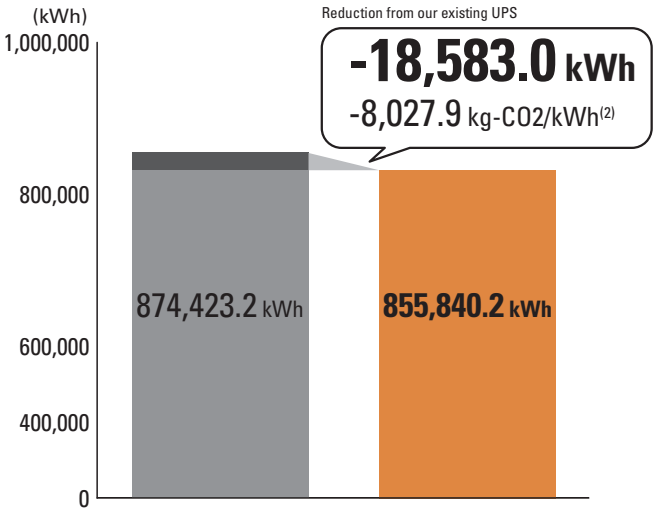
[No. of phases/wires] Input/Output voltage	Output capacity [kVA]	Output capacity [kW]	Battery backup time* Battery panel	Model
[3-Phase 3-wire] 200 V model 200/210/220 V	30	27	5/10/30/60/120/180 min	A23D303
	50	45		A23D503
	75	67.5		A23D753
	100	90		A23D104

* At a 25°C ambient temperature and a load power factor of 0.8, using new, fully charged batteries.

High Efficiency

- This UPS achieves a conversion efficiency of over 94% (up to 95.6%), achieving a 2% increase from our existing product.(1) This keeps power consumption and heat generation at a low level, reducing power costs and CO_2 emissions.

● Comparison of power consumption (For 100 kVA model)(1)



(1) When operated at 100% load for one year.
(2) Calculated using a CO_2 emission factor of 0.432 (kg-CO2/kWh).

Reduced Battery Drain and Degradation

- With its wide input voltage range,(2) this UPS reduces the number of unnecessary transfers to battery power when power conditions are poor, reducing battery drain and degradation.
  This keeps the battery ready for critical outages, while requiring battery replacement less often.

Reduced Maintenance Costs

- Cooling fans and electrolytic capacitors do not need to be replaced for 15 years, while fuses and relays also last for 10 years.

Improved Operability

- A color LCD touch panel is used for improved visibility and operability.

Combination with a Generator

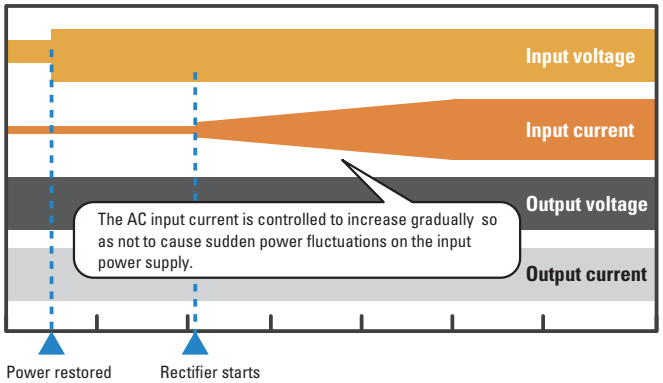
- This UPS has a walk-in feature(3) that gradually receives power from an emergency generator. This helps minimize the generator capacity, building an efficient emergency power system.

Easy Network Connection

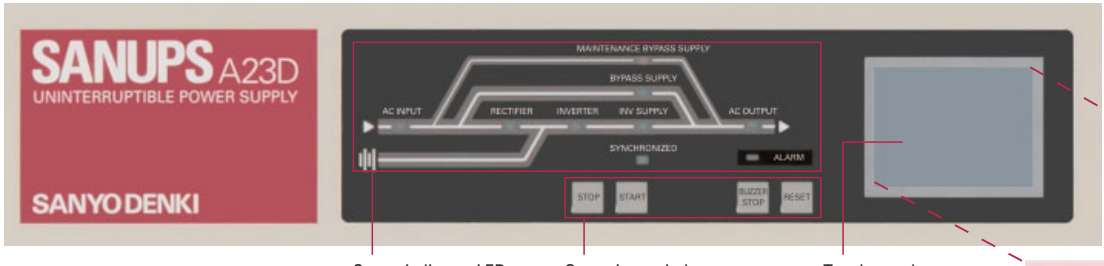
- The optional LAN interface card enables easy network connection for remote monitoring and e-mail notification of the UPS. The UPS can be monitored from SCADA or PLC using Modbus communication.

(1) Comparison was made between a new 75 kVA model and our existing SANUPS A23C753 at the rated output.
(2) At loads less than 60%, the lower limit value covers -30% from the rated voltage.
(3) Walk-in feature: A function to increase the UPS input current gradually, aimed to limit inrush current. See below: Operating waveform example when AC input power is restored

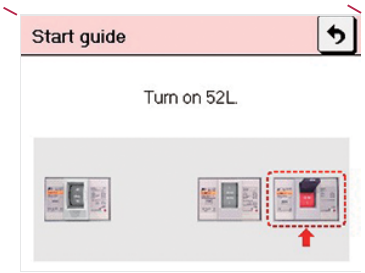
● Operating waveform example when AC input power is restored 2 s/div



Control Panel

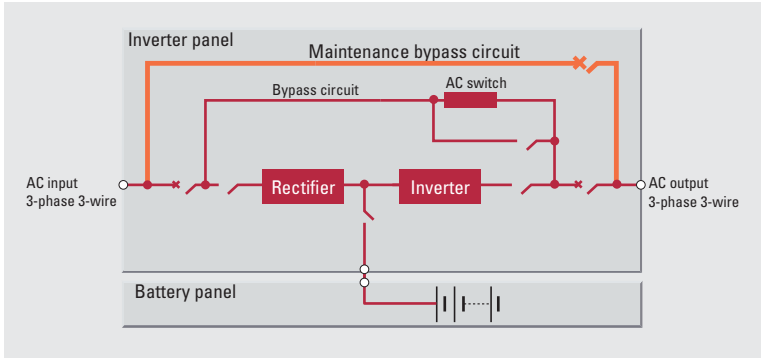


Status indicator LED　Operation switch　Touch panel



Screen example

Circuit Block Diagram



How to Read I/O Panel Model Numbers

An I/O panel is used to obtain single-phase output power or to make a UPS completely de-energized while maintaining power supply to load equipment.

TRA23D　303　B　3　2　□

The □'s denote revision characters.

Device model

Device	Code
A23D I/O panel	**TRA23D**

Device capacity

Capacity	Code
30 kVA	**303**
50 kVA	**503**
75 kVA	**753**
100 kVA	**104**

Cable entry

Cable entry	Code
Bottom	**B**
Top	**T**

Top cable entry is for AC input/output wiring, and bottom cable entry is for inter-panel wiring (between I/O panel, inverter panel, and battery panel).

Single-phase output

Specify this number if using I/O panel with Scott-T transformer circuit.

Single-phase output	Code
Single-phase 3-wire 100/200 V	**3**
Single-phase 2-wire 100 V	**2**

Number of branches for single-phase output

Specify this number if using I/O panel with Scott-T transformer circuit.

Number of branches	Code
2-branch	**2**
4-branch	**4**
6-branch	**6**
8-branch	**8**

Specifications

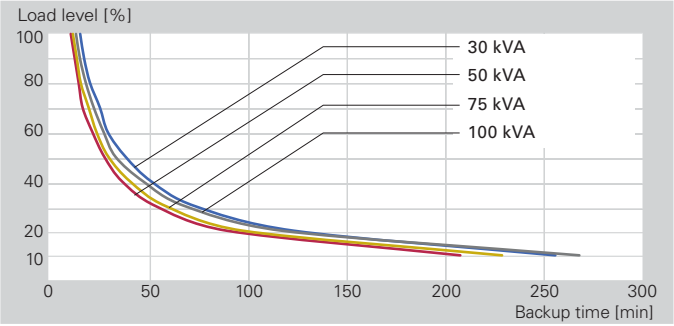
Model			A23D303	A23D503	A23D753	A23D104	Remarks
Rated output capacity (apparent power / active power)			30 kVA / 27 kW	50 kVA / 45 kW	75 kVA / 67.5 kW	100 kVA / 90 kW	
Technology	Topology		Double conversion online				
	Cooling method		Forced air cooling				
	Rectifier		High power factor converter				
	Inverter		High-frequency PWM, instantaneous waveform control				
AC input	No. of phases/wires		3-phase 3-wire				
	Rated voltage		200/210/220 V				Same as AC output
	Voltage range		200 V ±15%, 210 V ±10%, 220 V -10% to +5%				At loads less than 60%, the lower limit value covers -30% from the rated voltage
	Rated frequency		50/60 Hz				To be selected at the time of order
	Frequency range		Within ±5% of rated frequency				Operation guaranteed within this range
	Current harmonic distortion		5% or less				At rated output
	Input power factor		0.98 or higher				At rated output
AC output	No. of phases/wires		3-phase 3-wire				
	Rated voltage		200/210/220 V				To be selected at the time of order
	Voltage regulation		Within ±1% of rated voltage				In grid operation
	Rated frequency		50/60 Hz				Same as AC input
	Frequency regulation		Within ±0.1 % of rated frequency				At free run (asynchronous)
	Grid synchronized range		200/210 V: Within ±10% of rated input voltage 220 V: Within -10% to +5% of rated input voltage and within ±1% of rated input frequency				
	Voltage harmonic distortion	At linear load	Within 2%				At rated input operation
		At rectifier load	Within 5%				At rated input operation and at 100% rectifier load
	Voltage unbalance		Within 2%				At 100% unbalanced load
	Load power factor	Rated	0.9 (lagging)				
		Variation range	0.7 to 1.0 (lagging)				
	Transient voltage fluctuation[1]	Abrupt input voltage change	Within ±2%				For loss/return of input power
		Abrupt load change	Within ±3%				For 0⇔100% load step changes
		Output transfer	Within ±3%				During bypass to inverter transfer at rated output
	Overload capability	Inverter	125% (for 10 min), 155% (for 1 min)				At rated input and rated load power factor
		Bypass	200% (for 30 s), 800% (for 2 cycles)				At rated input and rated load power factor
Overcurrent protection			Uninterrupted transfer to bypass at approx. 155% or more				Automatic retransfer after restored to normal condition
Acoustic noise			65 dB or less				1 m from front of UPS, A-weighting (With a linear load)
Heat dissipation			2.1 kW	2.9 kW	4.4 kW	5.8 kW	At rated output, after battery charging completed[2]
Cooling airflow			11 m^3/min	15 m^3/min	23 m^3/min	30 m^3/min	At rated output, after battery charging completed[2]
Battery type			Small-sized valve-regulated lead-acid (VRLA) battery				
Ventilation rate required in battery panel[3]			1.5 m^3/min	2.4 m^3/min	3.6 m^3/min	4.8 m^3/min	
Operating environment			Temperature: 0 to +40˚C, relative humidity: 30 to 90% (non-condensing)				

(1) Complies with the transient voltage fluctuation characteristics (classification 1) in JEC-2433:2016.

(2) Calculated using conditions of the rated load power factor, a 40°C room temperature, and a 30°C outside temperature.

(3) Calculated using the maximum charge current of the UPS.

Load Level vs Backup Time



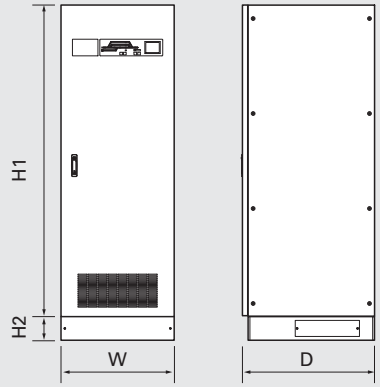
Note: At a 25°C ambient temperature, load power factor of 0.8, using new, fully charged batteries.

Dimensions (Unit: mm)

Inverter panel

Model	Capacity	W	D	H1	H2	Mass
A23D303	30 kVA	600	700	1650	125	335 kg
A23D503	50 kVA	600	700	1650	125	350 kg
A23D753	75 kVA	800	700	1825	125	560 kg
A23D104	100 kVA	800	700	1825	125	570 kg

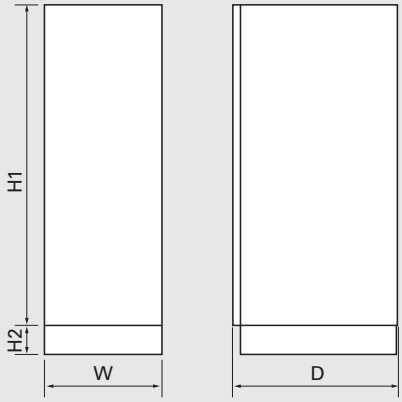
A dustproof filter (option) can be installed to the air duct of the device.
Consult us for details at the time of order.



Battery panel

Capacity	Backup time*	Battery			W	D	H1	H2	Mass	Number of faces
		Number of cells	Capacity	Total capacity						
30 kVA	5 min	192	28 Ah	10752 Wh	500	700	1825	125	510 kg	1
	10 min		44 Ah	16896 Wh					730 kg	1
	30 min		44 Ah × 2	33792 Wh	850				1360 kg	1
50 kVA	5 min	192	44 Ah	16896 Wh	500	700	1825	125	730 kg	1
	10 min		28 Ah × 2	21504 Wh	700				930 kg	1
	30 min		44 Ah × 3	50688 Wh	1350				2090 kg	2
75 kVA	5 min	192	28 Ah × 2	21504 Wh	700	700	1825	125	930 kg	1
	10 min		44 Ah × 2	33792 Wh	850				1360 kg	1
	30 min		44 Ah × 5	84480 Wh	2200				3450 kg	3
100 kVA	5 min	192	44 Ah × 2	33792 Wh	850	700	1825	125	1360 kg	1
	10 min		44 Ah × 3	50688 Wh	1350				2090 kg	2
	30 min		300 Ah	115200 Wh	3200	800			5600 kg	3

* At a 25˚C ambient temperature, load power factor of 0.8, using new, fully charged batteries. Contact us for 60, 120, and 180-minute backup models and ratings at a load power factor of 0.9.



Paint color: Ivory (Munsell 6.6Y 8.3/0.8)

Network Options

Item	Model no.	Remarks
LAN interface card	**PRLANIF031**	This card enables 24/7 monitoring of UPS operations and status and sends email notifications to system administrators for quick actions via network in the event of a power failure. The LAN interface card will be shipped installed in the UPS. Combined with a temperature and humidity sensor (Model no.: 9CT1-T, extension cable: CARD-CBL007), this card can also monitor the ambient temperature and humidity.

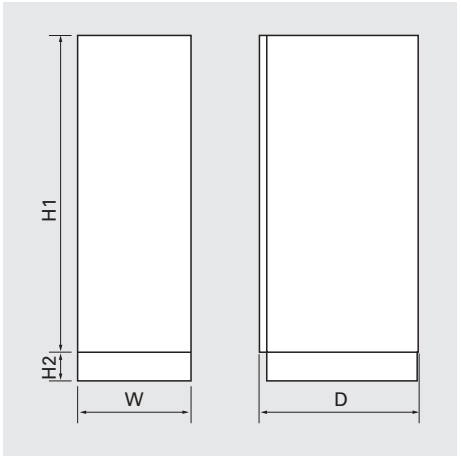
I/O Panel

External maintenance bypass circuit

UPS capacity	Model no.		Dimensions (Unit: mm)				Mass
	Top cable entry	Bottom cable entry	W	D	H1	H2	
30 kVA	**TRA23D303T**□	**TRA23D303B**□	500	700	1650	125	180 kg
50 kVA	**TRA23D503T**□	**TRA23D503B**□					
75 kVA	**TRA23D753T**□	**TRA23D753B**□	700		1825		220 kg
100 kVA	**TRA23D104T**□	**TRA23D104B**□					

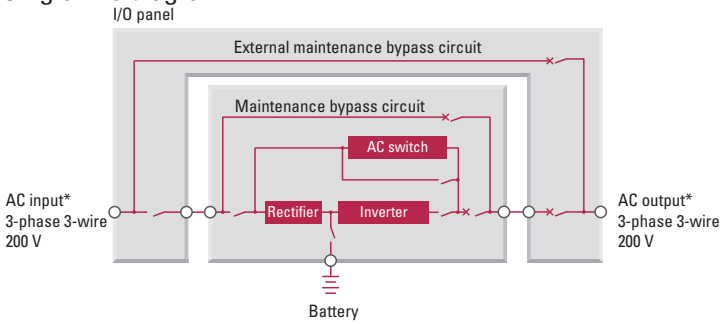
Top or bottom cable entry can be chosen. Both types have the same dimensions.

The □'s denote revision characters.



Paint color: Ivory (Munsell 6.6Y 8.3/0.8)

Single-line diagram



* 3-phase 3-wire 210/220 V AC input/output is also supported.

I/O panel with Scott-T transformer circuit

UPS capacity	Model no.		Scott-T transformer capacity	Dimensions (Unit: mm)				Mass
	Top cable entry	Bottom cable entry		W	D	H1	H2	
30 kVA	**TRA23D303T**□□□	**TRA23D303B**□□□	30 kVA	600	700	1650	125	540 kg
50 kVA	**TRA23D503T**□□□	**TRA23D503B**□□□	50 kVA	700				740 kg
75 kVA	**TRA23D753T**□□□	**TRA23D753B**□□□	75 kVA	900	800	1825		870 kg
100 kVA	**TRA23D104T**□□□	**TRA23D104B**□□□	100 kVA					1000 kg

Model no.		AC output				
Top cable entry	Bottom cable entry	3-phase 3-wire breaker capacity	Single-phase 2-wire or single-phase 3-wire breaker capacity			
			Single-phase	2-branch	4-branch	6-branch	8-branch
TRA23D303T□□□	**TRA23D303B**□□□	100 AF / 100 AT	2-wire	250 AF / 150 AT	100 AF / 75 AT	50 AF / 50 AT	50 AF / 40 AT
			3-wire	100 AF / 75 AT	50 AF / 40 AT	50 AF / 30 AT	50 AF / 20 AT
TRA23D503T□□□	**TRA23D503B**□□□	250 AF / 175 AT	2-wire	400 AF / 250 AT	250 AF / 125 AT	100 AF / 100 AT	100 AF / 63 AT
			3-wire	250 AF / 125 AT	100 AF / 63 AT	50 AF / 50 AT	50 AF / 32 AT
TRA23D753T□□□	**TRA23D753B**□□□	400 AF / 250 AT	2-wire	400 AF / 400 AT	250 AF / 200 AT	250 AF / 125 AT	100 AF / 100 AT
			3-wire	250 AF / 200 AT	100 AF / 100 AT	100 AF / 63 AT	50 AF / 50 AT
TRA23D104T□□□	**TRA23D104B**□□□	400 AF / 350 AT	2-wire	630 AF / 500 AT	400 AF / 250 AT	250 AF / 175 AT	250 AF / 125 AT
			3-wire	400 AF / 250 AT	250 AF / 125 AT	100 AF / 100 AT	100 AF / 63 AT

Top or bottom cable entry can be chosen. Both types have the same dimensions.

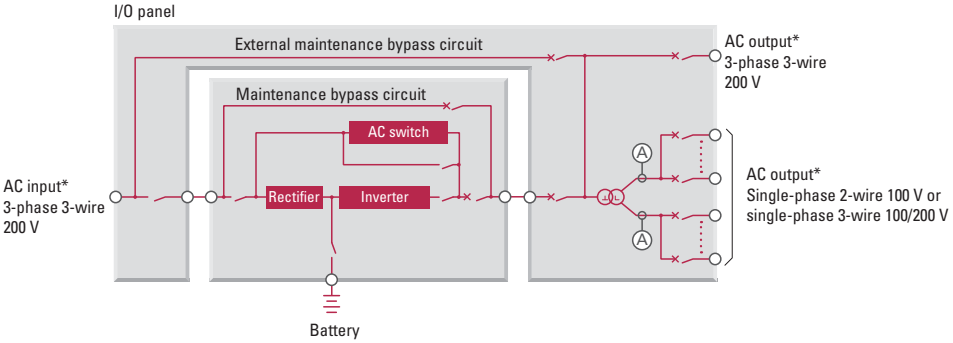
The mass values above are for when the single-phase 2-wire or single-phase 3-wire AC output has 8 branches.

Scott-T transformer output can be selected from single-phase 2-wire or single-phase 3-wire. Make sure that the secondary winding's loads are balanced. Note that the excitation inrush current can be as high as 8 times the rated current.

If you require a breaker capacity other than those listed above, customization will be required. Contact us for details.

The □'s denote single-phase output, the number of branches, and revision characters. Specify model numbers referencing How to Read I/O Panel Model Numbers.

Single-line diagram



* 3-phase 3-wire 210/220 V AC input/output is also supported.

Specify the number of branches (2, 4, 6, or 8) for single-phase AC output. Single-phase 2-wire 105 V and single-phase 3-wire 105/210 V outputs are also supported.

MEMO

ECO PRODUCTS

■ ECO PRODUCTS

ECO PRODUCTS are designed to reduce the environmental impacts throughout the product's life cycle. Ranging from design to manufacturing stages, the environmental impact of a product and its packaging materials is assessed against the eco-design requirements.
Those products that satisfy the requirements are accredited as ECO PRODUCTS.

● Fire Service Law and Fire Prevention Ordinance in Japan
The Fire Prevention Ordinance regulates the total battery capacity of storage batteries, including lithium-ion batteries, that can be installed indoors. When installing UPSs indoors, confirm that the total battery capacity in one location does not exceed 20 kWh. In other cases, consult with your local fire department for approval.
Note that the UPSs cannot be used as an emergency power supply for firefighting equipment.

● Building Standard Law in Japan
The UPSs cannot be used as backup power for building facilities conforming to the disaster management requirements defined in the Building Standard Law.

Notes before Purchase

- Before installing, assembling, and using the products, please read Instruction Manual carefully and use them properly.
- When using the products in the following applications, consult with us in advance because special considerations are required for operation, maintenance, and management.
  (a) Medical equipment that may have direct effects on human life or human body.
  (b) Trains, elevators, and other machinery that can cause injury.
  (c) Socially and publicly important computer systems.
  (d) Other equipment that is related to safety of human life and that can have major impact on maintenance of public functions.
- For use in an environment where vibration is present, such as in a car or a ship, please consult with us in advance.
- Never attempt to disassemble or alter the products in any way.
- For installation and maintenance work of the products, please consult with us or properly licensed personnel.
- Please contact us concerning the disposal of used storage batteries supplied by SANYO DENKI.
- The products listed in this catalog fall into the category 16 of Appended Table 1 of the Export Trade Control Order. To export the products as an individual part or to export a device into which the products are assembled, the "Inform Requirements" and "Objective Requirements" that the Ministry of Economy, Trade and Industry of Japan established based on the "Catch-all Controls" must be studied for applicability. Accordingly, appropriate export formalities must be performed.
- SANYO DENKI will not be liable for any direct or indirect damages or loss, including but not limited to equipment downtime, missed power sales revenue, business interruptions, increased power purchases, resulting from the use of or inability to use our products or services.
- The products listed in this catalog are equipped with lithium-ion batteries. When transporting the products, do not transport by air. When transporting by sea, transport must be carried out according to the International Maritime Dangerous Goods (IMDG) Code. Also, depending on the country and region, there are cases where regulations are established independently, so please consult with the shipping company in advance.

For any inquiry or consultation, please contact a SANYO DENKI sales representative.

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