Rek®

Compact DC Power Supply

KPS Series

User Manual

Safety Regulations

To avoid electrical shock, non-authorized person of our company is not allowed to open the cabinet.

It is forbidden to use this product for life support system or any other devices with high safety requirements.

we are not responsible for any direct or indirect financial damage might occur when using the power supply.

Warranty

This product is warranted against defects in material and workmanship for a period of one years from date of delivery.

For warranty service, this product must be returned to a service facility designated by our company. Customer shall pay all freight, duty and taxes if the product is back from foreigncountries for repair.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the customer , customer-supplied software or interfacing unauthorized modification or misuse operation outside of the environmental specifications for the product, or improper site preparation and maintenance, installing circuit by the customer or using their own product, changing, deleting, removing or unrecognizing the product model or serial number,accident including but not limited to lightning stroke,water,fire, misuse or neglect.

WARNING

Before plugging into local AC mains, carefully to set the operating voltage select switch according to the AC input Voltage. (115:100-120Vac,230: 200-240Vac)
Do not open the casing of the power supply when it is connected to ac mains.
Do not operate or touch this power supply with wet hands.
Do not use this power supply near water.

CAUTION

Use a grounded 3 pin AC SOURCE.
This unit is for indoor use only.
Do not operate or place this unit in a humid dusty, in direct sunlight location or near any heat source.
Do not block any ventilation openings of the unit.
This unit must be used within the specified rating; regular excessive continuous loading may cause damage to the power supply.

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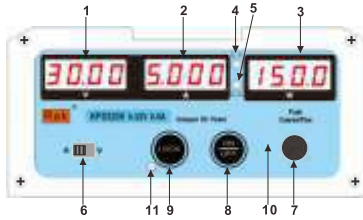
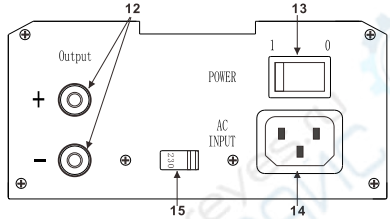
1 Product Features

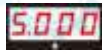
- Controlled by microprocessor (MCU),high cost-effective.
- High power density, smallest and compact
- Aluminum shell,lower EMI
- Using Encoder to set the voltage and current
- High efficiency,up to 88%.
- Low Ripple &Noise :≤30mVp-p
- Output ON/OFF
- Lock switch
- Intuitive output power display
- Soft start without overshoot, protect sensitive device
- Intelligent protection: Output short circuit protection, Tracking Over Voltage protection (OVP), Tracking Over Current Protection (OCP),Over Temperature Protection(OTP)

2 Panel Layout



Left volt-Right Current meter layout



NO:	Name	Shown in diagram or State	Function
1	Volt meter		Display the setting voltage or the actual output voltage
2	Current meter		Display output state:OFF/HOT/ setting current value/ actual output current value
3	power metre		Display actual output power
4	Constant voltage indicator	Show ON/OFF	Constant voltage state
5	Constant current indicator	Show ON/OFF	Constant current state
6	Voltage/Current select switch	 A OR V	Switch to V to adjust voltage Switch to A to adjust current
7	Adjusting Knob		Rotation--increase or decrease Push — swtch focus position
8	ON/OFF		Click — output on or output off Push it for 5 seconds to calibrate output currcnt display,[warnig] user should never do this

9	LOCK		lock/unlock. In the lock state(Lock light is on), any other key will be disabled untill unlock.
10	Buzzer		The buzzer will be beeping at : 1.Lock key is on,any other key being clicked 2.Setting number reached Max or Min 3.Power switch on 4.Overheating
11	Lock light	Turn ON/OFF	Indicate the function of lock
12	Output Terminal		Red-output ‘+’ / Black-output ‘–’
13	Power Switch		Power ON/OFF
14	AC Socket		AC Input Socket
15	Operating voltage Select Switch		Number ″115″:Rated input 110–120VAC Number ″230″:Rated input 200–240VAC

3 Function and Operation

3.1 Select the operating AC

Select the operating voltage carefully according to the input voltage of AC mains . Please set the switch to 115 if the AC mains are 100-120 Vac. The default factory set is 230 Vac input like right picture  .

Warning: If the switch is set to 115, do not plug into 200-230 Vac mains, otherwise the power supply will be damaged.

3.2 Set the Output Voltage

Three steps to set the output voltage. ①Put the adjusting selective switch  to "V";② Click the adjusting knob to select adjust digit; ③ Adjust the knob to set the highlight digit. Click the knob the volt meter display the setting value and the adjustable digit highlight, the highlight will shift from right to left when user clicks the knob continually.

For example: How to set the output voltage to 24. 15V. You can set the four number 2-4-1-5 one by one. At first, click the knob, the rightmost digit of the volt meter highlight, adjust the knob to set the highlight digit to 5, then click the knob again the highlight will shift to left, adjust the knob to set the highlight digit to 1, then set the highlight digit to 4 and 2 in the same way, finally the output voltage is set to 24.15V.

3.3 Set the Output Current

The procedure is same as the voltage setting. But the first step is switching the adjusting selective switch  to"A".

3.4 Turn On or Turn Off Output

When the output is turned off the ammeter highlights“OFF”.Press“ON/OFF” 

,the output turns on .Then click the button again ,the output turns off.

3.5 Lock

Click “Lock”button 

,the lock light turns on, ON/OFF button and adjusting knob are disabled, To cancel the function please click the “Lock”button again and the lock light turns off.

3.6 Calibration Mode

When keeping pressing “ON/OFF”for 5 seconds, the program will enter factory calibration mode , USER SHOULD NEVER DO THIS ! if this mode been triggered, cut the power supply cable immediately! If user found output value is losing control after this situation, please contact us.

4 Protection

4.1 Over Voltage Protection

MCU controls the tracking OVP. OVP value is relevant to the setting voltage. this function protects the appliance which connected to the power supply safely.

When OVP is triggered, MCU shuts down the output and the ammeter highlights “OUP”. Click ON/OFF button to reset the OVP if the over voltage problem has been resolved.

4.2 Over Current Protection

MCU control the tracking OCP. OCP value is relevant to the setting current. This power supply can operate constant current mode, so if the c.c works normally the OCP never be triggered; However if the C.C works abnormally the tracking OCP will protect the appliance which connected to the power supply safely. When OCP is triggered, MCU shuts down the output and ammeter highlights “OCP”. Click ON/OFF button to reset the OCP if the over current problem has been resolved.

4.3 Over Temperature Protection

The MCU monitor the temperature of the power supply ,if the temperature is higher than the special value, MCU shut down the output and ammeter highlights "HOT", it will return to mormal if the sensor get cold.

5 Application

5.1 Series Connection

Several units can be connected in series in order to gain a higher total output voltage. To do so ,the positive DC output of one unit is connected to the negative DC output of the next unit etc.The non-connected positive and negative of the last unit will be the positive and negative of the whole series output, and will have a higher voltage output.

For safety and insulation, it is not allowed to connect an arbitrary number of units in series. The DC output of series system must not be raised higher than 500 V DC.

If units with different nominal current are connected in series, the minimum nominal current of the products is the maximum current of the system.

Only one negative DC output of the series system can be grounded.

5.2 Parallel Connection

Several units which are preferably same type, but at least identical nominal output voltage, can be connected in parallel in order to gain a higher total output current. It is recommended to adjust the output current to the maximum and the output voltage to identical value on every unit.

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