

## SPST Series Linked 3-Phase AC Power Supply System



■ High Efficiency

■ High Precision

■ High Stability

# SPST Series Linked 3-Phase AC Power Supply System



(9U)1800W~4500W



(17U)6000W



(17U)9000W~15000W

Output		Output Mode	Model	Size	Standard Interface	Optional Information	Certificates
Voltage	Power						
150V/300V	1800W	Single/Three Phase	SPST300VAC1800W-2-9	9U <sup>①</sup>	RS232/RS485/USB	(1)	CE
150V/300V	3000W	Single/Three Phase	SPST300VAC3000W-2-9	9U <sup>①</sup>	RS232/RS485/USB	(1)	CE
150V/300V	4500W	Single/Three Phase	SPST300VAC4500W-2-9	9U <sup>①</sup>	RS232/RS485/USB	(1)	CE
150V/300V	6000W	Single/Three Phase	SPST300VAC6000W-3-17	17U <sup>②</sup>	RS232/RS485/USB	(2) (3)	CE
150V/300V	9000W	Single/Three Phase	SPST300VAC9000W-4-17	17U <sup>③</sup>	RS232/RS485/USB	(2) (3)	CE
150V/300V	12000W	Single/Three Phase	SPST300VAC12000W-4-17	17U <sup>③</sup>	RS232/RS485/USB	(2) (3)	CE
150V/300V	15000W	Single/Three Phase	SPST300VAC15000W-4-17	17U <sup>③</sup>	RS232/RS485/USB	(2) (3)	CE

\*This formula is the standard cabinet for SP-300 series 2U/3U/4U model. It is available to select cabinet with different specification according to exact situation. Detail please consults our area manager.

The output of the three phase power supply can be connected in two ways, including Wye connection and Delta connection. In the Delta connection mode, the output voltage can reach 520V.

## Dimensions & Weight



① 540.0x400.0x640.0 mm & 88.7kg



② 560.0x754.0x700.0 mm & 134kg



③ 560.0x754.0x700.0mm & 157kg

## Optional Information

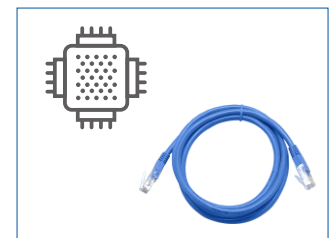
(1) LAN & GPIB interface card & cables



(2) GPIB interface card & cable



(3) LAN interface card & cable



## 产品主要特点

- Large touch color screen, possess complete functions and easy to operate.
- AC+DC mixed or independent output mode for voltage DC offset simulation.
- Capable of setting output slope/phase angle, 0~359.9°.
- Output frequency 15~1000Hz, capable of setting output slope of voltage and frequency.
- High output crest factor could satisfy surge tests requirements.
- Multiple current measuring level selection. Increase measurement accuracy.
- Standard USB data interface, support CSV file waveform import.
- OCP/OVP/OPP/OTP/Short circuit protection.
- Built-in power meter, which is capable of measuring 15 electrical parameters per phase, including voltage, current, power, etc.
- With reverse current protection to avoid current flowing backward.
- Capable of setting voltage and current output restriction, support for constant current output mode.

## Panel Introduction

### 0.6 - 1.5kVA

- ① Power Switch (Up), USB Interface (Down)
- ② Color Touch Screen
- ③ Multifunctional Keys
- ④ Numeric and Functional Keys

#### ■ Front Panel Introduction



### 2 - 5kVA

- ① Power Switch (Up), USB Interface (Down)
- ② Color Touch Screen
- ③ Multifunctional Keys
- ④ Numeric and Functional Keys

#### ■ Front Panel Introduction

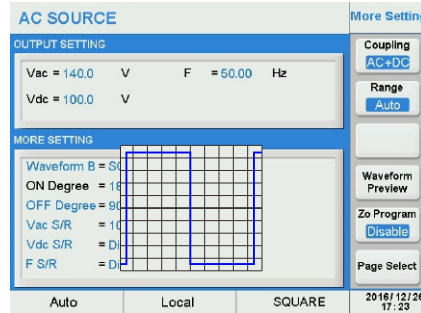
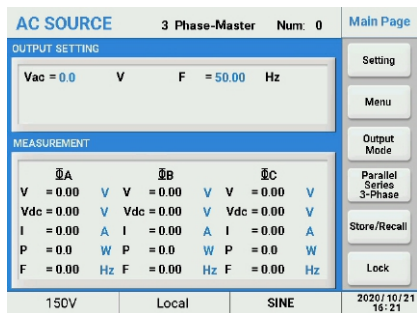


# SPST Series Linked 3-Phase AC Power Supply System

## Function Introduction

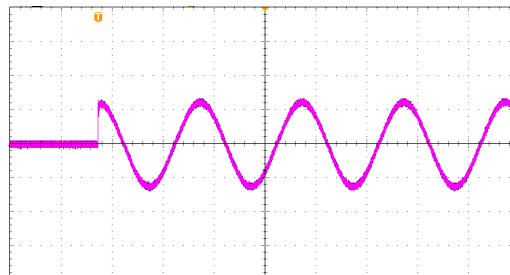
### Graphical User Interface

The large color touch screen provides simple and fast operation for customers, real-time update of display output data and power status, and graphical display makes it more intuitive.



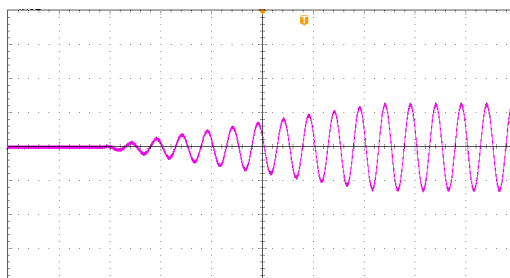
### Settable ON/OFF Phase Angle of Output Waveform

This series of AC power supply can set the ON phase and OFF phase of sinusoidal output waveform, suitable for the output test of switching power supply. Set the ON angle to 90 degrees for surge current testing, the power supply will show the measured value of surge current. Users can set when start to measure the surge current and the duration of the measurement.



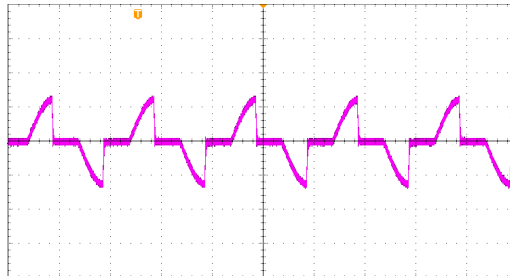
### Slew Rate Setting For Voltage and Frequency

This series AC power supply let users set the slew rate of voltage and frequency, in such application in order to reduce the inrush current during motor or compressor startup.



## Triac Dimmer Function

This series AC power supply built-in triac dimmer function, which is used to do dimming and speed regulating test for lamp or electric motor to ensure the products work well both in R&D and production testing.



## Power Line Disturbance Simulation

This series AC power supply provides powerful function to simulate all kinds of power line disturbance conditions such as cycle dropout, transient spike, brown out and etc. This feature make this series AC power supply ideal for R&D labs, universities and certification labs.

### LIST Mode

The screenshot shows the 'AC SOURCE' control panel in 'List Mode'. The 'TEST' section includes:  
Step 1/ Step 3  
Vac start = 100.0 V Base = Cycle  
Vac end = 100.0 V Cycle = 10.0  
F start = 50.00 Hz Count = 10  
F end = 100.00 Hz Trigger = Cont  
Vdc start = 0.0 V  
Vdc end = 0.0 V  
Degree = 9.0 °  
Waveform = Waveform A  
Buttons for 'Repeat', 'Last Step', 'Next Step', 'Step' (set to 3), 'Save', and 'Page Select' are visible. The bottom status bar shows '150V Local SINE 2016/12/28 09:36'.

The oscilloscope displays a simulated power line disturbance waveform, showing a period of zero voltage (cycle dropout) followed by a transient spike and a period of high-frequency oscillation.

### STEP Mode

The screenshot shows the 'AC SOURCE' control panel in 'Step Mode'. The 'STEP MODE SETTING' section includes:  
Vac = 50.0 V  
ΔVac = 1.0 V  
Vdc = 20.0 V  
ΔVdc = 5.0 V  
F = 15.00 Hz  
ΔF = 5.00 Hz  
Degree = 0.0 °  
Count = 3  
Waveform = Waveform A  
Dwell = 1000.0 ms  
Power Sweep = Disable  
Buttons for 'Save' and 'Page Select' are visible. The bottom status bar shows '150V Local STOP 2016/12/28 13:24'.

The oscilloscope displays a stepped AC signal, where the amplitude of the sine wave increases in discrete steps over time.



# SPST Series Linked 3-Phase AC Power Supply System

## PULSE Mode

**AC SOURCE** Pulse Mode

**PULSE MODE SETTING**

Vac = 50.0 V

Vdc = 30.0 V

F = 15.00 Hz

Duty Cycle = 50.0 %

Degree = 0.0 °

Waveform = Waveform A

Period = 100.0 ms

Count = 3

Start = 0.0 ms

Save

Page Select

150V    Local    STOP    2016/12/28 13:09

## Voltage Sags/Voltage Spikes

**AC SOURCE** Transient

**TRANSIENT SETTING**

Trans-Start = 18.0 ms

Trans-Volt = 424.2 V

Trans-Time = 2.0 ms

Trans-Count = 9999

Save

Page Select

2016/12/29 11:43

**Voltage Sags**

**Voltage Spikes**

## File Save and Recall Via The USB Interface

The user can save the screenshot via the USB interface in the front panel. The user can import a CSV file via the USB interface to generate waveform output.

**AC SOURCE** Main Page

**OUTPUT SETTING**

Vac = 0.0 V    F = 0.00 Hz

**USB**

**MEASUREMENT**

V = 0.00

Vac = 0.00

Vdc = 0.00

Vpk = 0.00

VAR = 0.0

Setting

Menu

Output Mode

Phase

Store/Recall

Lock

150V    Local    SINE    2080/01/10 04:07

Flash Disk is Ready!  
 Press ENTER Button To Save!  
 Press 2 Button To Read License!  
 Press 3 Button To Write PLUSE File!  
 Press 4 Button To Read PLUSE File!  
 Press 5 Button To Write STEP File!  
 Press 6 Button To Read STEP File!  
 Press 7 Button To Write List File!  
 Press 8 Button To Read List File!

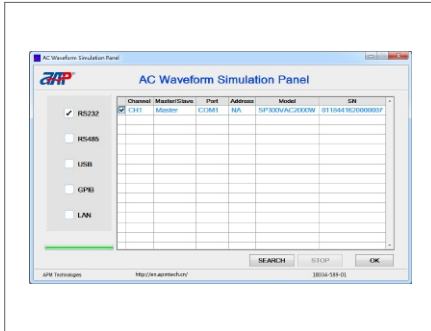
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Unit	Last Step	Total Step	Step	Mode	Stop	Pages	Degree	Waveform	Vac(V)	Vdc(V)	Vpk(V)	Vavg(V)	Vrms(V)	Vbase(V)	Cycle	Time(μs)		
2	24	23	9	1	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
3	24	23	9	2	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
4	24	23	9	3	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
5	24	23	9	4	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
6	24	23	9	5	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
7	24	23	9	6	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
8	24	23	9	7	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
9	24	23	9	8	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
10	24	23	9	9	Cont	10	9	A	100	100	50	100	0	0	0	Cycle	10		
11																			
12																			

# SPST Series Linked 3-Phase AC Power Supply System

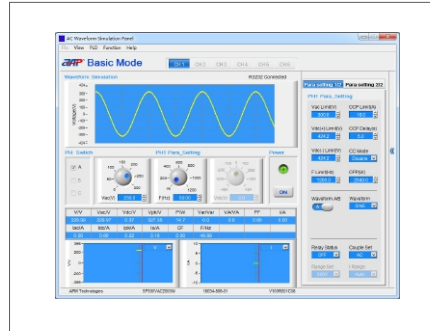
## Monitoring Software

AC Waveform Simulation Panel is a graphical user interface that provides extraordinary capabilities and convenience by delivering control of the unit remotely, which covers all functions of panel operation.

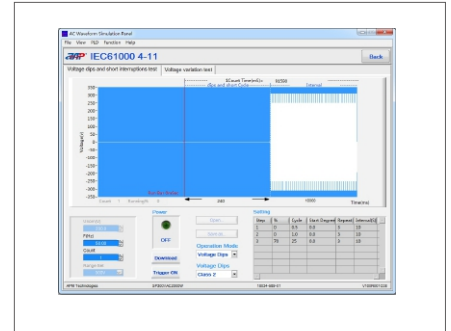
Login Interface



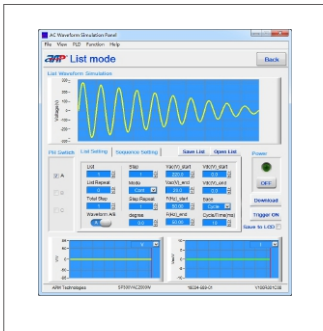
Basic mode(Main interface)



IEC61000 4-11 interface



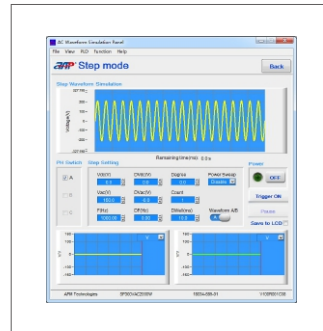
List mode interface



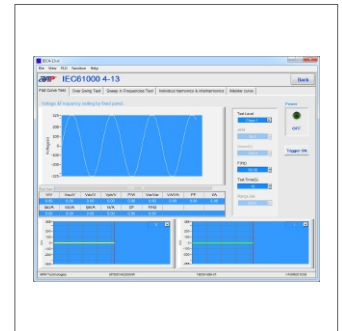
Pulse mode interface



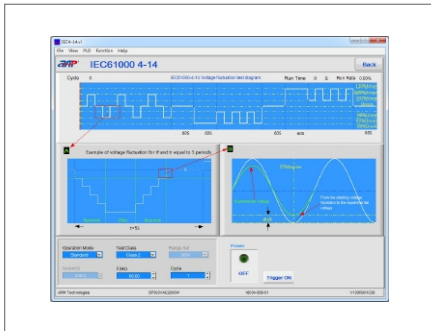
Step mode interface



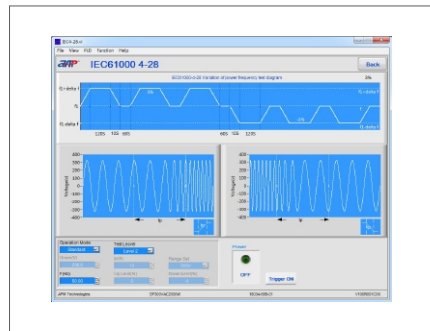
IEC61000 4-13 interface



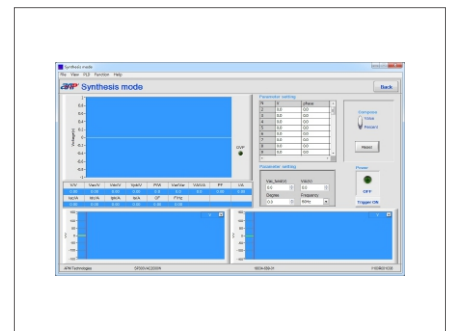
IEC61000 4-14 interface



IEC61000 4-28 interface



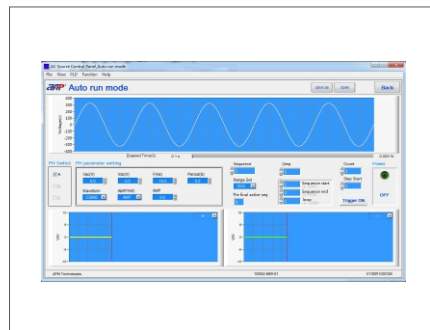
Synthesis mode interface



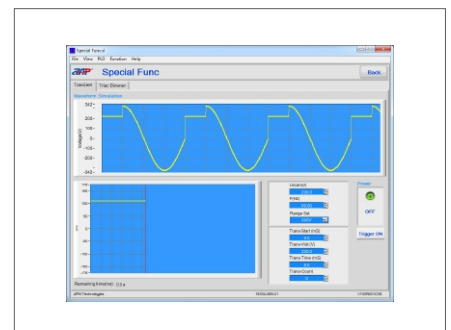
Harmonics Measure mode interface



Auto run mode interface



Special Func interface







# SPST Series Linked 3-Phase AC Power Supply System

MODEL		SPST300VAC1800W-2-9	SPST300VAC3000W-2-9	SPST300VAC4500W-2-9
Frequency	Range	15~1000Hz		
	Resolution	0.1Hz(15.0~99.9Hz),1Hz(100~1000Hz)		
	Accuracy	0.1% of setting		
Current <sup>[2]</sup> (r.m.s)	Range	H 0.15A~5.6A	H 0.3A~9.2A	H 0.3A~13.8A
		L 0.1A~3A	L 0.1A~3A	L 0.1A~3A
	Resolution	0.01A		
Accuracy	0.4%+1.0%F.S.			
Current <sup>[2]</sup> (Peak)	Range	0A~32.4A	0A~55.2A	0A~82.8A
	Resolution	0.01A		
	Accuracy	0.4%+1.5%F.S.		
Power	Range	0~612W	0~1020W	0~1530W
	Resolution	0.1W		
	Accuracy	0.4% of setting +0.3%F.S. at PF>0.2, Voltage >5V		
Power Apparent(VA)	Range	0~612VA	0~1020VA	0~1530VA
	Resolution	0.1VA		
	Accuracy	Voltage*I <sub>rms</sub> , Calculated value		
Power Resistive (VAR)	Range	0~612VAR	0~1020VAR	0~1530VAR
	Resolution	0.1VAR		
	Accuracy	$\sqrt{(VA)^2 - (W)^2}$ , Calculated value		
Power Factor (PF)	Range	0.00~1.00		
	Resolution	0.01		
	Accuracy	W/VA, Calculated value		
Harmonic	Range	Not Support		
<b>Extra Function</b>				
Slew Rate	Range	AC Voltage 0.001~1200.000V/ms and Disable		
		DC Voltage 0.001~1000.000V/ms and Disable		
		Frequency 0.001~1600.000Hz/ms and Disable		
Remote Sense	Range	5V(rms), Max. Total power less than rated power		
Calibration	Firmware-based calibration through the digital interface or front panel display			
Test Function	Not Support			
Graphic Display	4.3" Color touch LCD			
Operation Key Feature	Soft key, Numeric key, Rotary Knob, USB port for transfer and upgrading firmware			
Rack mount Handles	Yes			
FAN	Temperature Control			
Protection Circuits	OCP, OVP, OPP, OTP, RCP, PRI_LUVP, PRI_OVP, PRI_OTP, PRI_OCP, USB_OCP			
Interface	Standard USB, RS-485, RS-232, GPIB & LAN is Optional			
<b>Environmental</b>				
Operating Temperature	0°C~40°C			
Storage Temperature	-40°C~85°C			
Altitude	2000m			
Relative Humidity	5%~95%, non-condensing			
Temperature Coefficient	100ppm/°C at Voltage, 300ppm/°C at Current,100ppm/°C at Frequency			
<b>Mechanical</b>				
Dimensions(WxHxD)	540.0x400.0x640.0 mm			
Package Dimensions (WxHxD)	660.0x710.0x760.0 mm			
Unit Weight	88.7kg			
Shipping Weight	108.7kg			
<b>Regulatory Compliance</b>				
CE Mark	Installation Overvoltage Category II;Class II equipment;indoor use only.			

[1] In single phase mode, the current shall be reduced to 90% for the consideration of current sharing.

[2] The tolerance will change slightly in high frequency condition;

All specifications are subject to change without notice.

# SPST Series Linked 3-Phase AC Power Supply System

MODEL	SPST300VAC6000W-3-17	SPST300VAC9000W-4-17	SPST300VAC12000W-4-17	SPST300VAC15000W-4-17	
<b>Input</b>					
Voltage	190~265VAC				
Frequency	47~63Hz				
Phase	3 Phase, 4Wire+Groud/Y Connect				
Max.Current	42A	60A	75A	90A	
Power Factor at 220VAC Input,Full Load	≥ 0.99 Active PFC	≥ 0.98 Active PFC	≥ 0.99 Active PFC	≥ 0.99 Active PFC	
Efficiency	>87% (Peak) >86% at 220VAC,50Hz input/230VAC,50Hz output, Full Load	>86% (Peak) >85% at 220VAC,50Hz input/230VAC,50Hz output, Full Load	>87% (Peak) >86% at 220VAC,50Hz input/230VAC,50Hz output, Full Load	>87% (Peak) >86% at 220VAC,50Hz input/230VAC,50Hz output, Full Load	
<b>3-Phase Output Mode(Per Phase)</b>					
AC Power(Total)	6000VA	9000VA	12000VA	15000VA	
AC Power(Per Phase)	2000VA	3000VA	4000VA	5000VA	
Max.Current (r.m.s)	0~150V(L)	16A	27.6A	32A	
	0~300V(H)	8A	13.8A	16A	
Max.Current (Peak)	0~150V(L)	80A	165.6A	160A	
	0~300V(H)	40A	82.8A	80A	
<b>1-Phase Output Mode</b>					
AC Power(Total) <sup>1)</sup>	5400VA	8100VA	10800VA	13500VA	
Max.Current (r.m.s)	0~150V(L)	43.2A	74.52A	86.4A	
	0~300V(H)	21.6A	37.26A	43.2A	
Max.Current (Peak)	0~150V(L)	216A	447.12A	432A	
	0~300V(H)	108A	223.56A	216A	
DC Power (Per Phase)	5400W	8100W	10800W	13500W	
Max.Current (Total)	L 30.51A	L 52.92A	L 61A	L 88A	
	H 15.26A	H 26.46A	H 30.51A	H 44A	
<b>3-Phase Output Mode(Per Phase)</b>					
Total Harmonic Distortion (THD)	<0.5% (Resistive Load) at 15.0~70.0Hz and output voltage within the 80~140VAC at Low Range or the 160~280VAC at High Range; <1% (Resistive Load) at 70.1~500Hz and output voltage within the 80~140VAC at Low Range or the 160~280VAC at High Range; <1% (Resistive Load) at 501~1000Hz and output voltage within the 100~140VAC at Low Range or the 160~280VAC at High Range;				
Crest Factor(CF)	≤5	≤6	≤5	≤4	
Load Regulation	±0.2%F.S. (Resistive Load) at 15~100Hz ±0.5%F.S. (Resistive Load) at >100Hz				
Line Regulation	± 0.1V				
Voltage(AC) (L-N)	Range	0~300VAC, 150V/300V/Auto Mode			
	Resolution	0.1V			
	Accuracy	0.2% of setting +0.4%F.S at Voltage>3V			
Phase Angle (Starting /Ending)	Range	0~359.9°			
	Resolution	0.1°			
	Accuracy	± 1° @45~65Hz			
	Range	0~424VDC			
Voltage(DC)	Resolution	0.1V			
	Accuracy	0.3% of setting +0.4%F.S at Voltage>3V			
	DC Power	2000W	3000W	4000W	5000W
		Max.Current	L 11.3A H 5.65A	L 19.6A H 9.8A	L 22.6A H 11.3A
	Ripple&Noise (Peak)	L <700mVrms @Bandwidth 20Hz to 1MHz			H <1100mVrms @Bandwidth 20Hz to 1MHz
	Ripple&Noise (r.m.s)	<4000mVp-p @Bandwidth 20Hz to 1MHz			
Current CC Fold Mode	Resolution	0.01A			
	Accuracy	2.0% of setting +1.0%F.S.			
	Response Time	<1400ms			
Frequency	Range	15~1000Hz			
	Resolution	0.1Hz(15.0~99.9Hz),1Hz(100~1000Hz)			
	Accuracy	0.03% of setting			
Programmable Output Impedance	Not Support				
Harmonic & Interharmonics Simulation	Not Support				
<b>Power Meter Function(Per Phase)</b>					
Voltage	Range	AC 0~300VAC DC 0~424VDC			
	Resolution	0.1V			
	Accuracy	0.2% of setting +0.4%F.S. (Peak: 0.6% of setting +1%F.S.)			

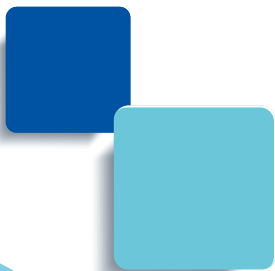
# SPST Series Linked 3-Phase AC Power Supply System

MODEL		SPST300VAC6000W-3-17	SPST300VAC9000W-4-17	SPST300VAC12000W-4-17	SPST300VAC15000W-4-17
Frequency	Range	15~1000Hz			
	Resolution	0.1Hz(15.0~99.9Hz),1Hz(100~1000Hz)			
	Accuracy	0.1% of setting			
Current <sup>[2]</sup> (r.m.s)	Range	H 0.15A~20A	H 0.3A~27.6A	H 0.3A~32A	H 0.3A~46A
		M -	M 0.2A~20A	M 0.2A~20A	M 0.2A~20A
		L 0.1A~5A	L 0.1A~5A	L 0.1A~5A	L 0.1A~5A
		mA 0.02A~1.5A	mA 0.02A~1.5A	mA 0.02A~1.5A	mA 0.02A~1.5A
	Resolution	0.01A			
Accuracy	0.4%+1.0%F.S.				
Current <sup>[2]</sup> (Peak)	Range	0A~81.5A	0A~168.6A	0A~163A	0A~188A
	Resolution	0.01A			
	Accuracy	0.4%+1.5%F.S.			
Power	Range	0~2040W	0~3060W	0~4080W	0~5100W
	Resolution	0.1W			
	Accuracy	0.4% of setting +0.3%F.S. at PF>0.2, Voltage >5V			
Power Apparent(VA)	Range	0~2040VA	0~3060VA	0~4080VA	0~5100VA
	Resolution	0.1VA			
	Accuracy	Voltage*Irms, Calculated value			
Power Resistive (VAR)	Range	0~2040VAR	0~3060VAR	0~4080VAR	0~5100VAR
	Resolution	0.1VAR			
	Accuracy	$\sqrt{(VA)^2-(W)^2}$ , Calculated value			
Power Factor (PF)	Range	0.00~1.00			
	Resolution	0.01			
	Accuracy	W/VA, Calculated value			
Harmonic	Range	Not Support			
<b>Extra Function</b>					
Slew Rate	Range	AC Voltage 0.001~1200.000V/ms and Disable			
		DC Voltage 0.001~1000.000V/ms and Disable			
		Frequency 0.001~1600.000Hz/ms and Disable			
Remote Sense	Range	5V(rms), Max. Total power less than rated power			
Calibration	Firmware-based calibration through the digital interface or front panel display				
Test Function	Not Support				
Graphic Display	5.6" Color touch LCD				
Operation Key Feature	Soft key, Numeric key, Rotary Knob, USB port for transfer and upgrading firmware				
Rack mount Handles	Yes				
FAN	Temperature Control				
Protection Circuits	OCP, OVP, OPP, OTP, RCP, PRI_UVP, PRI_OVP, PRI_OTP, PRI_OCP, USB_OCP				
Interface	Standard USB, RS-485, RS-232, GPIB & LAN is Optional				
<b>Environmental</b>					
Operating Temperature	0°C~40°C				
Storage Temperature	-40°C~85°C				
Altitude	2000m				
Relative Humidity	5%~95%, non-condensing				
Temperature Coefficient	100ppm/°C at Voltage, 300ppm/°C at Current,100ppm/°C at Frequency				
<b>Mechanical</b>					
Dimensions(WxHxD)	560.0x754.0x700.0 mm				
Package Dimensions (WxHxD)	680.0x1146.0x820.0 mm				
Unit Weight	134.0kg	157.0kg	157.0kg	157.0kg	
Shipping Weight	173.0kg	195.0kg	195.0kg	195.0kg	
<b>Regulatory Compliance</b>					
CE Mark	Installation Overvoltage Category II;Class II equipment;indoor use only.				

[1] In single phase mode, the current shall be reduced to 90% for the consideration of current sharing.

[2] The tolerance will change slightly in high frequency condition;

All specifications are subject to change without notice.



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