

Semi-custom power supply

PCU Series

400W

600W

900W



Acquired UL, CSA,
and TÜV safety standards

Flexible multi-output power supply enables various combinations of DC cell modules
Prototype power supply units that meet the customer's specifications can be delivered 10 days after the customer's order is received.
Keep costs low by eliminating the need for design, evaluation, and safety standards certification.
Microprocessor-equipped cell control module provides versatile power management.
Certified under medical standards (PCU400M/600M)

- **World-wide input range** <85 to 264 V AC continuous input>
- **Three types based on total output power: 400 W, 600 W, and 900 W**
- **Extensive lineup of DC cell modules* can be freely combined in multi-power supply configurations**
 - * 120-W single output DC cell, output voltages: nine types (2, 3.3, 5, 6, 12, 15, 24, 36, and 48 V)
 - ① 40-W and ② 96-W double output DC cell, output voltages: two types (① 5/5 V, ② 12/12 V)
 - 40-W four output DC cell, output voltages: two types (+5/-5/+12/-12, +5/-5/+15/-15 V)
 - Configuration example: PCU900 (nine-cell configuration) ... 15 channels = single output x 7 + multi-output x 2)
- **All module types are kept in stock to enable prototype power supply delivery within 10 days.**
- **Harmonic current control** <complies with EN61000-3-2 standard>
- **Complies with safety standards**
<certified under EN60950, UL1950, CSA950 (C-UL). CE marking compatible>
- **Complies with noise standards**
<complies with EMS: IE61000-4, EMI: FCC Class B, EN55022 Class B, and VCCI Class B>
- **Alarm signal output and AC power fail signal output are standard feature**
- **Versatile power management using optional functions**
 - Versatile power management is realized by microprocessor-based control in cell control module
Software processing controls management of operations when an alarm occurs, allocation of operations among cells, sequence operations, external remote operations, etc.
 - Supports low power consumption
<Option E: When using economy mode, all internal circuits are stopped. Equipped with internal +5 V STB power supply>
Power consumption during economy mode: approximately 3.9 W (during 100 V AC input)
 - Complies with medical standards
Certified under EN60601-1 (PCU400M/600M)

Applications

Semiconductor manufacturing and inspection equipment
Factory automation controllers and robots
Line printers, disks, ATMs, and computer peripherals
Medical equipment such as CT machines, MRI machines, and ultrasonic diagnostic equipment
Photographic laboratory system, ETCs, and other industrial equipment

Options

Alarm sequence (signal transmission and shutdown)
AC power failure (extension of output hold time)
Cell output sequence (startup sequence, etc.)
External remote ON/OFF (up to three separate ON/OFF controls)
Cell group control (up to three separate ON/OFF controls)
Economy mode (standby mode for low power consumption)
Support for medical equipment (low leakage current)



Free warranty period: 3 years

PCU Series

400W, 600W, 900W

Specifications and Standards

Item	Model	PCU400
	Total Output Power	400W
	No. of DC Cell Modules	5 cells
Input Conditions	Rated Input Voltage	AC100 to 240V
	Allowable Input Voltage Range	AC85 to 264V
	Input Current ^{Note 1}	6.5A/3A max (AC100V/AC240V)
	Rated Frequency	50/60Hz
	Allowable Frequency Range	47 to 63Hz
	Efficiency ^{Note 1}	70% (typ)
	Inrush Current ^{Note 2}	15A/35A max (AC100V/AC240V)
	Power Factor ^{Note 1}	0.9 (min)
Others	Leakage Current ^{Note 1}	0.75 mA (max) Option M: 0.5 mA (max)
	Output Holding Time ^{Note 1}	20ms (min)
Environmental Conditions	Operating Temperature Range ^{Note 3}	-10 to +60°C
	Storage Temperature Range	-20 to +85°C
	Operating Humidity Range	30 to 90% (no condensation)
	Storage Humidity Range	30 to 90% (no condensation)
	Cooling Requirements	Forced air cooling by internal fan
	Vibration Resistance	10 to 55 Hz, sweep time: 3 minutes, acceleration rate: 29.4 m/s ² (3G), one hour each in the X, Y, Z directions
	Shock Resistance	98m/s ² (10G)
	Installation Conditions	Horizontal or vertical mounting direction
Insulation	Insulation Withstand Voltage ^{Note 4}	Between input and output: 3000 V AC for 1 minute, between input and FG: 1500 V AC for 1 minute (leakage current: 30 mA or less each)
	Insulation Resistance ^{Note 4}	Input - output, input - FG and output - FG: 100 MΩ or above (measured with 500 V DC Megger)
External Structure / Standards	External Dimensions ^{Note 5}	124 ^W x 280 ^D x 64 ^H mm
	Weight ^{Note 6}	2300g
Standards	Safety Standards	UL1950, CSA No. 60950, and TÜV (EN60950) certified, CE marking compatible TÜV (EN60601) certified with option M
	Conducted Emission ^{Note 7}	Designated to meet FCC Class B, EN55022 Class B, and VCCI Class B

^{Note 1} Specified under rated input/output conditions at an ambient temperature of 25°C. Input current and efficiency depend on implemented DC cell modules.

^{Note 2} More inrush current than above noted value may flow for approximately one second after restart.

^{Note 3} When the ambient temperature is in the range from 0 to 50°C, use the rated load conditions. When the ambient temperature is in either the range from -10 to 0°C or 50 to 60°C, derate the output current to 80% or less of the rated value.

^{Note 4} Insulation conditions are specified at normal temperature and humidity. For medical equipment-support model (option M), insulation withstand voltage between batch input and batch output is 4000 V AC for 1 minute.

^{Note 5} For details, refer to the external view diagrams.

^{Note 6} The weight is the estimated weight when single output type DC cell module has been fully mounted.

^{Note 7} When the medical equipment-support model (option M) is used, this product complies with the FCC Class A, EN55022 Class A, and VCCI Class A standards.

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Item	Model	PCU 600
	Total Output Power	600W
	No. of DC Cell Modules	6 cells
Input Conditions	Rated Input Voltage	AC100 to 240V
	Allowable Input Voltage Range	AC85 to 264V
	Input Current <small>Note 1</small>	10A/5A max (AC100V/AC240V)
	Rated Frequency	50/60Hz
	Allowable Frequency Range	47 to 63Hz
	Efficiency <small>Note 1</small>	70% (typ)
	Inrush Current <small>Note 2</small>	15A/35A max (AC100V/AC240V)
	Power Factor <small>Note 1</small>	0.9 (min)
Others	Leakage Current <small>Note 1</small>	0.75 mA (max) Option M: 0.5 mA (max)
	Output Holding Time <small>Note 1</small>	20ms (min)
Environmental Conditions	Operating Temperature Range <small>Note 3</small>	-10 to +60°C
	Storage Temperature Range	-20 to +85°C
	Operating Humidity Range	30 to 90% (no condensation)
	Storage Humidity Range	30 to 90% (no condensation)
	Cooling Requirements	Forced air cooling by internal fan
	Vibration Resistance	10 to 55 Hz, sweep time: 3 minutes, acceleration rate: 29.4 m/s ² (3G), one hour each in the X, Y, Z directions
	Shock Resistance	98m/s ² (10G)
	Installation Conditions	Horizontal or vertical mounting direction
Insulation	Insulation Withstand Voltage <small>Note 4</small>	Between input and output: 3000 V AC for 1 minute, between input and FG: 1500 V AC for 1 minute (leakage current: 30 mA or less each)
	Insulation Resistance <small>Note 4</small>	Input - output, input - FG and output - FG: 100 MΩ or above (measured with 500 V DC Megger)
External Structure /Standards	External Dimensions <small>Note 5</small>	148 ^W x 280 ^D x 64 ^H mm
	Weight <small>Note 6</small>	2600g
Standards	Safety Standards	UL1950, CSA No. 60950, and TÜV (EN60950) certified, CE marking compatible TÜV (EN60601) certified with option M
	Conducted Emission <small>Note 7</small>	Designated to meet FCC Class B, EN55022 Class B, and VCCI Class B

Note 1 Specified under rated input/output conditions at an ambient temperature of 25°C. Input current and efficiency depend on implemented DC cell modules.

Note 2 More inrush current than above noted value may flow for approximately one second after restart.

Note 3 When the ambient temperature is in the range from 0 to 50°C, use the rated load conditions. When the ambient temperature is in either the range from -10 to 0°C or 50 to 60°C, derate the output current to 80% or less of the rated value.

Note 4 Insulation conditions are specified at normal temperature and humidity. For medical equipment-support model (option M), insulation withstand voltage between batch input and batch output is 4000 V AC for 1 minute.

Note 5 For details, refer to the external view diagrams.

Note 6 The weight is the estimated weight when single output type DC cell module has been fully mounted.

Note 7 When the medical equipment-support model (option M) is used, this product complies with the FCC Class A, EN55022 Class A, and VCCI Class A standards.

PCU Series

400W, 600W, 900W

Specifications and Standards

Item	Model	PCU900
	Total Output Power	900W
	No. of DC Cell Modules	9 cells
Input Conditions	Rated Input Voltage	AC100 to 240V
	Allowable Input Voltage Range	AC85 to 264V
	Input Current ^{Note 1}	15A/7.5A max (AC100V/AC240V)
	Rated Frequency	50/60Hz
	Allowable Frequency Range	47 to 63Hz
	Efficiency ^{Note 1}	70% (typ)
	Inrush Current ^{Note 2}	15A/35A max (AC100V/AC240V)
	Power Factor ^{Note 1}	0.9 (min)
Others	Leakage Current ^{Note 1}	0.9mA (max)
	Output Holding Time ^{Note 1}	20ms (min)
Environmental Conditions	Operating Temperature Range ^{Note 3}	-10 to +60°C
	Storage Temperature Range	-20 to +85°C
	Operating Humidity Range	30 to 90% (no condensation)
	Storage Humidity Range	30 to 90% (no condensation)
	Cooling Requirements	Forced air cooling by internal fan
	Vibration Resistance	10 to 55 Hz, sweep time: 3 minutes, acceleration rate: 29.4 m/s ² (3G), one hour each in the X, Y, Z directions
	Shock Resistance	98m/s ² (10G)
	Installation Conditions	Horizontal or vertical mounting direction
Insulation	Insulation Withstand Voltage ^{Note 4}	Between input and output: 3000 V AC for 1 minute, between input and FG: 1500 V AC for 1 minute (leakage current: 30 mA or less each)
	Insulation Resistance ^{Note 4}	Input - output, input - FG and output - FG: 100 MΩ or above (measured with 500 V DC Megger)
External Structure / Standards	External Dimensions ^{Note 5}	220 ^W x 280 ^D x 64 ^H mm
	Weight ^{Note 6}	3900g
Standards	Safety Standards	UL1950, CSA No. 60950, and TÜV (EN60950) certified, CE marking compatible TÜV (EN60601) certified with option M
	Conducted Emission ^{Note 7}	Designated to meet FCC Class B, EN55022 Class B, and VCCI Class B

^{Note 1} Specified under rated input/output conditions at an ambient temperature of 25°C. Input current and efficiency depend on implemented DC cell modules.

^{Note 2} More inrush current than above noted value may flow for approximately one second after restart.

^{Note 3} When the ambient temperature is in the range from 0 to 50°C, use the rated load conditions. When the ambient temperature is in either the range from -10 to 0°C or 50 to 60°C, derate the output current to 80% or less of the rated value.

^{Note 4} Insulation conditions are specified at normal temperature and humidity. For medical equipment-support model (option M), insulation withstand voltage between batch input and batch output is 4000 V AC for 1 minute.

^{Note 5} For details, refer to the external view diagrams.

^{Note 6} The weight is the estimated weight when single output type DC cell module has been fully mounted.

^{Note 7} When the medical equipment-support model (option M) is used, this product complies with the FCC Class A, EN55022 Class A, and VCCI Class A standards.

Output Specifications (DC cell module)

Single output type

DC Cell Module Symbol	A	B	C	D	E	F	G	H	J	
Rated Output Voltage	3.3V	5V	12V	15V	24V	36V	48V	2V	6V	
Output Voltage Variation <small>Note 1</small>	Rated output voltage $\pm 10\%$								1.8 to 2.4V	Rated output voltage $\pm 10\%$
Rated Output Current	24A	24A	10A	8A	5A	3.3A	2.5A	24A	20A	
Allowable Output Current Range	0 to 100% (without exceeding maximum output power and current)									
Rated Output Power	79.2W	120W	120W	120W	120W	118.8W	120W	48W	120W	
Ripple Noise <small>Note 2 Note 3</small>	100mV	100mV	200mV	200mV	300mV	350mV	400mV	100mV	100mV	
Constant Voltage Accuracy <small>Note 4</small>	$\pm 3\%$									
Overcurrent Protection (min) <small>Note 5</small>	26.4A	26.4A	11.0A	8.8A	5.5A	3.7A	2.8A	26.4A	22A	
Overvoltage Protection <small>Note 6</small>	3.7 to 4.7V	5.6 to 7.0V	13.3 to 16.8V	16.6 to 22.5V	26.5 to 33.6V	39.7 to 50.4V	52.9 to 60.0V	2.6 to 3.2V	6.7 to 8.4V	
Remote Sensing <small>Note 7</small>	Provided									
Overheating Protection <small>Note 8</small>	Provided									
Series Operation <small>Note 9</small>	Enabled									
Parallel Operation <small>Note 9</small>	Enabled									
Orations Display	Provided									
Output Terminal Type <small>Note 10</small>	Terminal stand									
Required Number of Cells	1 cell									

Multi-output type

DC Cell Module Symbol	Q1(4ch)				Q2(4ch)				W11(2ch)		W22(2ch)	
Rated Output Voltage	+5V	-5V	+12V	-12V	+5V	-5V	+15V	-15V	5V	5V	12V	12V
Output Voltage Variation <small>Note 1</small>	Fixed				Fixed				Rated output voltage $\pm 5\%$		Rated output voltage $\pm 5\%$	
Rated Output Current	3A	1A	1A	0.5A	3A	1A	1A	0.5A	4A	4A	4A	4A
Allowable Output Current Range	0 to 100%				0 to 100%				0 to 100%		0 to 100%	
Rated Output Power	38W				42.5W				40W		96W	
Ripple Noise <small>Note 2 Note 3</small>	100mV		150mV		100mV		150mV		100mV	100mV	200mV	200mV
Constant Voltage Accuracy <small>Note 4</small>	$\pm 5\%$		$\pm 5\%$		$\pm 5\%$		$\pm 5\%$		$\pm 3\%$		$\pm 3\%$	
Overcurrent Protection (min) <small>Note 5</small>	3.3A	1.1A	1.1A	0.6A	3.3A	1.1A	1.1A	0.6A	4.4A	4.4A	4.4A	4.4A
Overvoltage Protection <small>Note 6</small>	5.6 to 7.0V	-	13.3 to 16.8V	-	5.6 to 7.0V	-	16.6 to 22.5V	-	5.6 to 7.0V	5.6 to 7.0V	13.3 to 16.8V	13.3 to 16.8V
Remote Sensing <small>Note 7</small>	-				-				-		-	
Overheating Protection <small>Note 8</small>	-		Provided		-		Provided		Provided		Provided	
Series Operation <small>Note 9</small>	Disabled				Disabled				Enabled		Enabled	
Parallel Operation <small>Note 9</small>	Disabled				Disabled				Disabled		Disabled	
Orations Display	Provided				Provided				Provided		Provided	
Output Terminal Type <small>Note 10</small>	Connector				Connector				Connector		Connector	
Required Number of Cells	1 cell				1 cell				1 cell		1 cell	

Note 1 The rated output current and maximum output power are both specified even when the output voltage is variable.

Note 2 Specified under rated input/output conditions at an ambient temperature of 25°C.

Note 3 Ripple noise value was measured using a 1:1 probe and a 100-MHz oscilloscope, with measurements taken 5 cm from an output connector and with a connected 63-V, 47- μ F electrolytic capacitor. Ripple noise is measured by a 100-MHz oscilloscope using a 1:1 probe at a point 5 cm from the output connector, with a 47- μ F electrolytic capacitor connected to that point.

Note 4 The constant voltage accuracy is measured with a static input range of 300 to 410 V DC, a static load range of 0 to 100%, a time drift of 10 minutes to eight hours and an ambient temperature range of 0 to +50°C.

(When the ambient temperature is in the range from -10 to 0°C or 50 to 60°C, the rating is based on 80% derating of the rated output current.)

The constant voltage accuracy for multi-output type with output voltage of either -12 V or -15 V is specified when total output power of either 6 or 7 W for other channel output.

(When a -15 V output current is in the range from 0 to 0.1 A, the total output power for other channel output must be at least 1.5 W.)

Note 5 Overcurrent protection uses the constant current drooping method (delayed shutdown method).

Note 6 When the overvoltage protection function kicks in, output is shut down. This output shutdown remains active for as long as the control voltage (+VCC) is being supplied.

Note 7 The remote sensing function should be set to correct for line drops of up to 250 mV. Use twisted pair or shielded wires as the sensing lines, and if the lines are long, insert capacitors between +S and +V and between -S and -V. The maximum output power is specified for the power supply's output voltage.

Note 8 Overheating protection operates when an abnormal ambient temperature is detected.

Note 9 Please contact eUrasia Power when using DC cell modules for series operation or parallel operation.

Note 10 Terminal stand type is also supported for multi-output types W11, W22, Q1, and Q2. (Their DC cell module symbols are W11T, W22T, Q1T, and Q2T.)

PCU Series

400W, 600W, 900W

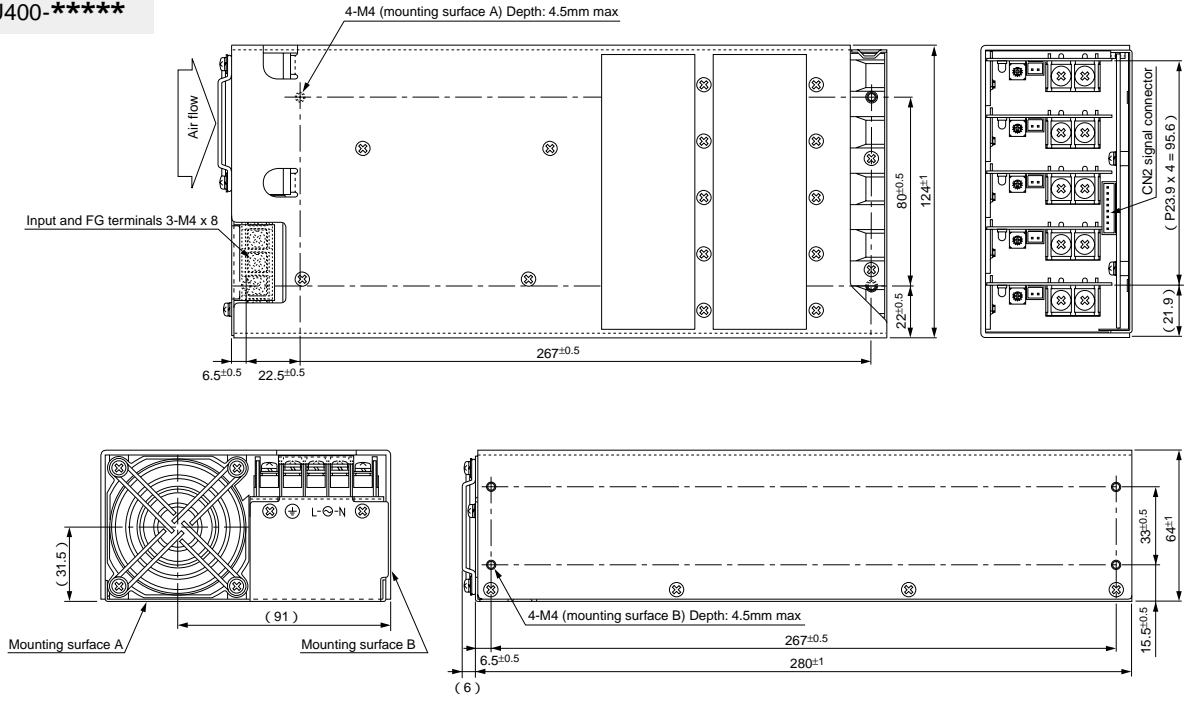
External Dimensions

(unit: mm)

400W (weight: 2300 g)

Model

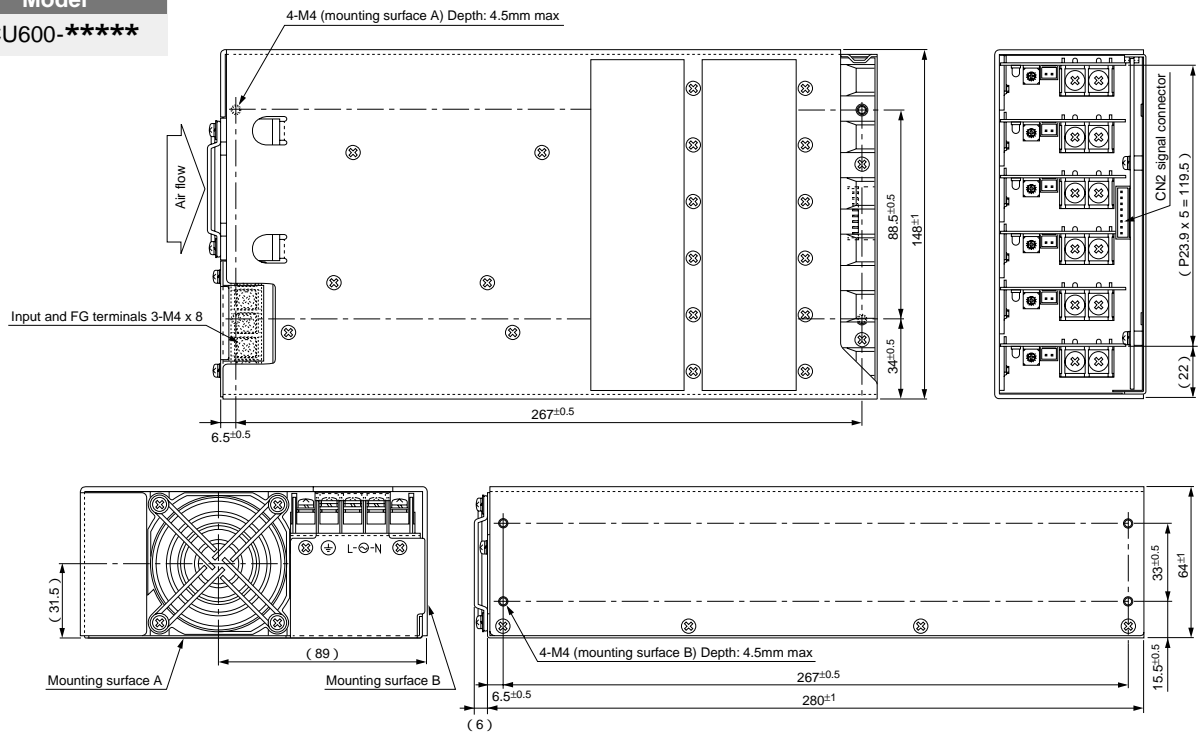
PCU400-*****



600W (weight: 2600 g)

Model

PCU600-*****



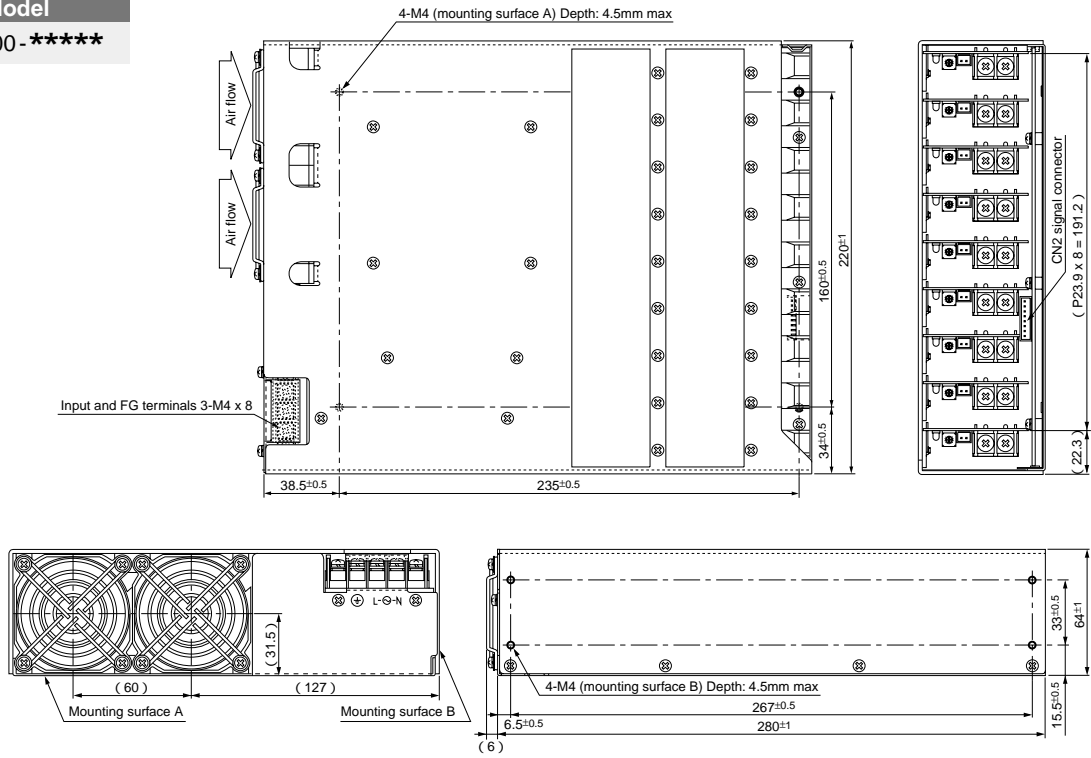
External Dimensions

(unit: mm)

900W (weight: 3900 g)

Model

PCU900-*****



PCU Series

400W,600W,900W

Description of Functions (main functions)

1 Signal output (standard equipped)

The PCU series includes standard-equipped signal output, which can be used as needed.

Alarm signals ... For undervoltage, overvoltage, fan malfunction, DC output fault, overheating protection, etc.

AC power fail signal ... For reduction or setup of AC input voltage

* The fan alarm signal can be transmitted as an independent signal. For details, please contact eUrasia Power.

* When an alarm status continues for a certain amount of time, the DC cell module's output is turned off.

* The timing for transmitting signals and turning off the DC cell module output is set based on standard values set by eUrasia Power.

2 Protection functions

Each of the PCU Series DC cell modules contains independent protection circuitry (for overcurrent protection, overvoltage protection, and overheating protection).

3 Output voltage variation

The output voltage can be changed in each of the PCU Series DC cell modules (variation range: $\pm 10\%$ of rated voltage).

However, there is no output variation function for multi-output DC cell modules Q1 and Q2.

4 Remote sensing

Each of the PCU Series DC cell modules has a remote sensing function. The voltage correction value should be within 0.25 V.

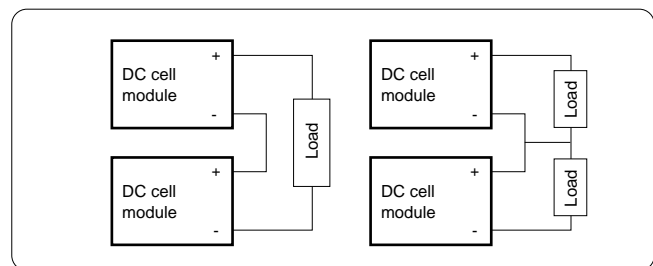
However, there is no remote sensing function for multi-output DC cell modules W11, W22, Q1, and Q2.

5 Series operation

The PCU Series DC cell modules can be used for series operation. When performing series operation, the specification for the DC cell module with the lower rated current applies.

However, multi-output DC cell modules Q1 and Q2 cannot be used for series operation.

For details, please contact eUrasia Power.



6 Parallel operation

The PCU Series DC cell modules can be used for parallel operation. When DC cell modules are used for parallel operation, eUrasia Power changes their internal settings and connects the output terminals of the parallel DC cell modules using a short bar.

The parallel DC cell modules operate using a load balancing function.

However, multi-output DC cell modules W11, W22, Q1, and Q2 cannot be used for parallel operation.

For details, please contact eUrasia Power.

Example: When using a 24-V load at 10 A (240 W)

Two DC cell E modules (rated at 24 V, 5 A, 120 W) are used for parallel operation, and their output is 10 A (240 W).

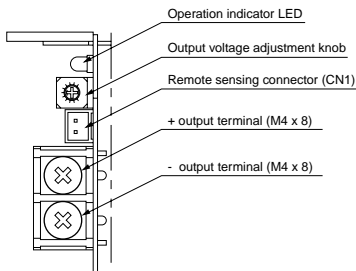
7 Negative power supply

Due to the structure of the PCU Series DC cell modules, the polarity (+ or -) of the DC output terminals cannot be changed.

When using them as a negative output power supply, use positive (+) terminals as SG and negative (-) terminals as negative output.

8 Output terminals and connectors

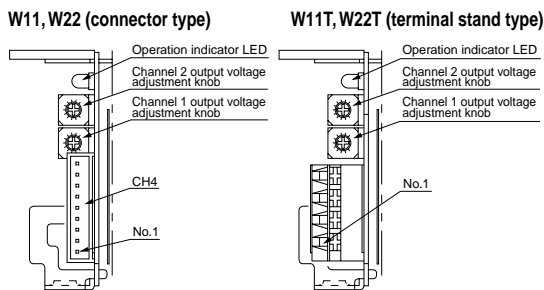
• Single output DC cell module



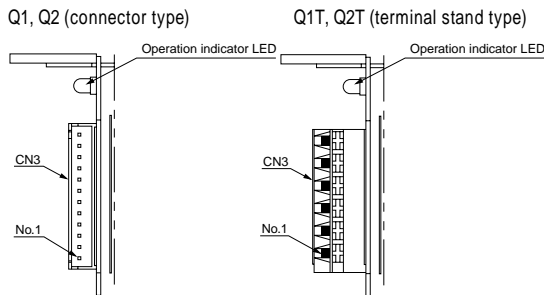
CN No.	Pin No.	Function	Compatible housing	Corresponding contact
CN1	1	Remote sensing -	XHP-2 (JST)	SXH-001T-P0.6 (JST)
	2	Remote sensing +		
CN2	1	+ 5V STB	XHP-8 (JST)	SXH-001T-P0.6 (JST)
	2	SG		
	3	RMT2 ON/OFF		
	4	RMT3 ON/OFF		
	5	RMT4 ON/OFF		
	6	RMT1 ON/OFF		
	7	Alarm		
	8	AC power fail		

* Recommended screw fastening torque:
 (1) Terminal screws: 118 N·cm
 (2) Mounting holes: 142 N·cm

• Multi-output DC cell module



CN4 Pin No.		Function	W11, W22 (connector type)		W11T, W22T (terminal stand type) Corresponding wiring
W11, W22 (connector type)	W11T, W22T (terminal stand type)		Corresponding housing	Corresponding contact	
8, 9	4	5V or 12V (CH1)	XHP-9 (JST)	SXH-001T-P0.6 (JST)	Single wire AWG16 to 26 (UL, C-UL, TÜV) Stranded wire AWG16 to 22 (UL, C-UL) Stranded wire AWG16 to 24 (TÜV) Sheath stripping length: 7 to 10 mm
6, 7	3	GND (CH1)			
5		NC			
3, 4	2	GND (CH2)			
1, 2	1	5V or 12V (CH2)			



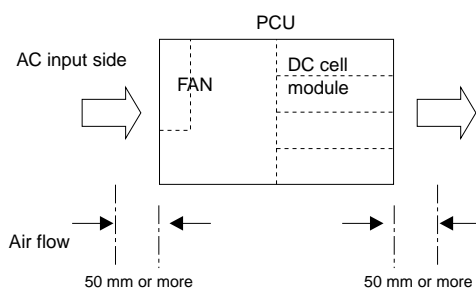
CN3 Pin No.		Function	Q1, Q2 (connector type)		Q1T, Q2T (terminal stand type) Corresponding wiring
Q1, Q2 (connector type)	Q1T, Q2T (terminal stand type)		Corresponding housing	Corresponding contact	
11, 12	6	+ 5V	XHP-12 (JST)	SXH-001T-P0.6 (JST)	Single wire AWG16 to 26 (UL, C-UL, TÜV) Stranded wire AWG16 to 22 (UL, C-UL, TÜV) Stranded wire AWG24 only (TÜV) Sheath stripping length: 7 to 10 mm
9 & 10	5	GND			
7 & 8	4	- 5V			
5 & 6	3	+ 12V or + 15V			
3 & 4	2	GND			
1 & 2	1	- 12V or - 15V			

9 Cooling method

The PCU Series uses an internal fan for forced air cooling. The fan is an intake fan mounted on the input terminal side. Leave at least 50 mm of space on the AC input terminal side or DC cell module output terminal side, where the fan is mounted.

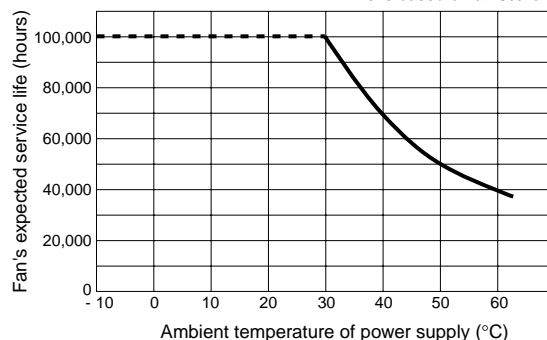
If the internal fan has stopped, output may be shut off by the overheating protection circuit.

The fan's expected service life span may be affected by the power supply's use conditions, so the fan should be checked regularly. The fan must be replaced periodically because its service life is limited.



Fan's expected service life

* The fan unit's expected service life is based on a 10% failure rate.

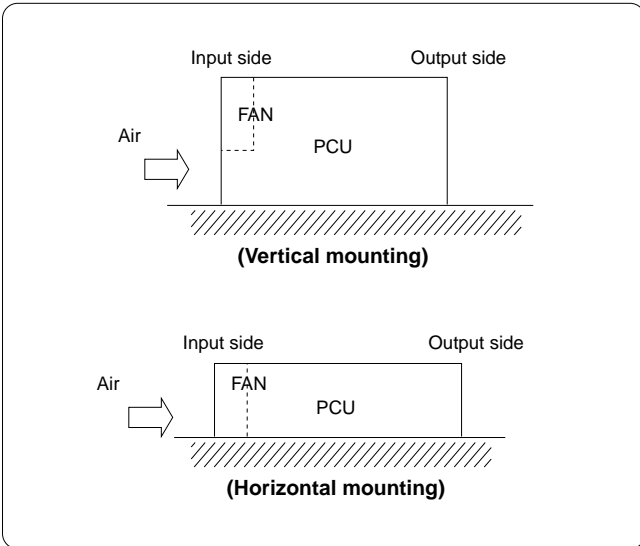


PCU Series

400W,600W,900W

10 Mounting

eUrasia Power recommends using the standard mounting method for its power supplies. This standard mounting method is illustrated below.



The length of the screws should take into account the insulation distance from the internal parts. Adjust the length so that the depth from the PCU case's surface is not greater than 4.5 mm.

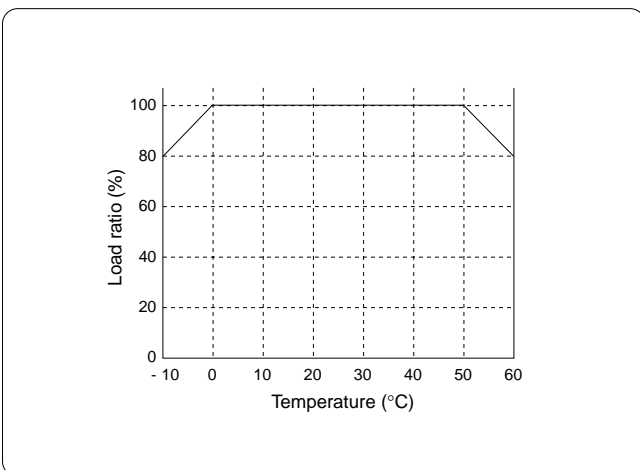
The recommended mounting screw fastening torque is 142 N•cm.

Please contact eUrasia if you intend to use any non-standard mounting method.

11 Derating for ambient temperature

eUrasia recommends using the standard mounting method to mount its power supplies.

Use the output derating values shown below, based on the power supply's ambient temperature.

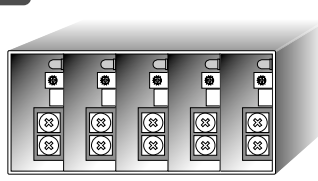


12 Derating based on mounting positions of DC cell modules

Derating based on the mounting positions of the DC cell modules is required for PCU Series power supply.

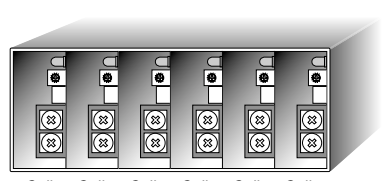
Derating values based on DC cell module position of various capacities are shown below. Refer to this when determining a configuration of DC cell modules for PCU Series power supplies.

PCU400



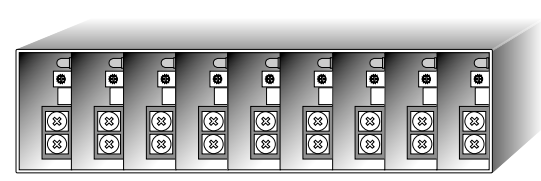
Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	
83%	100%	100%	100%	100%	← Derating of output capacity

PCU600



Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	
83%	100%	100%	100%	100%	100%	← Derating of output capacity

PCU900



Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 7	Cell 8	Cell 9	
83%	94%	100%	100%	100%	100%	100%	100%	100%	← Derating of output capacity

Options

1

What are the optional functions in PCU Series devices?

The cell control module provides a wealth of optional functions using microprocessor control.

Microprocessor control means that various types of processing that had previously been handled by hardware (operation of relay circuits, delay circuits, etc.) are now performed as software processing.

The desired operation mode can be easily selected via program settings.

If specification changes are required during the customer's evaluation process, these can also be supported via simple changes in program settings, thus minimizing time loss.

• Alarm sequence

Option A

When a fan malfunction or DC output fault is detected, the unit can be switched off at any specified time following transmission of the alarm signal.

* The standard-equipped alarm signal turns off the DC cell module's output at a time (following transmission of the alarm signal) based on standard values set by eUrasia.

* If a DC output fault occurs, the corresponding output is shut off immediately. Shut-off times can be set for other output.

• AC power failure

Option P

The AC input voltage is monitored, and an AC power fail signal is transmitted when the AC input voltage is set up or reduced. If a power failure (AC power failure) is detected, output can be shut off at any specified time following transmission of the power fail signal (varies depending on the load capacity and DC cell module used). The DC cell module's output hold time can be extended by stopping unnecessary DC output.

* When a longer time setting is entered for the power supply's output hold time (which differs according to the specifications and setup conditions), the DC cell module's output is reduced before the set time has elapsed. For details, please contact eUrasia Power.

* The time for transmission of the standard-equipped AC power fail signal is fixed.

• Cell output sequence

Option S

The startup sequence can be set for each DC cell module. Up to nine levels can be set in the startup sequence (when the PCU900-9 cells are used).

* The shut-off sequence can also be set in combination with other options.

• External remote ON/OFF

Option R

An external signal can be used to remotely turn the PCU Series DC cell modules ON or OFF (select among turning ON or OFF all DC cell modules at once, half of the cells, or one third of the cells).

• Cell group control

Option C

DC cell modules can be grouped (and divided into three groups) and a separate startup sequence can be set for each group.

* When this is done during economy mode (Option E), the shut-down sequence can also be set.

* When this cell group control function (Option C) is selected, the external remote ON/OFF function (Option R) is included. However, it is not possible to use a group sequence after using the external remote ON/OFF function (Option R).

• Economy mode

Option E

Power consumption can be reduced during standby by shutting down the PCU Series cell models (PFC cells and DC cells) and stopping the internal fan (power consumption in economy mode is approximately 3.9 W during 100 V AC input). In this case as well, a +5 V STB power supply (CN2's pin 1, 5 V 50 mA, standard equipped) can be used.

• Medical equipment support

Option M

Medical equipment standard EN60601-1 (TÜV) certified (PCU400M/600M).

The leakage current is 0.5 mA or less.

PCU Series

400W,600W,900W

Options

2

Combining optional functions

Any combination of PCU Series device options can be used. Following are some examples for reference. For details, please contact eUrasia.

• Example of combining cell output sequence **Option S** with external remote ON/OFF **Option R**

Operation mode

- ① External remote ON/OFF function (PCU ON) is used to enable operation of DC cell modules.
- ② Cell output sequence function is used to sequentially start DC cell modules.
- ③ Similarly, shut-down operations also can be set.

• Example of combining cell output sequence **Option S** with economy mode **Option E**

Operation mode

- ① Economy mode function (PCU ON) is used to enable operation of PCU Series power supply.
- ② Cell output sequence function is used to sequentially start DC cell modules.
- ③ Similarly, shut-down operations also can be set.

• Example of combining cell output sequence **Option S** with cell group control **Option C**

Operation mode

- ① Cell group control function (PCU 1G ON) is used to set up group No. 1 and enable operation of the group.
- ② Cell output sequence function is used to sequentially start DC cell modules in group No. 1.
- ③ Operation modes ① and ② are repeated to sequentially start group Nos. 2 and 3.
- ④ Similarly, shut-down operations also can be set.

3

Examples of parameter setting ranges for optional functions

When optional functions have been selected for a PCU Series power supply, parameters can be set for each function. The setting ranges for some of these parameters are listed below for reference.

Unless otherwise specified by the customer, eUrasia Power's standard value is set.

* Please contact eUrasia concerning use of any other operation mode.

• Alarm signals

Item	Description	Setting range	Standard setting
Fan alarm	Sets time between fan stoppage and alarm signal output	2s to 25s	10s
DC output fault alarm	Sets time between DC output fault and alarm signal output	0s to 25s	3s
AC power fail signal	Sets time between AC power failure and AC power fail signal output	Within 25 ms (fixed)	Within 25 ms (fixed)
DC output OFF	Sets time between alarm signal output and shut-off of DC power	0s to 25s	0s
	Sets time between AC power fail signal output and shut-off of DC power	0 to 250ms	250ms

• Sequences

Item	Description	Setting range	Standard setting
Enable operation of DC cells when AC power is ON	Sets time between AC power ON and setting of operation enabled status for DC cells	Within 500 ms	
Cell output sequence	Sets startup sequence for each DC cell	0 to 2500ms	0ms
	Sets the shut-down sequence for each DC cell		
External remote ON/OFF	Sets time between external remote ON and setting of operation enabled status for DC cells	60±10ms	0ms
	Sets time between external remote OFF and stopping of DC cell operation		
	Sets time between external remote ON and DC cell startup sequence	0 to 2500ms	
	Sets time between external remote OFF and DC cell shut-down sequence		
Cell group control	Sets time between external remote ON and setting of operation enabled status for DC cells	Within 500 ms	0s
	Sets each group's startup sequence	0 to 60s	
	Sets each group's shut-down sequence		
	Sets startup sequence of DC cells in each group	0 to 2500ms	
Sets shut-down sequence of DC cells in each group			
Economy mode	Sets time between economy mode ON and setting of operation enabled status for DC cells	260±10ms	
	Sets time between economy mode OFF and stopping of DC cell operation	60±10ms	

Settings for standard-equipped alarm signals

eUrasia's Power's standard settings for alarm signals are listed below.

Item	Description	Standard setting
Fan alarm	Sets time between fan stoppage and alarm signal output	10s
DC output fault alarm	Sets time between DC output fault and alarm signal output	3s
DC output OFF	Sets time between alarm signal output and shut-off of DC power	3s

Note: When a DC output fault occurs for any output, the output is shut off immediately.
Other output is shut off after a specified amount of time for "DC output OFF".

Interface

The logic and interface for the external remote control and alarm signals are described below.

• Remote control <configured by four channels consist of CN2's pins 3 to 6>

CN2 Pin No.	Item	Logic (TTL level)	Interface
3	RMT2 ON/OFF Turns all DC cell modules ON or OFF	L: ON H: OFF	
3, 4, 5	RMT2, 3, 4 ON/OFF Divides DC cell modules into three groups and turns grouped cells ON or OFF	L: ON H: OFF	
6	RMT1 ON/OFF Turns OFF PFC cell modules to set economy mode	L: ON H: OFF	

• Alarm signals <configured by two channels consist of CN2's pins 7 and 8>

CN2 Pin No.	Item	Logic (TTL level)	Interface
7	Alarm Alarm signal is output when specified time has elapsed following alarm detection	L: Normal H: Abnormal	
8 *	AC power failure Signal is output when input voltage reduction or setup occur	L: AC voltage is abnormal (60 to 75 V AC or below) H: AC voltage is normal (70 to 80 V AC or above)	

* The fan alarm signal can be transmitted separately instead of the AC power fail signal.
For details, please contact eUrasia Power.

PCU Series

400W,600W,900W

Product Names

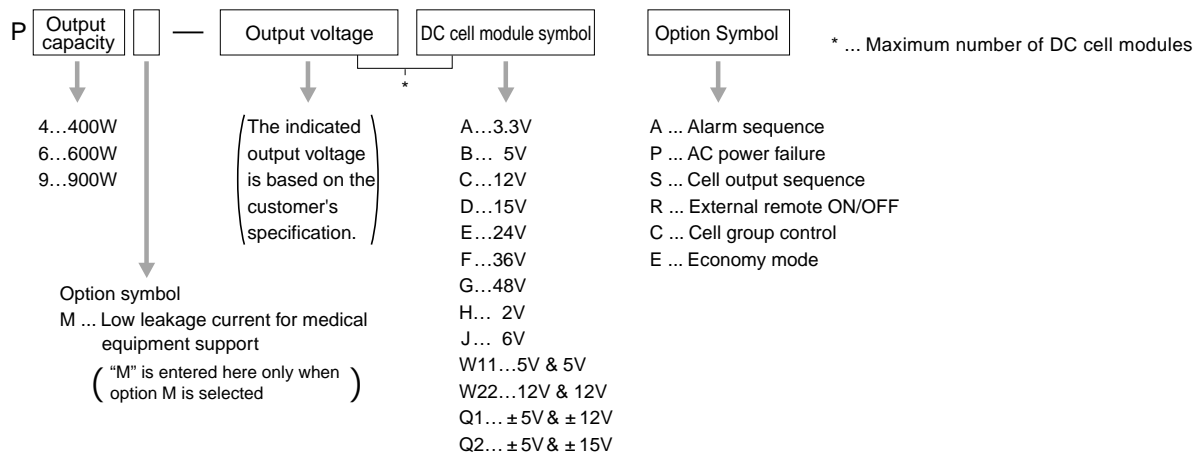
- **Product names:** The name is set as shown below for PCU Series products.

Model name — * * * * * **Example** PCU600-10001

Registration number (five-digit numerical value)

Registration number is assigned by eUrasia Power for each of your ordering specifications.

- **Product configuration names:** The product configuration name is set as shown below to designate DC cell configurations and option configurations for PCU Series products.



Example 1 Basic example

P6 — 5.2B-5B-0-12C-24E-24E APSRE

Number: Output voltage
Letter: DC cell module symbol
This indicates the insertion sequence for Cell 1 to Cell 6, starting from the left.
0 indicates a blank (dummy insertion).

This indicates the selected optional function.

Example 2 Parallel connection among DC cell modules in unit

P6 — 5.2B-5B-0-12C-24E2P-E APSRE

This indicates two E modules (cell 5 and cell 6) with 24-V output are connected in parallel (Parallel block's DC cell symbol + number of parallel connections + parallel symbol "P")
* If three 5-V cells are linked in parallel: 5B3P-B-B.

Example 3 Series connection among DC cell modules in unit

P6 — 5.2B-5B-0-12C-100G2S-G APSRE

This indicates two G modules (cell 5 and cell 6) are connected in series to configure a 100-V output (Series block's DC cell symbol + number of series connections + series symbol "S")

Sample Order Sheet

From your company to Sanken

Your company	Company name:	Address:
	Division/Department:	
	Contact person:	
	Telephone number:	Email address:
	Fax number:	Name of device or equipment used:
	Application or purpose:	
	Other:	

Request specifications	Input voltage	AC V (V ~ V)								
	Output specifications	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 7	Cell 8	Cell 9
	Output voltage (V)									
	Output current (A)									
	Output capacity (W)									
	Total output capacity (W)									
	Optional functions	Alarm sequence	Yes No		External remote ON/OFF			Yes No		
		AC power failure	Yes No		Cell group control			Yes No		
		Cell output sequence	Yes No		Economy mode			Yes No		
	Number of samples and requested delivery date									
Other										

From Sanken to your company

Proposal specifications	Product name									
	Product configuration name									
	Output specifications	Cell 1	Cell 2	Cell 3	Cell 4	Cell 5	Cell 6	Cell 7	Cell 8	Cell 9
	Output voltage (V)									
	Output current (A)									
	Output capacity (W)									
	Total output capacity (W)									
	Other									