User Manual

Reguleated DC Power Supply Unit

Model : SMP-40300P

Serial No : JU14-1 4 6 2

Sigma-Tech

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1. Overview

The SMP-Series is semi-permanent power supply with high accuracy and high reliability. The SMP-Series include many kinds of standard products which provide differ capacity to be used as a power supply of diverse euipments.

Automatic VC limiter equipped in SMP power supply

has independent OP AMP. With high accuracy and smooth switching,

it can be DC power for both constant voltage and constant current. It is also protected against any access.

2, Important Instructions before using

A. It can be broken if the input is over the specified input voltage.

Please check the standard before applying the input.

B. When you ground output terminals on both the face and the back, please align the polarities of ground on both sides. If not, the output will be short.

C. Do not put any item on this equipment or around this equipment.

Do not use when the temperature is over 40 degrees Celsius.

D. It displays the access of Juper Code. The output of short or overload with unfastenec bolt break this equipment.

E. Evade the use in the environment with many dust, corrosive gas and etc.

If not, please put this in any case or room.

If the stability of ouput voltage is important, please do Remote sensing.

3. How to use

It is DC power supply for both constant voltage and constant current.

This power supply can support constant current If resistive load occurs in ordinary const voltage operation.

A. In case of regulated power supply

1) Please connect after checking the AC input voltage in specification-standard.

2) Please turn the handle for constant current clockwise and the handle for contant voltage counterclockwise.

3) If turn on the switch and turn the handle for constant voltage clockwise, the output voltage increases. Please set at the voltage you need.

4) Once turn off the switch and connect load to the output terminal,

(+) and (-) terminals can be grounded because both terminals are sperated with the frame. Please earth after joining one output terminal to Frame Ground.

5) if you turn on the switch, CV lamp will be turned on and the required voltage will be provided.

6) If the load is short or an excess current, it is controlled as a constant curent at the maximum current to decrease output voltage proportional to the impedence in the load. It ends up preventing the overcurrent. The voltage become constant voltage if the load get back on track. For the persnickety load, please make output shourt and set the preferred current with the handle ahead of connecting. Constant current displays on an ammeter and the value will be the set-point for prevention of overcurrent.

7) The minimum output will be provided if the handle for constant voltage is fully

turned counterclockwise or it is short between the terminals on the back and the output voltage and current enter the set-value. And the minimum output will be generated with the voltage over 10mV at the output port and counter polarity. If counter polar voltage is applied, it can be broken.

B. In case of constant current regulated power supply

1) Please check the input caacity.

If your product has output range transition, tune it to the required range

2) Turn the handle for constant voltage fully clockwise and the handle for constant current fully counterclockwise.

3) Make sure you connect the load with the output terminal. Please connect one end of ordinary outut terminal (+) and (-) to Frame Ground and earth on it.

4) Set the current you need with the handle for constant current because CC lamp will turn on if you turn on the switch.

5) When the resistive load increase during the constant current operation, the output voltage increase proportional to the resistance. Thus, please set the output voltage with the handle for CV before connecting the load.

This prevent the overcurrent to the load because constant voltage operation automatically changes when the load resistance and constantcurrent is set.

C. Remote Control Function

1, Remote Function

1-A) Lamp(Blue) turn on if remote S/W is turned on

1-B) The voltage is set from 0 to 10 volt according to input at the EXT

1-C) Output voltage displays according to the set value and the output is permitted by external equipment(PC, PLC and etc).

1-D) Do not common the (-) on EXT input with (-) on DC output.

EXT input (+,-) 0-10V permit the independent control voltage.

1-E) If EXT, A point of output On/Off in Input or control terminal block should be on to activate DC output

(Remote function is optional)

2. Local function

2-A) Lamp(Blue) will be turn off if remote s/w is at local.

2-B) Facial voltage volume control the voltage

3. Protection function

3-A) OVP function

If the set voltage is over, OVP Lamp(Yellow) will be on and the output voltage will be automatically down.

Then, you need to turn off Power S/W and turn on after 2 or 3 seconds.

3-B) OCP function

If the set current is over, C/C Lamp(Red) will be turned on.

3-C) Fan Motor

Auto: If Heat Sint temperature is below 50 degrees Celsius, it's off. If not, it's on.
Manual: Fan Motor On(always)

D. Repair and inspection

To keep the initial performance or prevent unexpected accidents, you need a

a periodic check.

A) Cover Panel

Please clean the cover panel with alcohol or a weak neutral detergent and cotton

flannel.

B) The Internal

Remove the dust with vacuum cleaner after the power code is plugged out.

C) Please check the insulation resistance frequently.

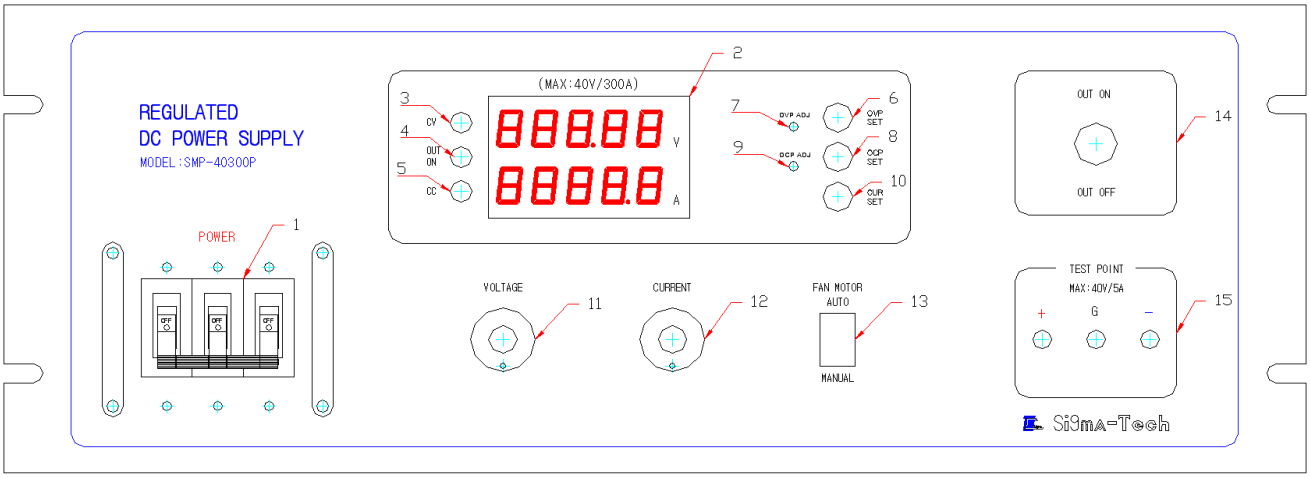
D) No strange sound is accepted.

the life of a fan motor is about 40,000 hours in the temperature of 40 degrees

E) When fuse is replaced, AC input power switch should be off.

4. Facial function manual

4-1) Facial configuration



1, Power S/W 2, Current,Viktage Display

3, CV Lamp 4, Output On Lamp 5, CC Lamp

6, OVP Set S/W 7, OVP ADJ VR

8, OCP Set S/W 9, OCP ADJ VR

10, Current Set S/W (Don't use)

11, Output Voltage VR (Output voltage adjustment)

12, Output Current VR (Output current adjustment)

13, Fan Motor S/W

14, Output On/Off S/W

15, Output Test Point

4-2) Configuration

It is a mode to set initial parameter and functions.

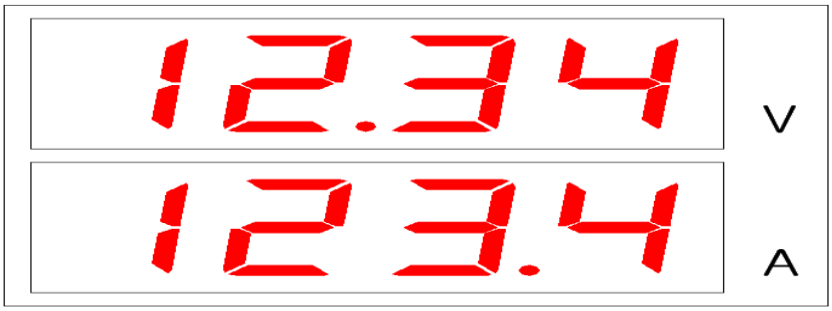
With power on, setthe voltage or current with voltage and current VR.

Connect output line to the load and turn on the output on/off SW.

4-3) Name and function of each part

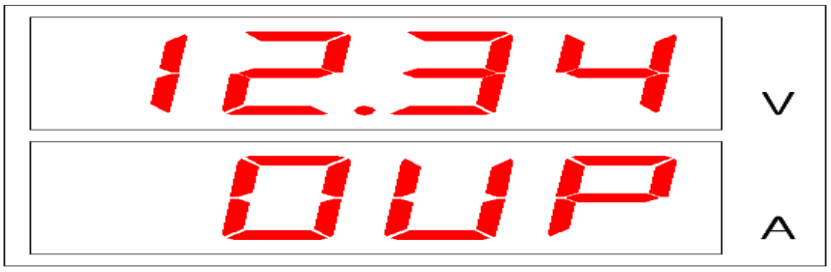
A. Facial setting FND configuration

1.Voltage and Current setting



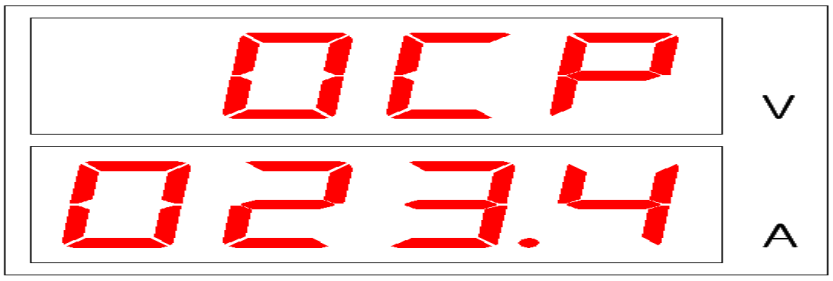
Turnning Voltage and Current VR

2.Over Voltage Protect (OVP) setting



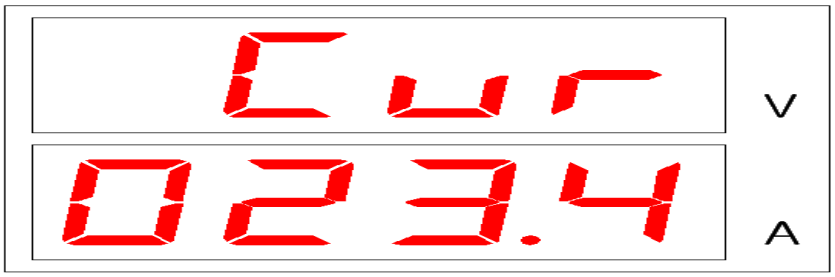
After pushing OVP button at the right side, turn OVP ADJ until the value is over predefined power value.

3.Over Current Protect (OCP) setting



After pushing OCP button at the right side, turn OCP ADJ until the value is over predefined power value.

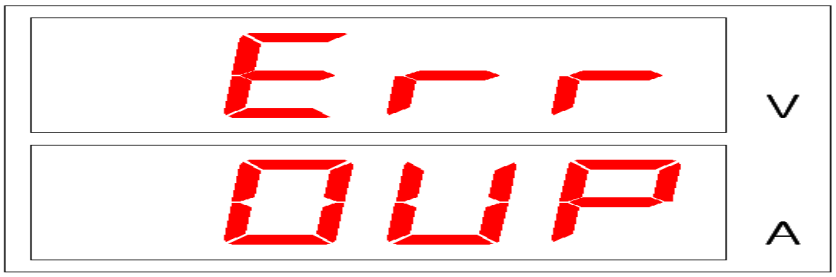
4.Current (CUR) setting (Don't use)



After pushing CUR button at the right side, turn Current VR to set the value.

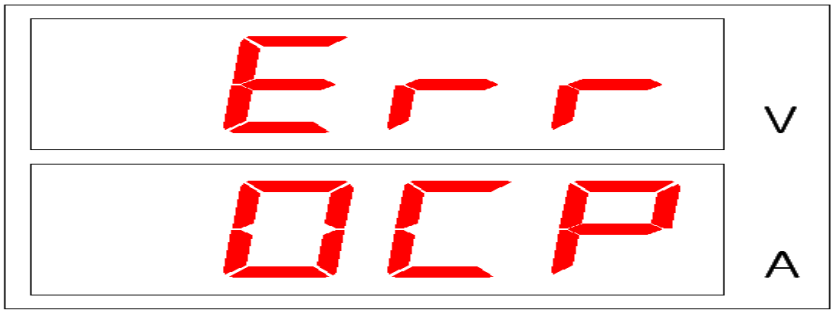
B. Err FND configuration

Over Voltage Protect (OVP) Err



The voltage output of power is over the set-value.

Over Current Protect (OCP) Err



The current output of power is over the set-value.

4-4) Name and function of each part

A. Indicator LED

1. CV : On if the constant voltage is under the output control of power.

2. CC : On if the constant current is under the output control of power.

3. Out On : On if the output current or voltage is out.

B. the kinds of error

Err	Contents
OVP	The output voltage is over OVP set value
OCP	The output voltage is over OCP set value
OTP	The temperature in Power is over 85°C(option)

C. Button function

- OVP : set the max value of Over Voltage Protect

It could be 110% of standard. If the sensing value is over the set value, power will stop. Then, turn off the power and turn on again.

- OCP : set the max value of Over Current Protect

It could be 110% of standard. If the sensing value is over the set value, power will stop. Then, turn off the power and turn on again.

- On/Off : Control the output of power under local status.

- Voltage : input the voltage value of power under local status

- Current : input the current value of power under local status

- FND : display the information of voltage, current and etc.

5, How to use

Outline)

Basically, the controller always displays the corresponding value by AD sensing of output voltage and current of power. If user want to change data of current or voltage, he/she can do with the V/R of voltage or current.

In case of local status, it is same with the ordinary power operation.

5-1) Power On : Operation explantion

A. Voltage setting mode

Turn Voltage VR clockwise to set required voltage.

B. Current setting mode

Push CUR button 1 time. Then, turn Current VR clockwise to set required current. (The current setting mode will be back after 10 seconds)

C. OVP setting mode

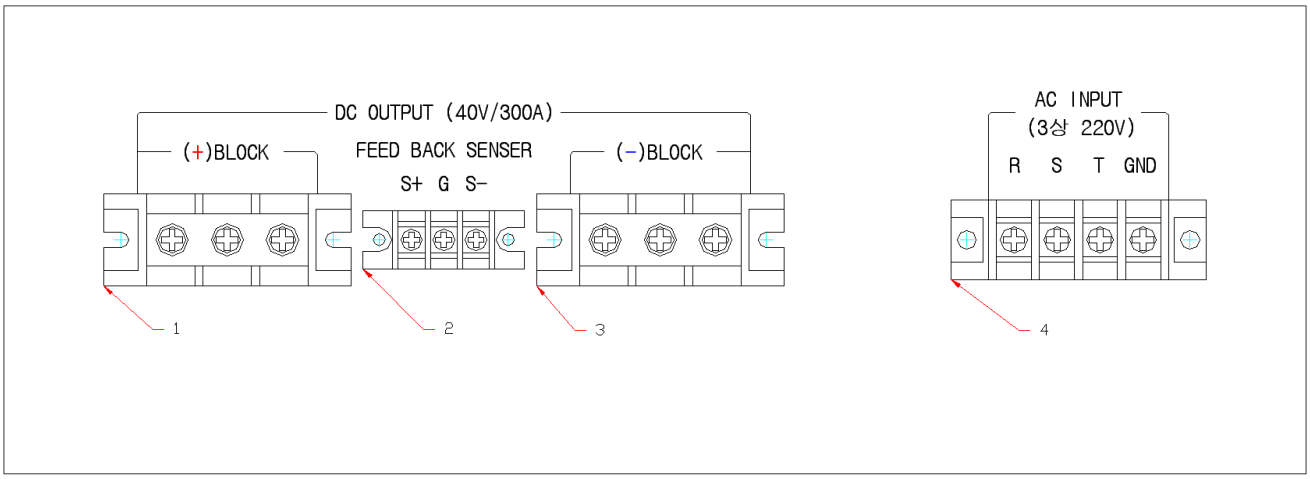
Push OVP button 1 time. Then, turn OVP ADJ VR clockwise to set required OVP value. (THE OVP mode will be back after 10 seconds.)

D. OCP setting mode

Push OCP button 1 time. Then, turn OCP ADJ VR clockwise to set required OCP value. (THE OCP mode will be back after 10 seconds.)

6. Back side functions

6-1) Terminal Block configuration



6-2) Input or Output Terminal Block

1. Output Terminal (+)Block

   Pin No 1~3 : (+) Block

2. Feed Back Senser Terminal Block

   Pin No 1 : S+

   Pin No 2 : Earth

   Pin No 3 : S-

3. Output Terminal (-)Block

   Pin No 1~3 : (-) Block

DC Output 40Volt 300Ampere

4. Input Terminal Block

   Pin No 1 : R type

   Pin No 2 : S type

   Pin No 3 : T type

   Pin No 4 : Earth

AC 220Volt 60Hz 3Ø

7. Instruction for using output line

You should connect the fleet of joint code or coverknife switch which has enough electrical capacity. If not, it may cause a trouble of heat. Please avoid using table tab.

***** In case of output wire, see below.

Wire thickness(mm)	allowable current(A)	Wire thickness(mm)	allowable current(A)
2	10	22	80
5.5	20	38	100
8	30	60	200
14	50	80	250

8. Specification

In common

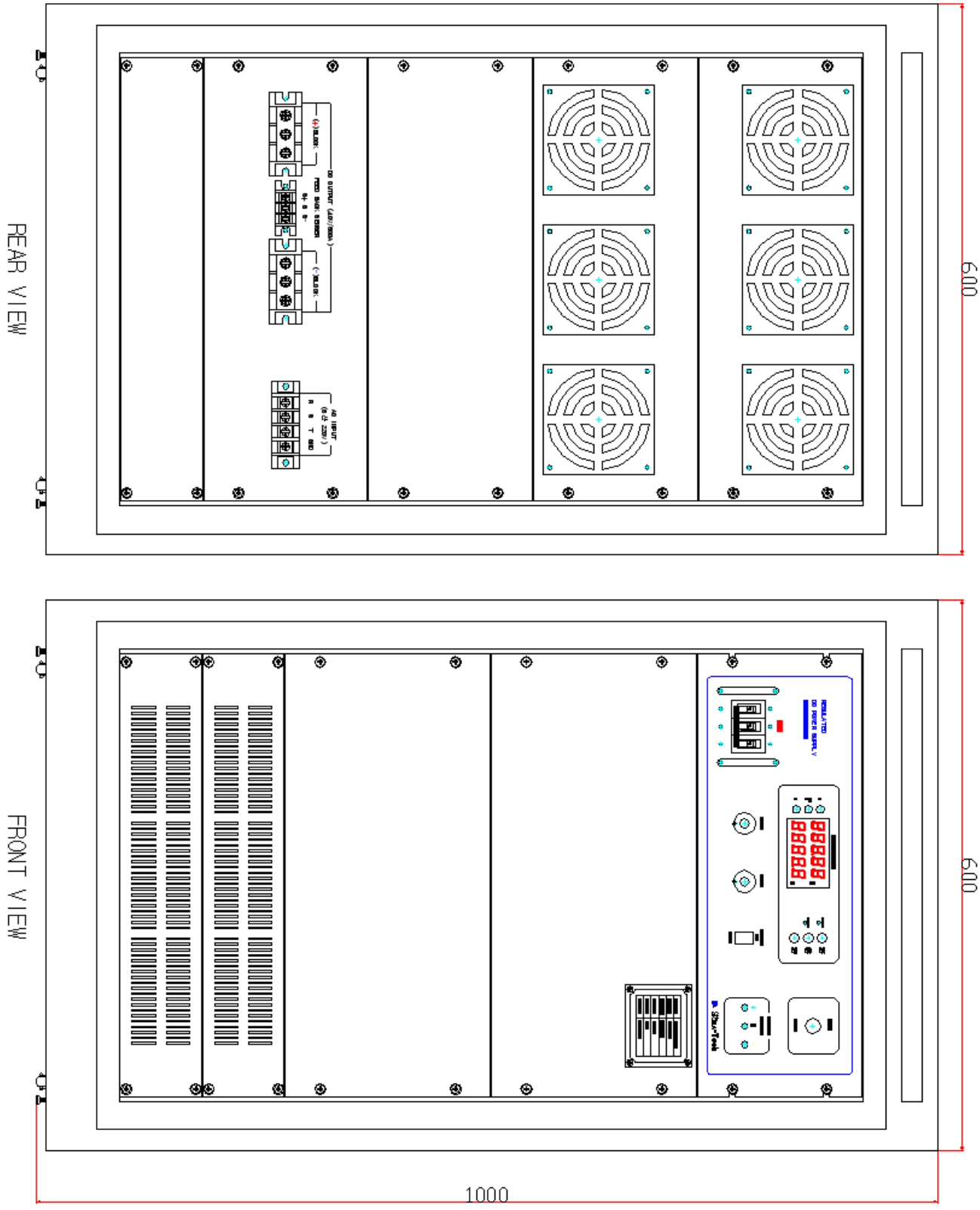
1. section resistance : over 20 Mohm
1. Protection function : VC Limit function (OVP function)
1. Output polarity : (+),(-) selectable
1. Ambient temperature : 0～40℃
1. Cooling system : Air-cooled (FAN cooling)
1. Manual : an instruction manual 1ea
1. Test result : 1ea (seperately attached)
1. A circuit diagram : 1 ea (seperatately attached)

STP Serise

Type name / Specification	SMP 40300P	SMP 3050	SMP 30100	SMP 30200	SMP 30500	note
Output voltage	0～40V	0～30V	0～30V	0～30V	0～30V	
Output current	0～300A	0～50A	0～100A	0～200A	0～500A	
Stability of CV	less than 0.005%+3mV				less than .008%+5mV	
CV Ripple voltage	less than 3mV r.m.s					
Stability of CC	less than 0.05%+10mV(about all input overloading)					
CC Ripple Current	Maximum COV+10 / Z		mV r.m.s (Z:60Hz load Impedence)			current operation value
Input voltage	AC 220VOLT ±20V 60Hz 3Ø (three phases)					
Input max current	12KVA	1.5KVA	3KVA	6KVA	15KVA	최대부하
Indicator (F.S 2.5 level)	40V 300A	30V 50A	30V 100A	30V 200A	30V 500A	Digital Digital
Weight(about)	300 Kg	46 Kg	70 Kg	200 Kg	340 Kg	
Size (Maximum)	600(W) 1000(H) 650(D)	440(W) 250(H) 520(D)	440(W) 250(H) 520(D)	600(W) 800(H) 650(D)	600(W) 1000(H) 650(D)	mm

*** Case Size and weight may be different according to the specification.

9. Outside view



10. Certificate of Calibration

Reguleated DC Power Supply 2014, July.

Model : SMP-40300P Serial No. JU14-1462

Output Voltage	DC 40 Volt		
Output Current	DC 300 Ampere		
Ripple & Noise Less Than	3mV		(RSM)
Line Regulation (± 10% Move)	Voltage	10mV	Less Than
	Current	10mV	Less Than
Load Regulation (0 ~100% Move)	Voltage	10mV	Less Than
	Current	10mV	Less Than
Voltage Indicator	16 Bit A/D	40.00 Volt	
Current Indicator	16 Bit A/D	300.0 mAmpere	
Safety device +10%	Over-Voltage Protectot (OVP)		
	Over-Current Protectot (OCP)		
Cooling System	Air-cooled		
Input Voltage	□ 100V □ 110V □ 200V ■ 220V		
Input Frequency	□ 50Hz ■ 60Hz		
Constant	3Ø		
Demension	W : 600 mm		
	D : 650 mm		
	H : 1000 mm		
Gross Weight	300 Kg		
Insulation resistance	between P-E	20 Mohm	more than
insulation strength	AC 1000 Volt		During 1min

제 품 보 증 서

Thank you for your expression of confidence in our product. The unit you have purchased is protected based on the date of purchase. Please record the date for after-sale service.

Model name		Reguleated DC Power Supply		
Model			Product no.	
The date of bought				
Customer	Name		TEL	
	adress			
Store	Name		TEL	
	adress			

Warranty Information

1. Warranty period is 2 years. The repair cost will be free only if it is to be detective from normal use.

2. The repair cost will be asked if the breakdwon is caused by following case

①By carelessness of a user

②By natural disasters including fire, earthquake and thunder

③By wrong power setting

④By repair or remodeling of others excluding sigma tech and the purchasing site.

3.The period of possesing parts for repair is 5 years.

①This period count from the date of the discontinued.

Instruction for warranty

(Please read the manual before you use and be careful the followings specially)

①Before you use, you need to be well-informed of how to handle this product.

②Before connecting the power, check the selected voltage is same with the input voltage

③You should use the standard fuse.

④Don't use or contain this in hot or moistful place.

(Operation temperature:0℃~45℃, Operation humidity:10%~85%)

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