Beisina®



SKD-30500 DC Stabilized Power Supply Product specification

PROGRAMMABLE DC STABILIZED POWER SUPPLY

Version V1 2025

1, Purpose, Method, and Standards

★Purpose:

- \star Power type: High frequency soft switch modular power supply
- ★Applicable standards: JIS, JEC, JEM, JCS, Industrial Safety and Health Regulations

2, Construction selection:

- ★Cabinet structure selection: Cabinet structure
- \star Cooling method: air cooling
- ★ Coating color: Polyurethane coating RAL7032
- ★ Protection level: IP20 (control power IP44)

3, Usage environment:

★Installation location: Indoor installation;

- ★Environmental working temperature: 0 °C to+40 °C; Maximum annual average temperature: 26 °C; Maximum daily average temperature difference: 26 °C.
- ★Relative humidity: 15-85% R;
- ★Altitude: less than 1500 meters;
- ★Usage environment: places without severe vibration and impact, and with a vertical inclination of no more than 5%;
- ★ Seismic resistance: Ground horizontal acceleration of 0.2g; Ground vertical acceleration of 0.1g.

4, Equipment freeze parameters

- ★Communication input: AC220V ± 10% 3-phase 4-wire 47-63Hz
- ★Maximum DC output: DC30V/500A

5, Technical Parameters:

	number of phases	3 phase 4 wire			
import	voltage range	220V±10%			
	frequency	47-63HZ			
output	Voltage setting range	0~30VDC continuous adjustable			
output	Set the current range	0-500ADC is continuously adjustable			
work patte	rn	Constant pressure mode (current limiting)/ constant current mode (pressure limiting)/ constant power mode (switch between two modes of voltage and current stabilization)			
type		Phase-shift soft switching power supply			
		Source effect: $\leq 0.1\%$ rated value ± 1 word			
Stabilization a	ccuracy (compared in the	Time drift: $\leq 0.1\%$ rated value ± 1 character			
range of 0%-10	0% of rated value)	Temperature drift: less than 0.4‰/°C±1 character (within half an hour)			
		Load effect: $\leq 0.5\%$ rated value ± 1 word			
		Source effect: $\leq 0.1\%$ rated value ± 1 word			
Steady flo	w accuracy (compared in	Time drift: $\leq 0.1\%$ rated value ± 1 character			
the range of 0%	-100% of rated value)	Temperature drift: less than 0.4% /°C±1 word (within half an hour)			
		Load effect: $\leq 0.5\%$ rated value ± 1 word			
	Input capacity	16.5KVA			
Power	output power	15KW			
parameters	Maximum input current	52A			
How to op	erate	Touch screen of this machine			
Operation	Settings	Power on and off, voltage and current preset			
communic	ation interface	RS485 (protocol open)			
operate mo	ode	over a long period of time			
Filtering r	or athod	I % FS(VIIIS) I C filter reactor + filter connector)			
Thering in		Running status / fault status / overheating status display			
	Display content	Output current, voltage display,			
Control display	operating function	Output start and stop, preset working time Voltage and current regulation			
1 5	Voltage and current display accuracy	Better than 0.5%			
	Input protection	Power input overvoltage, undervoltage, phase loss, etc.;			
	Output protection	Power output current limiting, voltage limiting, overload, etc.;			
protect	Overtemperature protection valve value	80°C			
	guard mode	Shut down alarm			
	usage mode	24 hours of continuous operation			
reliability	Main components	The IGBT uses imported chip module and is reliable and stable.			
	designed life	More than 20 years			
	power factor	≥0.95			
	productiveness	More than 95% (rated output)			
	Transient response time	≤10ms			
overall	noise	<75dB			
characteristic	Entry and exit modes	The incoming wire is inside the front door of the chassis and the output terminal is inside the front door of the cabinet			
	cooling-down method	forced air cooling			
	levels of protection	IP20, circuit board three protection and whole machine protection treatment			
	insulation strength	Input-output-case: AC2000 V,10mA, 1 minute			
	insulation resistance	Input-output: 220M12 input-case			
	Storage temperature	-25℃~50℃			
ambient	Working humidity	≤90%			
condition	above sea level	≤2000m			
	Use ambient temperature	-20°C~35°C			

Reference dimensions for power supply	Width 550* Depth 580* Height 850mm (for reference only, subject to actual design)
weight	200Kg±15%

6. Operation of Touch Screen

6.1 Understanding of reference interface

This device is turned on by default and enters the manual control mode interface, as shown in Figure 1.

手动控制 自动控	制 关于我们
实际电压 0.0V 9	实际电流 0.0 A
设定电压 0.0V i	设定电流 0.0A
手动	停止



If you need to enter automatic control

, please click to switch to automatic

The control mode interface is shown in Figure 2

	手动	控制	自动	控制	关	于我们	
2005						电压力超色曲电流为红色曲	214
1504							
1003							
501			_				
						单位。	. 8
0	语言	24		48	72	停止	96
	KX AE	实际电压	设定电压	实际电流	设定电流	IT IL	
	工艺	0.0V	0. 0V	0. 0A	0. 0A	状态	



In the automatic control interface, if you need 手动控制 to enter the manual control interface, please click

6.2. Operation under manual control

1). When using manual control, please make sure that you are in the manual control interface, as shown in Figure 1. If not, click

S 步 功 控 制 witch to the manual interface and make sure that the manual status is displayed in the manual interface, as shown in Figure 3

手	动
状	态

graph 3

2). For stable voltage operation, click the box after setting the voltage, input the required voltage, and click the box after setting

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, input the maximum current of the device. Click, at this time, the stop state becomes, and the device

3). For steady flow, click the box after setting the voltage to input the maximum voltage of the device, and click the box after



outputs the required current.

outputs the required voltage.

- 自动
 一月动

 状态
 人、教参

 4). Stop and click.
 At this time, the start
- 6.3. Operation under automatic control

2). Set parameters and click the process setting

1). When using manual control, please en	sure that it is ^{状态} displayed	in the 状态	manual control interface.	If not, click
to switch (switching is not 自动控制	allowed in the running state, plea	se switch after shu	utdown), and then click to e	nter the
automatic control nage as shown in Figure 2				

设 定 工 艺

interface in the automatic control interface, as shown in Figure 4

	分段点时间	分段点电压	分段点电流	
第1分段点	0S	0. 0V	0. 0A	
第2分段点	0S	0. 0V	0. 0A	
第3分段点	0S	0. OV	0. 0A	
第4分段点	0S	0. OV	0. 0A	
第5分段点	0S	0. OV	0. 0A	
第6分段点	0S	0. OV	0. 0A	
第7分段点	0S	0. OV	0. 0A	
第8分段点	08	0. OV	0. 0A	确 定

graph 4



The device will automatically output the required voltage and current according to the user's intention.

If constant voltage operation is required, set the current to maximum. If set according to Figure 5, the working process of this device is as follows:

The device rises from 0V to 200V in 200 seconds, then rises from 200V to 1000V in 100 seconds, then drops from 1000V to 0V in 20 seconds, then rises from 0V to 1800V in 50 seconds, then keeps 1800V unchanged for 40 seconds, and finally stops.

	分段点时间	分段点电压	分段点电流	
第1分段点	2005	200. OV	600. OA	
第2分段点	100S	1000. OV	600. 0A	
第3分段点	20S	0. OV	600. 0A	
第4分段点	50S	1800. 0V	600. 0A	
第5分段点	40S	1800. 0V	600. 0A	
第6分段点	0S	0.0V	0. 0A	
第7分段点	0S	0. 0V	0. 0A	and a star
第8分段点	0S	0. OV	0. 0A	備定

graph 5

If a constant current is required, set the voltage to maximum. If the setting is according to Figure 6, the working process of this device is as follows: use 100 seconds to rise from 0A to 200A, then use 200 seconds to rise from 200A to 500A, then use 50 seconds to fall from 500A to 0A, then use 30 seconds to rise from 0V to 300A, then keep 300A unchanged for 80 seconds, and finally stop.

	分段点时间	分段点电压	分段点电流	
第1分段点	100S	2000. OV	200. OA	
第2分段点	200S	2000. OV	500. OA	
第3分段点	<u>50S</u>	2000. OV	0. 0A	
第4分段点	30S	2000. OV	300. OA	
第5分段点	80S	2000. OV	300. 0A	
第6分段点	0S	0. 0V	0. 0A	
第7分段点	0S	0. 0V	0. 0A	and the same
第8分段点	0S	0. 0V	0. 0A	痈 定

graph 6

Note: When the equipment is working, the process parameters cannot be modified. The equipment must be shut down to modify them.

Note:

- 1. The above parameters are only for reference
- 2. The touch screen interface can be customized according to customer needs.

7. Main circuit electrical schematic diagram



Working princip

The AC input first passes through the input filter circuit (input filter), then is converted to DC via a rectifier circuit. It then enters the power inverter circuit after passing through the input buffer circuit (voltage and current surge suppression circuit). In this stage, circuits for input overvoltage and undervoltage protection are added. When the AC input exceeds or falls below the rated input range, or when there is an input shortage, the power inverter circuit is turned off. After passing through the power inverter circuit, the DC voltage is converted into high-frequency AC voltage. This AC voltage is isolated and stepped down by a transformer to output low-voltage AC voltage. It is then output as stable DC voltage after high-frequency rectification and filtering, supplying power to the load. The main control circuit adjusts the operating state of the switch in the inverter circuit by collecting input voltage and current signals, outputting stable DC voltage; it receives protection circuits, voltage regulation signals, and constant current setting signals to achieve protection and setting of the power supply; it outputs collected output voltage, current values, and power supply operating status signals for display on the microcontroller, touch screen, and status indicator lights