Power-SPIN

1-phase input

Low-Power Programmable DC Power Supply

[2kW, 3.2kW, 6.5kW]

In a Nutshell:

- ✓ Output voltage: 10V up to 1500V;
- ✓ Output current: 3.5A to 240A;
- ✓ Output power: 2kW/3.2kW/6.5kW;
- ✓ Auto-Range: wider voltage and current output range with constant power;
- ✓ Master-Slave parallel or serial of up to 5 identical units;
- ✓ 0.1%+0.1%F.S. and 0.1%+0.2%F.S. accuracy for voltage and current measurement respectively;
- ✓ 20 user programmable sequence files, each support up to 20 steps;
- ✓ 1ms typical transient response, Voltage & current slew rate control;
- ✓ CV / CC priority start (prevents voltage or current overshoot with output ON);
- ✓ Remote sense compensation;
- ✓ Optional analog programming & monitoring interface;
- ✓ ±OVP, ±OCP, ±OPP, OTP, ±LVP, foldback protection, as well as voltage / current limit;
- ✓ Standard LAN, RS232, optional GPIB interface;
- ✓ SCPI and ModBus RTU protocol;
- ✓ TFT color LCD display.

General

POWER-SPIN series DC power supplies provide wider voltage and current output range at full power, this means both low voltage/high current and high voltage/low current devices can be tested using a single power supply. The POWER-SPIN series adopt 2U chassis for 2 kW and 3.2 kW mode, and 4U chassis for 6.5 kW model. The output voltage ranges from 40 V to 1500 V, and output current up to 240 A. Furthermore, POWER-SPIN series allow for master-slave parallel or serial connection of up to 5 identical units to extend the output range.

The POWER-SPIN series provide accurate output, fast transient response, low ripple noise, excellent line and load regulation, fast and precise programmability. With 4.3-inch color TFT screen, full keypad and rotary knob, convenient for benchtop users. In addition, this series offer standard LAN and RS232 interfaces support both SCPI and Modbus protocol, which is ideal for automated test systems. Furthermore, the POWER-SPIN series come standard with user programmable sequence, CV or CC priority start, CV-to-CC or CC-to-CV foldback, etc., to name a few

Applications Matrix

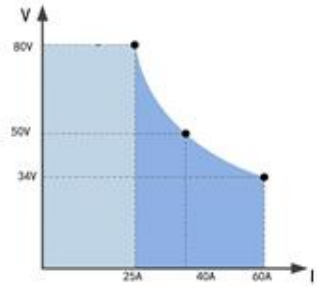
Inverter Test	Superconductors Current Sensors Cables	Energy Storage	Renewable Energies	Automotive electronics

AC Input

All models are provided with an active Power Factor Correction (PFC) circuit and designed for a usage in single-phase 190 VAC ~ 265 VAC input, power factor 0.98, power supply efficiency is larger than 90%.

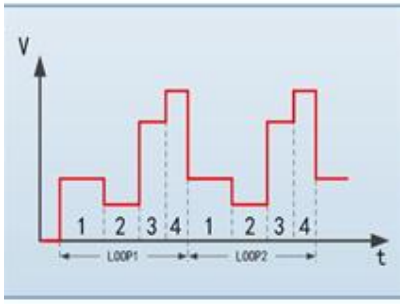
Auto-Range: wide operating region with constant power

POWER-SPIN series power supply provides wide range of output voltage & current within the power rating of the power supply, this means both low voltage/high current and high voltage/low current DUTs can be tested using a single supply avoiding the need for multiple power supplies.



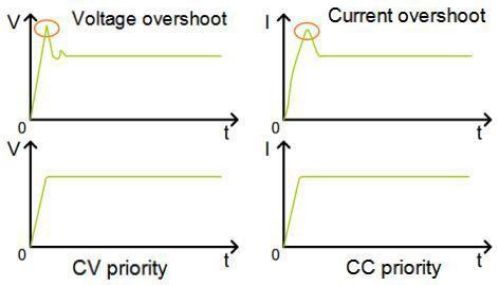
User programmable sequence function

All models provide users with a programmable sequence function, which can simulate power supply interruptions, instantaneous drops, and other voltage and current changes. The sequence feature allows users to program a list of steps to the power supply's internal memory and execute them. A total of 100 steps can be allocated to each internal memory location, up to a maximum of 10 locations (sequences). The test sequence can be programmed locally through the keypad and rotary knob. Test sequences can be linked, as well as configured for single or repeated execution. Each steps' settings include voltage current, duration, the duration time range is 1ms...86400 s



CV / CC Priority

When power supply is connected to an inductive or capacitive load, it will cause voltage or current overshoot, which may trigger the protection of the device under test, or even cause the device under test to be damaged in severe cases. This series power supply provides CC priority and CV priority function, which forces the power supply to operate in CC or CV mode at the moment the output is turned on, effectively avoids the current or voltage overshoot resulted from capacitive or inductive load.



Optional analogue programming and monitoring interface

In addition to front panel and remote interface control, there is a galvanically isolated analogue interface terminal, located on the rear of the device. It offers analogue inputs to set voltage, current from 0...100% through control voltages of 0 V...10 V or 0 V...5 V. To monitor the output voltage and current, there are analogue outputs with 0 V...10 V or 0 V...5 V. Also, several inputs and outputs are available for controlling and monitoring the device status. The controlling speed of analogue programming is 1000 points per second.

Protection

For protection of the equipment connected, the series provide programmable protection functions such as OVP, OCP, OPP and LVP. Moreover, there are built-in hardware protection function OTP. If a protection is triggered, the DC output will be shut off immediately and a status signal will be prompt on the display and via the interfaces. Similarly, fold-back protection is used to disable the output when a transition is made between the CC and CV operating modes. The DC output will be shut off and locked in fold-back mode after a specified delay if the power supply transitions into CV or CC mode, depending on the fold-back mode settings. This feature is particularly useful for protecting current or voltage sensitive loads.

Digital interfaces

All models feature two galvanically isolated digital interfaces by default, these are standard LAN and RS232 (optional GPIB interface). LAN and RS232 can be used to control and monitor the devices either with SCPI language commands or ModBus RTU protocol, while with GPIB only SCPI is supported.

Master-slave parallel or serial operation

The POWER-SPIN series support master-slave parallel or series operation of up to 5 identical units. Parallel / series operation expands the output range of the power supply, greatly enhances the application area of the POWER-SPIN power supply. Allowed maximum output voltage is 600V for series operation. Parallel and serial operation cannot be mixed. When in serial operation, please plug out all current sharing cable, otherwise the power supply may be damaged.

Control software

The series provide a control software for Windows PCs, which can read test data, generate images, export reports, print reports, etc. in real time, it is convenient for customers to use.

Options

Digital interface modules for GPIB
Automotive waveform
Analogue programming and monitoring interface
Anti-backflow current module

Overview

✓ Not all the powers and voltage/current ranges are listed below

Voltage	Part Number	Current	Power	Voltage	Part Number	Current	Power
40V	PS-S-AR-02-V040-A120	120A	2kW	50V	PS-S-AR-02-V050-A110	110A	2kW
	PS-S-AR-3.2-V040-A120	120A	3.2kW		PS-S-AR-3.2-V050-A110	110A	3.2kW
	PS-S-AR-6.5-V040-A240	240A	6.5kW		PS-S-AR-6.5-V050-A220	220A	6.5kW
Voltage	Part Number	Current	Power	Voltage	Part Number	Current	Power
80V	PS-S-AR-02-V080-A60	60A	2kW	120V	PS-S-AR-02-V120-A040	40A	2kW
	PS-S-AR-3.2-V080-A060	60A	3.2kW		PS-S-AR-3.2-V120-A040	40A	3.2kW
	PS-S-AR-6.5-V080-A120	120A	6.5kW		PS-S-AR-6.5-V120-A080	80A	6.5kW
Voltage	Part Number	Current	Power	Voltage	Part Number	Current	Power
160V	PS-S-AR-02-V0160-A030	30A	2kW	300V	PS-S-AR-02-V300-A016	16A	2kW
	PS-S-AR-3.2-V0160-A060	60A	3.2kW		PS-S-AR-3.2-V300-A016	16A	3.2kW
	PS-S-AR-6.5-V0160-A060	60A	6.5kW		PS-S-AR-6.5-V300-A032	32A	6.5kW
Voltage	Part Number	Current	Power	Voltage	Part Number	Current	Power
400V	PS-S-AR-02-V0400-A012	12A	2kW	600V	PS-S-AR-02-V600-A008	8A	2kW
	PS-S-AR-3.2-V0400-A012	12A	3.2kW		PS-S-AR-3.2-V600-A008	8A	3.2kW
	PS-S-AR-6.5-V0400-A024	24A	6.5kW		PS-S-AR-6.5-V600-A016	16A	6.5kW
Voltage	Part Number	Current	Power	Voltage	Part Number	Current	Power
800V	PS-S-AR-02-V0800-A008	8A	2kW	1000V	PS-S-AR-02-V1000-A005	5A	2Kw
	PS-S-AR-3.2-V0800-A008	8A	3.2kW		PS-S-AR-3.2-V1000-A005	5A	3.2Kw
	PS-S-AR-6.5-V0800-A016	16A	6.5kW		PS-S-AR-6.5-V1000-A010	10A	6.5Kw
Voltage	Part Number	Current	Power	Voltage	Part Number	Current	Power
1200V	PS-S-AR-02-V1200-A005	5A	2kW	1500V	PS-S-AR-02-V1500-A03.5	3.5A	2kW
	PS-S-AR-3.5-V1200-A005	5A	3.2kW		PS-S-AR-3.5-V1500-A03.5	3.5A	3.2kW
	PS-S-AR-6.5-V1200-A010	10A	6.5kW		PS-S-AR-6.5-V1500-A007	7A	6.5kW

General Specifications

✓ Not all the powers and voltage/current ranges are listed below

Model	PS-S-AR-02-V040-A120	PS-S-AR-02-V050-A110	PS-S-AR-02-V080-A060	PS-S-AR-02-V120-A040	PS-S-AR-02-V160-A030	PS-S-AR-02-V300-A016
Voltage	0～40V	0～50V	0～80V	0～120V	0～160V	0～300V
Current	0～120A	0～110A	0～60A	0～40A	0～30A	0～16A
Power	2000W					
Model	PS-S-AR-3.2-V040-A120	PS-S-AR-3.2-V050-A110	PS-S-AR-3.2-V080-A060	PS-S-AR-3.2-V120-A040	PS-S-AR-3.2-V160-A030	PS-S-AR-3.2-V300-A016
Voltage	0～40V	0～50V	0～80V	0～120V	0～160V	0～300V
Current	0～120A	0～110A	0～60A	0～40A	0～30A	0～16A
Power	3200W					
Model	PS-S-AR-6.5-V040-A240	PS-S-AR-6.5-V050-A220	PS-S-AR-6.5-V080-A120	PS-S-AR-6.5-V120-A080	PS-S-AR-6.5-V160-A060	PS-S-AR-6.5-V300-A032
Voltage	0～40V	0～50V	0～80V	0～120V	0～160V	0～300V
Current	0～240A	0～220A	0～120A	0～80A	0～60A	0～32A
Power	6500W					
Voltage programming						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current programming						
Resolution	16Bits					
Accuracy	0.1%+0.3%F.S.		0.1%+0.2% F.S.			
External analog programming						
Control voltage	0～5V or 0～10V corresponds to 0～100%F.S.					
Voltage accuracy	0.2%F.S.					
Current accuracy	0.5%F.S.					
Analog output						
Output voltage	0～100%F.S. corresponds to 0～10V.					
Voltage accuracy	0.5%F.S.					
Current accuracy	0.5%F.S.					
Line regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load regulation						
Voltage	0.01%+0.05%F.S.		0.01%+0.01%F.S.			
Current	0.02%+0.1%F.S.					
Voltage measurement						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					

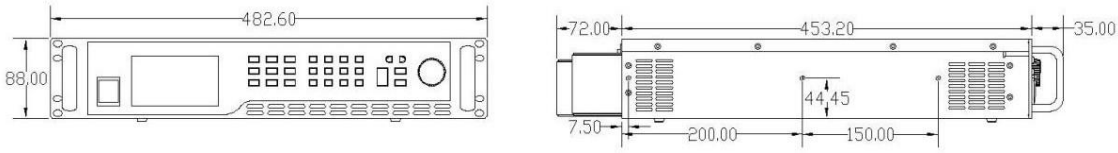
Current measurement						
Resolution	16Bits					
Accuracy	0.1%+0.3%F.S.		0.1%+0.2%F.S.			
Ripple noise						
Ripple Vpp	60mV	70mV	80mV	80mV	100mV	100mV
Ripple Vrms	20mV	20mV	20mV	20mV	40mV	40mV
Rise slew rate						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP Setting						
Range	0～110%F.S.					
Accuracy	1%F.S.					
Transient	Typical 1ms					
Efficiency	0.9(Typical)					
Parallel/Serial	Support master-slave parallel and serial operation					
Communication	RS232 and LAN					
AC input	190VAC～265VAC, 47Hz～63Hz, PF: 0.98(Typical)					
Operation temp	0℃～40℃					
Storage temp	-20℃～70℃					
Altitude	＜ 2000m					
Dimension	430(W)×88(H)×453(D)mm (2kW&3.2kW model); 430(W)×177(H)×503(D)mm (6.5kW model)					
Weight	15kg(2kW&3.2kW model); 29kg(6.5kW model)					

Part Number	PS-S-AR-02-V400-A012	PS-S-AR-02-V600-A008	PS-S-AR-02-V800-A008	PS-S-AR-02-V1000-A005	PS-S-AR-02-V1200-A005	PS-S-AR-02-V1500-A03.5
Voltage	0～400V	0～600V	0～800V	0～1000V	0～1200V	0～1500V
Current	0～12A	0～8A	0～8A	0～5A	0～5A	0～3.5A
Power	2000W					
Model	PS-S-AR-3.2-V400-A012	PS-S-AR-3.2-V600-A008	PS-S-AR-3.2-V800-A008	PS-S-AR-3.2-V1000-A005	PS-S-AR-3.2-V1200-A005	PS-S-AR-3.2-V1500-A03.5
Voltage	0～400V	0～600V	0～800V	0～1000V	0～1200V	0～1500V
Current	0～12A	0～8A	0～8A	0～5A	0～5A	0～3.5A
Power	3200W					
Model	PS-S-AR-6.5-V400-A024	PS-S-AR-6.5-V600-A016	PS-S-AR-6.5-V800-A016	PS-S-AR-6.5-V1000-A010	PS-S-AR-6.5-V1200-A010	PS-S-AR-6.5-V1500-A007
Voltage	0～400V	0～600V	0～800V	0～1000V	0～1200V	0～1500V
Current	0～24A	0～16A	0～16A	0～10A	0～10A	0～7A
Power	6500W					
Voltage programming						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current programming						
Resolution	16Bits					
Accuracy	0.1%+0.2% F.S.					
External analog programming						
Control voltage	0～5V or 0～10V corresponds to 0～100%F.S.					
Voltage accuracy	0.2%F.S.					
Current accuracy	0.5%F.S.					
Analog output						
Output voltage	0～100%F.S. corresponds to 0～10V.					
Voltage accuracy	0.5%F.S.					
Current accuracy	0.5%F.S.					
Line regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.01%F.S.					
Load regulation						
Voltage	0.01%+0.01%F.S.					
Current	0.02%+0.1%F.S.					
Voltage measurement						
Resolution	16Bits					
Accuracy	0.1%+0.1%F.S.					
Current measurement						
Resolution	16Bits					
Accuracy	0.1%+0.2%F.S.					

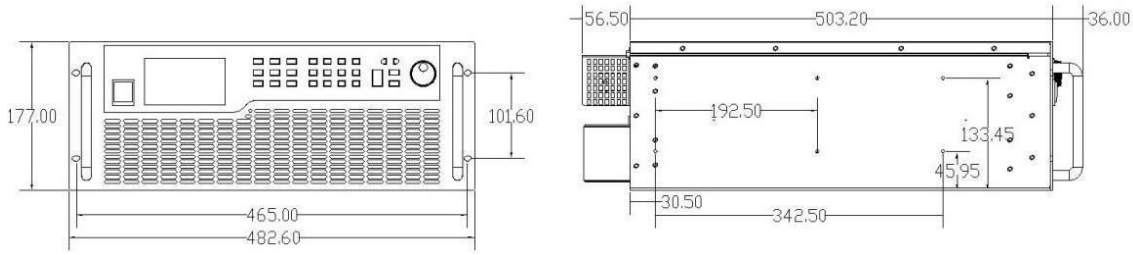
Ripple noise						
Ripple Vpp	300mV	300mV	500mV	450mV	500mV	700mV
Ripple Vrms	60mV	60mV	80mV	80mV	120mV	150mV
Rise slew rate						
Voltage	5V/ms(max)					
Current	2A/ms(max)					
OVP Setting						
Range	0～110%F.S.					
Accuracy	1%F.S.					
Transient	Typical 1ms					
Efficiency	0.9 (Typical)					
Parallel/Serial	Support master-slave parallel and serial operation					
Communication	RS232 and LAN					
AC input	190VAC～265VAC, 47Hz～63Hz, PF: 0.98(Typical)					
Operation temp	0℃～40℃					
Storage temp	-20℃～70℃					
Altitude	＜2000m					
Dimension	430(W)×88(H)×453(D)mm(2kW&3.2kW model); 430(W)×177(H)×503(D)mm(6.5kW model)					
Weight	15kg(2kW&3.2kW model); 29kg(6.5kW model)					

Dimensions

2kW, 3.2kW model dimensions



6.5kW model dimensions



Optional Accessories

Item	Suffix Part Number	Notes
GPIB interface	GB	RS232 to GPIB upon request
Composite signal port	CS	
Anti-backflow current	BCK	
Automobile waveform test	AWT	

High current test cables

Specification	W1	W2	W3	W4	W5	W6	W7
Max voltage	750V						
Max current	10A	60A	100A	200A	200A	300A	400A
Terminal	M8/Alligator	M8/M8	M8/M8	M8/M8	M8/M8	M8/M8	M10/M10
Length	~1.5m	~1.5m	~2m	~2m	~4m	~2m	~2m
Shape