SANUPS

INVERTER

D11A

SANYO DENKI

High Efficient Conversion of DC Input 48 V to Pure Sine Wave AC Output 100 V

SANUPS D11A
INVERTER

ECO PRODUCTS

UL:E203489

Input	Output	Stand-alone operation	Parallel operation	Parallel redundant operation
DC48V	AC100V	1kVA 1kW	2kVA ～ 6kVA 2kW ～ 6kW	1kVA ～ 5kVA 1kW ～ 5kW

Stand-alone operation : Type S

Parallel/parallel redundant operation : Type R

Features

1. High Efficiency

86.6% (maximum) high efficiency.
It helps to conserve energy and reduce power charges.

2. Increasing the Reliability of Power Supply

The output is a pure sine wave.
D11A can perform parallel redundant operation.
A redundant configuration of N+1 units with a backup unit increases the reliability of inverter power supply.
Totally independent control with high reliability has been realised.

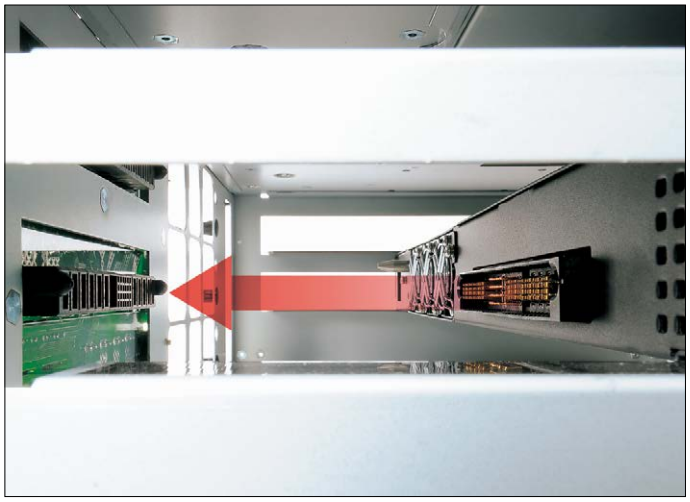
3. Bypass Function for security.

Even if a power failure occurs, switching to the AC input bypass circuit keeps power supply stable.

4. Simple to Add Units

Up to 6 units (6 kVA) can be added.
In redundant operation, a unit can be replaced without the need to shut down its power supply.
A unit can be installed easily in the parallel operation cabinet from the front.

The unit can be installed and removed from the front.

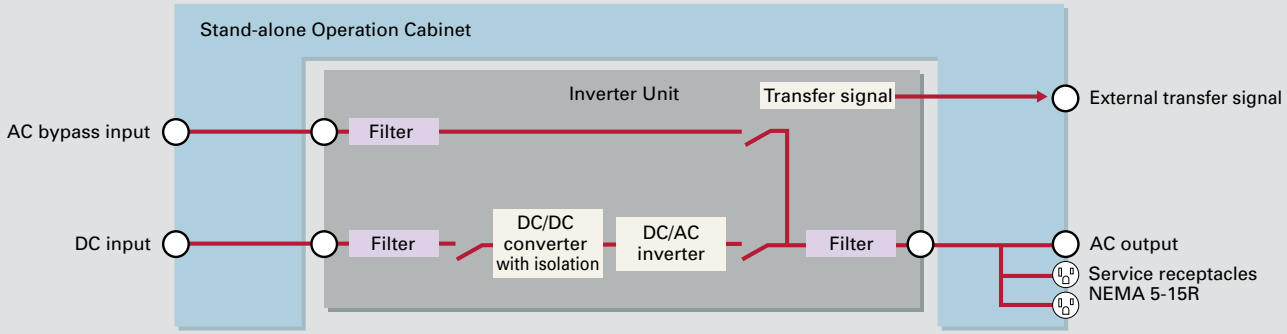

Ease of connection.

● Example of Output Capacity when Adding Units

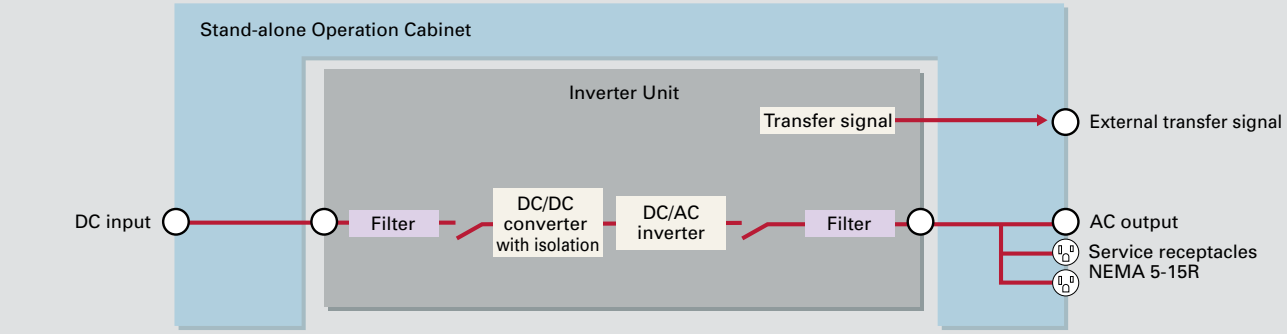
Parallel operation（N units）				
2kVA	3kVA	4kVA	5kVA	6kVA
Parallel redundant operation（N+1units）				
1kVA	2kVA	3kVA	4kVA	5kVA

System Block Diagrams

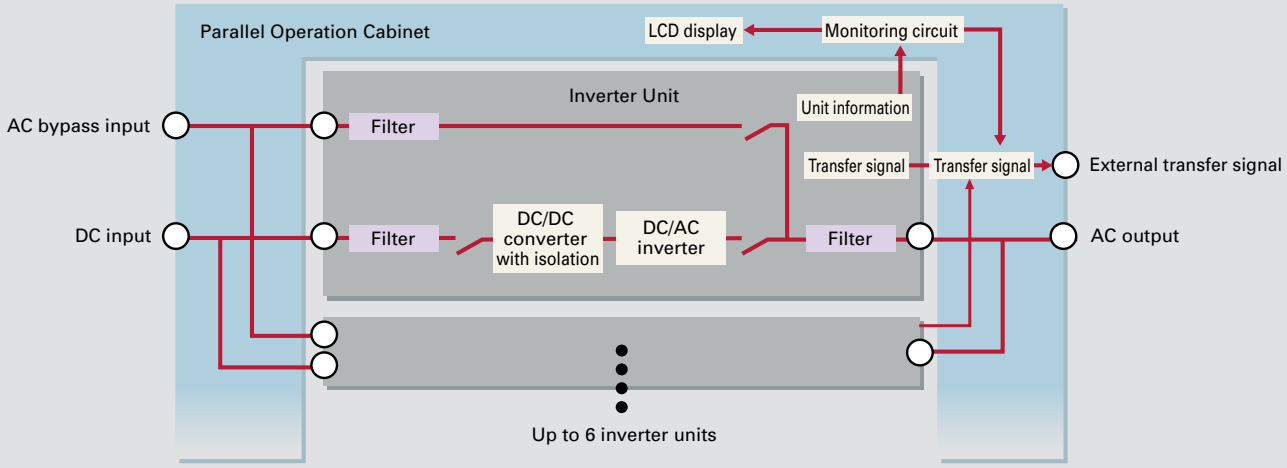
■Stand-Alone Operation Configuration (with Bypass Circuit)



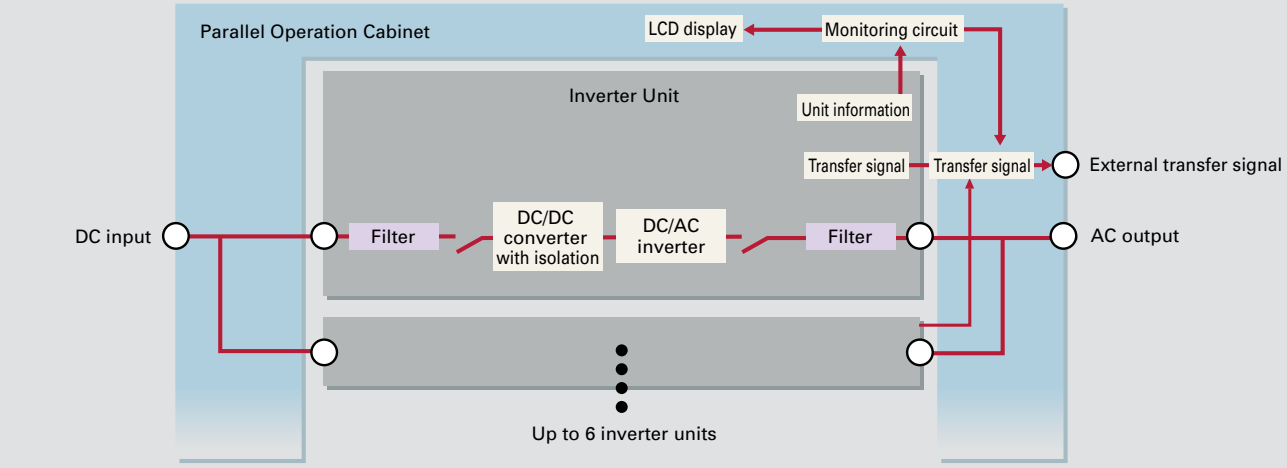
■Stand-Alone Operation Configuration (with No Bypass Circuit)



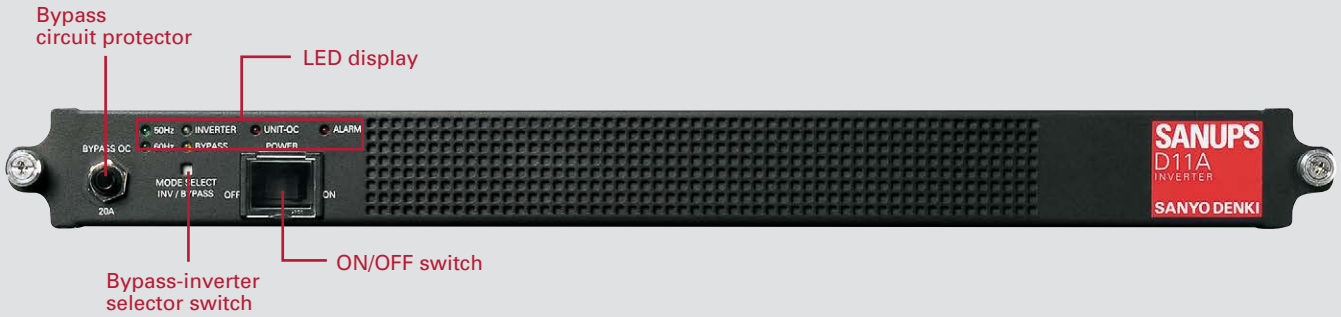
■Parallel Operation Configuration (with Bypass Circuit)



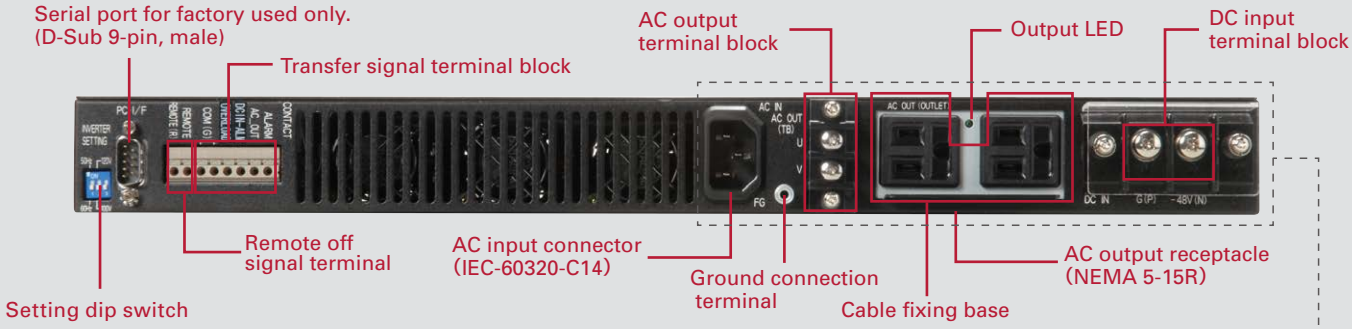
■Parallel Operation Configuration (with No Bypass Circuit)



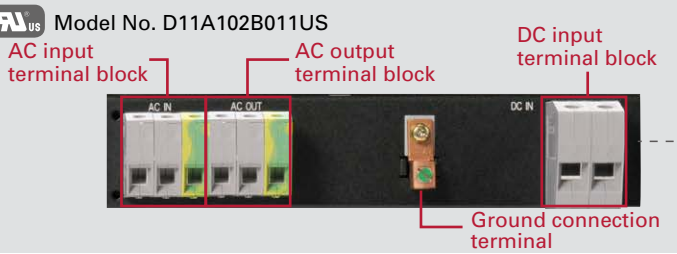
Inverter Unit Front Model No. D11A102B011



The rear view of stand alone operation. Model No. D11A102B011S

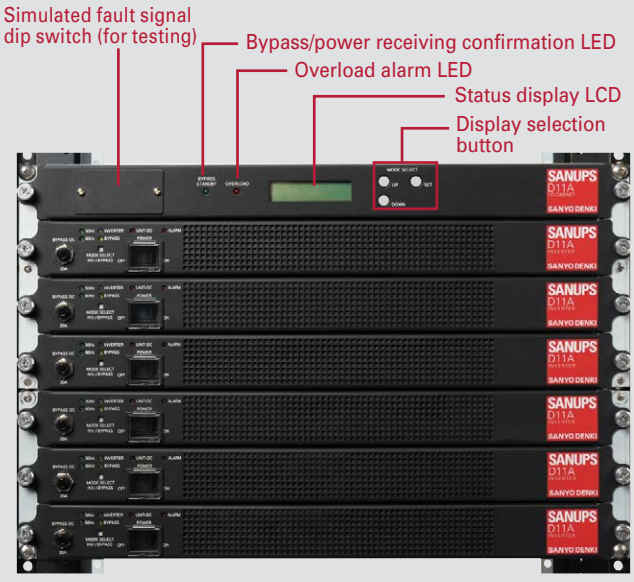


Model No. D11A102B011US

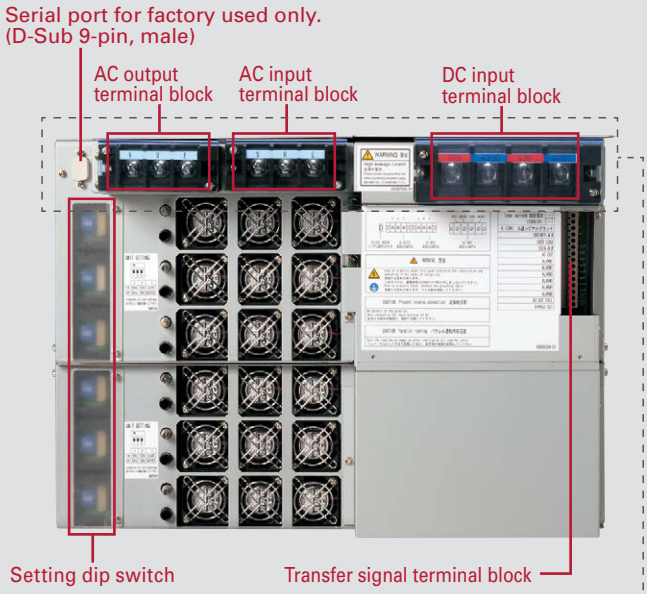


■Parallel Operation Cabinet

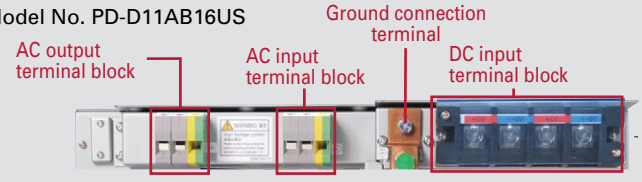
Front



Rear Model No. PD-D11AB16



Model No. PD-D11AB16US



The photos show a unit with bypass circuit. An AC input connector and AC input terminal block are not present for inverters with no bypass circuit.

※ The inverter units are products for parallel operation.

Specification

Inverter Unit

Item		Standard or Performance				Notes
Model No.		**D11A102B011**	**D11A102B011US**	**D11A102B001**	**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℃ to 40℃				A short time : 0℃ to 50℃ (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 Currency	30A				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.				During rated output
	Transit Voltage Variation	Rated voltage ±10%				0⇔100% load variation
	Response time	100m s Max.				
	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%Min.				
AC Input for Bypass circuit	Rated Voltage	100V/120V		-		Sine waveDependent on the DIP switch setting
	Variation Range	100V±15%		-		
		120V±15%		-		
	Max. Input Currency	12.5A		-		During rated output
		10.4A		-		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

■Model numbers of inverter units with stand-alone operation cabinet

D11A102B011S (For stand-alone unit with bypass circuit), D11A102B011SUS (For stand-alone unit with bypass circuit/UL certified unit)
D11A102B001S (For stand-alone unit with no bypass circuit), D11A102B001SUS (For stand-alone unit with no bypass circuit/UL certified unit)
Two service receptacles (NEMA5-15R)* equip as a standard (on the rear of the unit), and AC cable (with NEMA5-15P plug) equip as a standard (for stand-alone unit with bypass circuit only)
Other specifications are the same as those of the above inverter unit, except that the input circuit protector for bypass input is 15 A.

※ UL certified units are not equipped with service receptacles.

Electrical Characteristics of the Cabinet

With Bypass Circuit

Cabinet model No.		PD-D11AB13 PD-D11AB13US				PD-D11AB15 PD-D11AB15US				PD-D11AB16 PD-D11AB16US	
Number of inverter units		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 to138V									
	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

With No Bypass Circuit

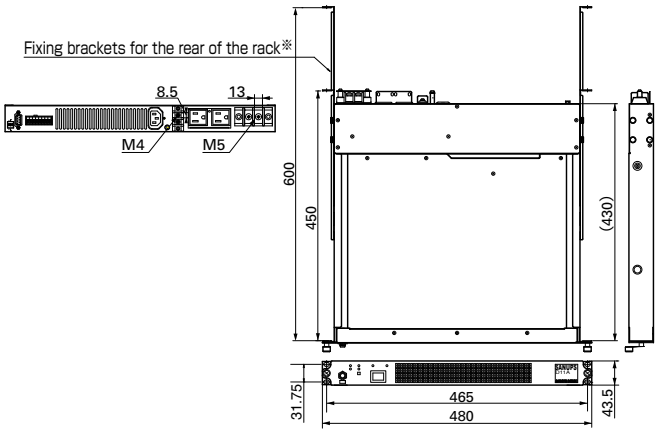
Cabinet model No.		PD-D11AB03 PD-D11AB03US				PD-D11AB05 PD-D11AB05US				PD-D11AB06 PD-D11AB06US	
Number of inverter units		2		3		4		5		6	
Device configuration		N-unit configuration	N+1-unit configuration	N-unit configuration	N+1-unit configuration	N-unit configuration	N+1-unit configuration	N-unit configuration	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/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

Note · The cabinet can be used without connecting to a commercial power source or AC power supply. In such a case, the unit operates at a frequency preset in the inverter.
· When connecting the cabinet to an AC power supply, a 3.5mA per unit of leakage current will occur. In parallel operation, total leakage current must be multiplied by the number of connected units, so please pay attention to the breaking current for the breaker in the distribution board.

Dimensions

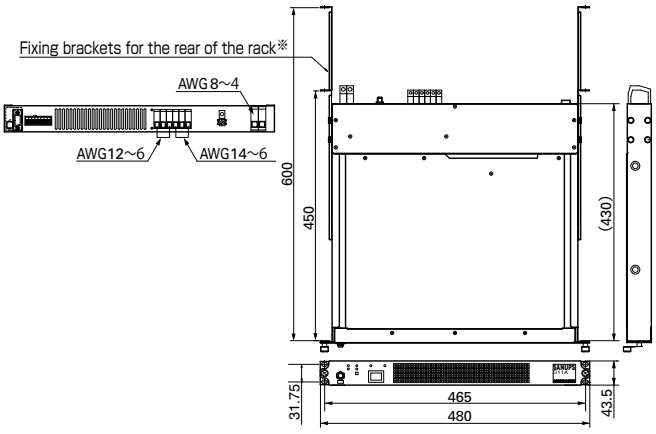
■ Inverter with Stand-Alone Operation Cabinet (size : mm)

Model No. D11A102B011S



■ Inverter with Stand-Alone Operation Cabinet (size : mm)

Model No. D11A102B011SUS

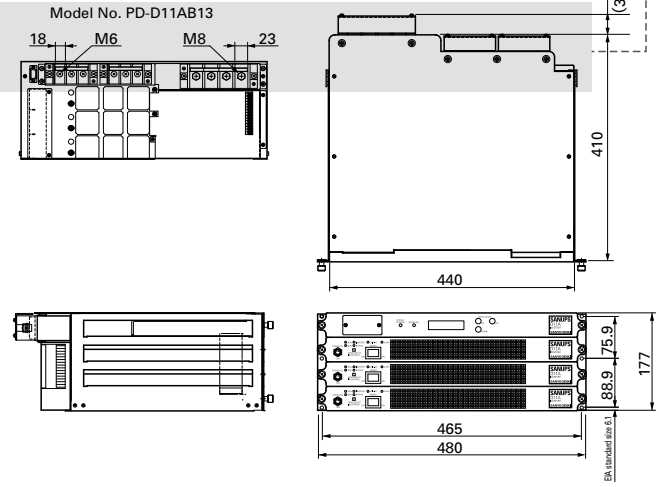


※ When these brackets are used to fix the inverter unit in the rack, special rack support rails are not required.

■ Parallel Operation Cabinet (for 3 Inverter Units) (size : mm)

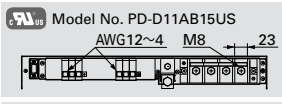
Model No. PD-D11AB13US

Model No. PD-D11AB13

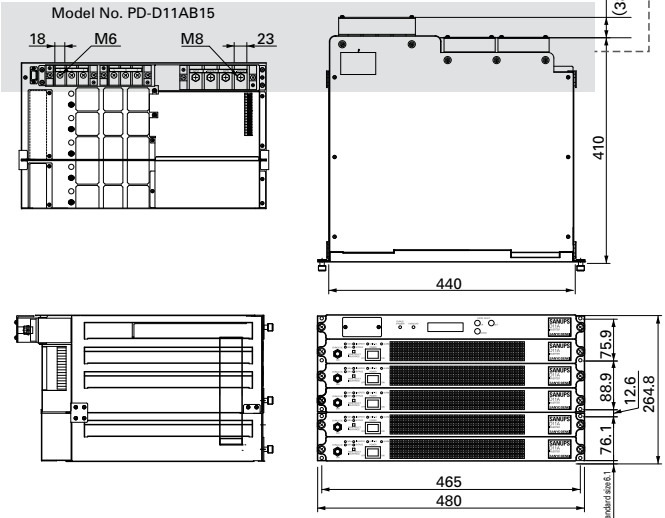


■ Parallel Operation Cabinet (for 5 Inverter Units) (size : mm)

Model No. PD-D11AB15US

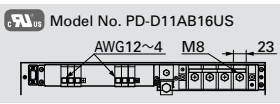


Model No. PD-D11AB15

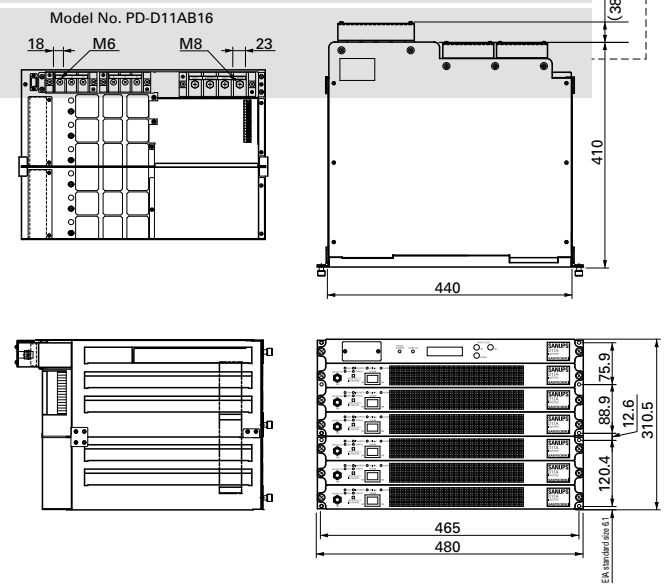


■ Parallel Operation Cabinet (for 6 Inverter Units) (size : mm)

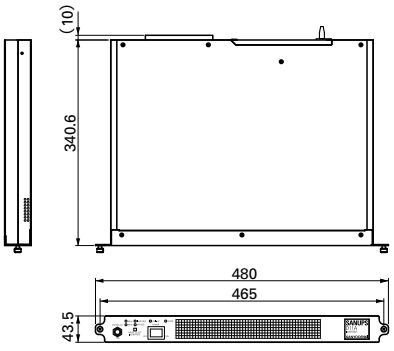
Model No. PD-D11AB16US



Model No. PD-D11AB16

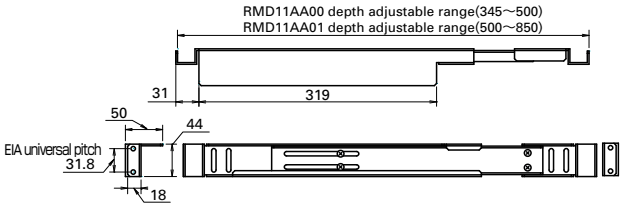


■ Inverter Unit (size : mm)



■ Support Rails for Parallel Operation Cabinet (Option) (size : mm)

To use these support rails, 1U space is required under the unit to be mounted.



The dimensions show a unit with bypass circuit. An AC input connector and AC input terminal block are not present for inverters with no bypass circuit.

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 andmaintenance work, please consult with our company or with specialized company.

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

http://www.sanyodenki.com

SANYO DENKI CO., LTD.
3-33-1 Minami-Otsuka, Toshima-ku, Tokyo 170-8451, Japan
TEL: +81 3 5927 1020

SANYO DENKI *EUROPE SA.*
P.A. Paris Nord Ⅱ, 48 Allée des Erables-VILLEPINTE, BP.57286, F-95958 ROISSY CDG Cedex, France
TEL: +33 1 48 63 26 61

SANYO DENKI *AMERICA,INC.*
468 Amapola Avenue Torrance, CA 90501, U.S.A.
TEL: +1 310 783 5400

SANYO DENKI *SHANGHAI CO., LTD.*
Room 2106-2109, Bldg A, Far East International Plaza, No.319, Xianxia Road, Shanghai, 200051, China
TEL: +86 21 6235 1107

Beijing Branch
Room1222, Tower B, Beijing COFCO Plaza, No.8 Jianguomennei Dajie, Dong Cheng District, Beijing 100005 China
TEL: +86 10 6522 2160

SANYO DENKI *(H.K.)CO., LIMITED*
Room 2305, 23/F, South Tower, Concordia Plaza, 1 Science Museum Road, TST East, Kowloon, Hong Kong
TEL: +852 2312 6250

Tianjin Representative Office
Room AB 16th Floor TEDA Building, No. 256 Jie Fang Nan Road, Hexi District, Tianjin 300042 China
TEL: +86 22 2320 1186

Chengdu Representative Office
Room2105B, Block A, Times Plaza, 2 Zongfu Road, Jinjiang District, Chengdu, 610016 China
TEL: +86 28 8661 6901

SANYO DENKI *TAIWAN CO., LTD.*
N-711, 7F, Chia Hsin 2nd Bldg., No.96, Sec.2, Zhongshan N. Rd., Taipei 10449, Taiwan (R.O.C.)
TEL: +886 2 2511 3938

SANYO DENKI *SINGAPORE PTE. LTD.*
988 Toa Payoh North, #04-05/06/07/08, Singapore 319002
TEL: +65 6223 1071

Indonesia Representative Office
Summitmas II 4th Floor, Jl. Jend. Sudirman Kav.61-62, Jakarta 12190, Indonesia
TEL: + 62 21 252 3202

SANYO DENKI *GERMANY GmbH*
Frankfurter Strasse 92, 65760 Eschborn, Germany
TEL: +49 6196 76113 0

SANYO DENKI *KOREA CO., LTD.*
9F, Sunhwa B/D 89, Seosomun-ro, Jung-gu, seoul, 100-731, Korea
TEL: +82 2 773 5623

Busan Branch
8F, CJ Korea Express Bldg., 119, Daegyo-ro, Jung-gu, Busan, 600-016, Korea
TEL: +82 51 796 5151

SANYO DENKI *(Shenzhen)CO., LTD.*
2F 02-11, Shenzhen International Chamber of Commerce Tower, No.168 Fuhua 3 Road, Futian District, Shenzhen, 518048 China
TEL: +86 755 3337 3868

SANYO DENKI *(THAILAND)CO., LTD.*
388 Exchange Tower, 25th Floor, Unit 2501-1, Sukhumvit Road, Klongtoey, Klongtoey, Bangkok 10110 Thailand
TEL: +66 2261 8670

SANYO DENKI *INDIA PRIVATE LIMITED*
#14 (Old No.6/3), Avenue Road, Nungambakkam, Chennai - 600034, Tamil Nadu, India
TEL: +91 44 420 384 72

The names of companies and/or their products specified in this catalog are the trade names, and/or trademarks and/or registered trademarks of such respective companies.
Specifications are subject to change without notice.

CATALOG No.P0953B005 '15.8