SPS5000X
Programmable Switching DC Power Supply

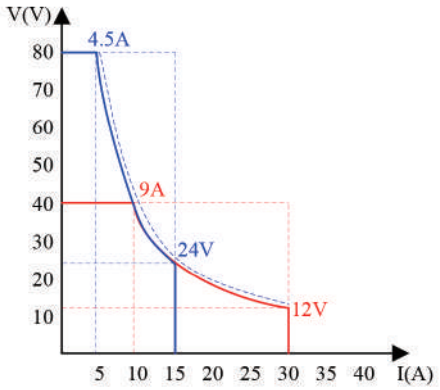
Main Features

- Rated Output Voltage: 40 V, 50 V, 80 V, 160 V
- Rated Output Power: 180 W, 360 W, 720 W, 1080 W
- Wide range of output voltage and current, high efficiency power supply
- CV, CC priority mode selection, better protection of equipment under test
- Load transient recovery time (Load change from 50~100%) <1 ms
- Adjustable slew rate of output voltage and current
- Setting and readback resolution: 1 mV, 1 mA
- User enabled internal output discharge circuit to accelerate the down programming of the output voltage
- Remote Voltage Sensing
- List function up to 50 steps; can be created from the front panel or by importing list sequence files from a USB memory device
- External analog voltage and resistor control of voltage or current output
- External voltage and current monitoring output
- OVP, OCP, LPP, OTP protection.
- 2.4-inch OLED high brightness liquid crystal display, 170-degree viewing angle
- Standard Interface: USB, LAN, Analog Control Interface
- Optional Interface: USB-GPIB module
- 1/2, 1/3, 1/6 rack mount size
- Embedded Web Server offers remote control through a web browser without the need for the driver or software

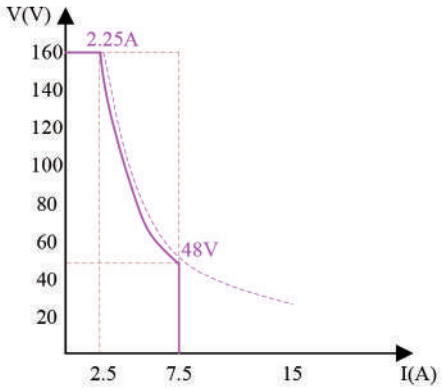
Design Features

• Constant Output Power

In constant output power mode, the voltage and current range is switched automatically to maximize the voltage and current without sacrificing the supply's output power. This mode enables the supply to provide a higher output voltage at lower current and a higher output current at lower voltage. Compared to the traditional rectangular output range of most supplies, the SPS5000X series power supply provides a wider voltage and current output range, which greatly increases the utilization of the power supply.



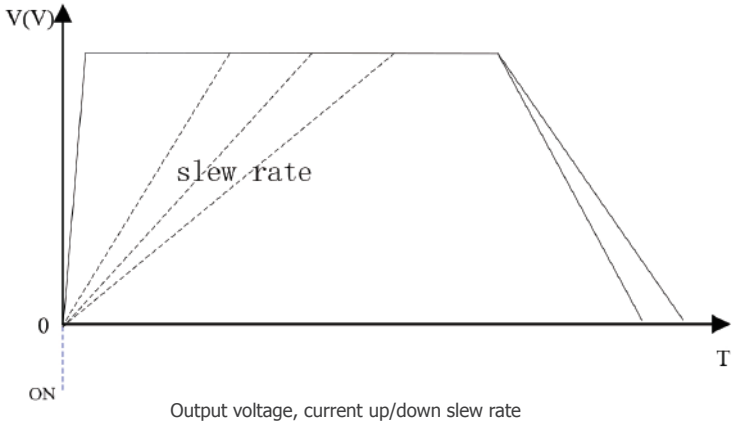
80V 15A/ 40V 30A Output Operating Area



160V 7.5A Output Operating Area

• Adjustable Output Voltage, Current up/down Slew Rate

The SPS5000X series supports custom setting of the rise/fall slew rate of voltage/current to verify the performance of the object under test as the voltage/current changes. This feature can effectively prevent the damage caused by inrush current to the DUT in applications such as the testing of capacitive current absorbing devices.



Output voltage, current up/down slew rate

• CV/CC Priority Mode

When the SPS5000X series power supply is set to CC priority mode, at the power output-on stage, it is able to operate under CC priority to limit the inrush current spike and overshoot voltage effectively when the power output is turned on.

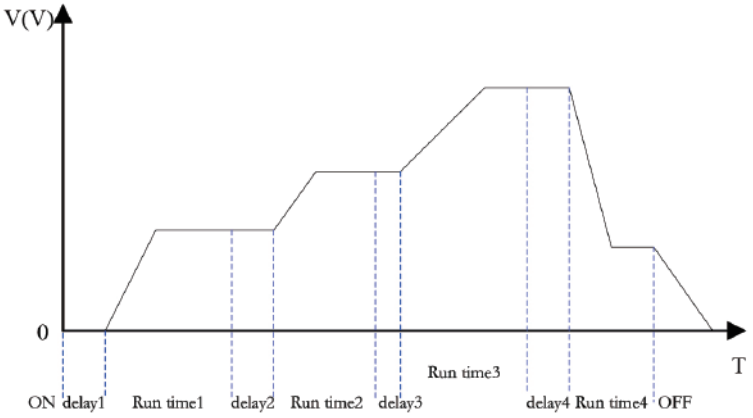
In CV priority mode, the output voltage reaches the set voltage value quickly. In some applications, such as LED testing, when the power output is started, the surge current and overshoot voltage will appear when the voltage reaches the on-state voltage of the LEDs.

CV priority mode

CC priority mode

• Intuitive List Operation Function

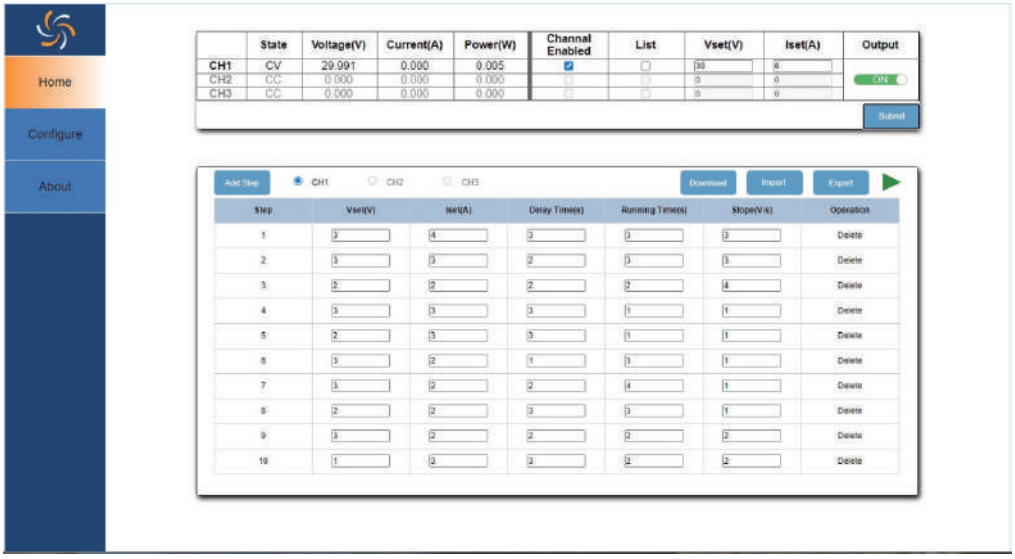
By editing the single-step setting value, duration, and slew rate, the List function can generate multiple complex sequences to meet complex test requirements. The user can edit the sequence by 50 steps natively or import the List sequence file via USB for multi-step running.
The minimum precision of delay time is 1ms. The minimum running time is 1 second.



List mode

• Rich Interface

The power supply includes USB and Ethernet communication interfaces as standard, and a
USB-GPIB converter module as optional. The embedded Web Server enables control and monitor of the power supply directly from a web browser, eliminating the need to install software drivers or applications.



Web Server Interface

Specifications

Model	SPS5041X	SPS5042X	SPS5043X	SPS5044X	SPS5045X	units
Output channel	1			2	3	CH
Rated output voltage	40					V
Rated output current	30	60	90	30		A
Total rated output power	360	720	1080	720	1080	W
Power Ratio	3.33					

Model	SPS5051X	SPS5081X	SPS5082X	SPS5083X	SPS5084X	SPS5085X	units
Output channel	1	1			2	3	CH
Rated output voltage	50	80					V
Rated output current	10	15	30	45	15		A
Total rated output power	180	360	720	1080	720	1080	W
Power Ratio	2.77	3.33					

Model	SPS5161X	SPS5162X	SPS5163X	SPS5164X	SPS5165X	units
Output channel	1			2	3	CH
Rated output voltage	160					V
Rated output current	7.5	15	22.5	7.5		A
Total rated output power	360	720	1080	720	1080	W
Power Ratio	3.33					

Ordering Information

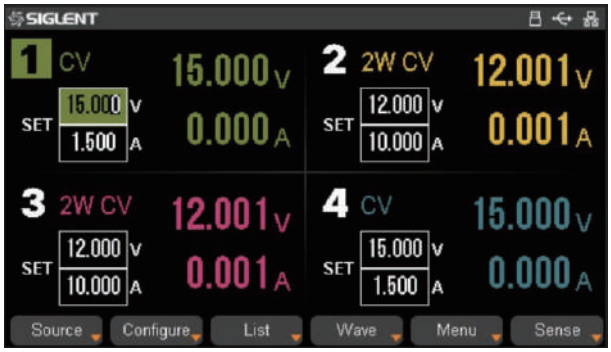
Product information		Product No
40 V/30 A 360 W	Single channel programmable Switching DC Power supply	SPS5041X
40 V/60 A 720 W	Single channel programmable Switching DC Power supply	SPS5042X
40 V/90 A 1080 W	Single channel programmable Switching DC Power supply	SPS5043X
40 V/30 A 360 W X2	Dual Channel Programmable Switching DC Power supply	SPS5044X
40 V/30 A 360 W X3	Three Channel Programmable Switching DC Power supply	SPS5045X
50 V/10 A 180 W	Single channel programmable Switching DC Power supply	SPS5051X
80 V/15 A 360 W	Single channel programmable Switching DC Power supply	SPS5081X
80 V/30 A 720 W	Single channel programmable Switching DC Power supply	SPS5082X
80 V/45 A 1080 W	Single channel programmable Switching DC Power supply	SPS5083X
80 V/15 A 360 W X2	Dual Channel Programmable Switching DC Power supply	SPS5084X
80 V/15 A 360 W X3	Three Channel Programmable Switching DC Power supply	SPS5085X
160 V/7.5 A 360 W	Single channel programmable Switching DC Power supply	SPS5161X
160 V/15 A 720 W	Single channel programmable Switching DC Power supply	SPS5162X
160 V/22.5 A 1080 W	Single channel programmable Switching DC Power supply	SPS5163X
160 V/7.5 A 360 W X2	Dual Channel Programmable Switching DC Power supply	SPS5164X
160 V/7.5 A 360 W X3	Three Channel Programmable Switching DC Power supply	SPS5165X
Standard Accessories		
USB Cable -1		
Quick Start -1		
Calibration Certificate -1		
Power Cord -1		
Output guard -1		
Optional Accessories		
SPS5000X-SEC		SPS5000X Series cable
SPS5000X-PAC		SPS5000X Parallel cable
SPS5000X-RMK		SPS5000X EIA Standard rack

SPD4000X
Programmable Linear DC Power Supply

Main Features

- Rated voltage: 32V, 12V, 30V; rated output power: 240W, 285W, 400W
- Up to four high-precision power supplies with independent controllable outputs, supporting CH2 and CH3 series and parallel connections
- Clear graphical interface with waveform and timer display modes
- 5-digit voltage and current display with minimum resolution of 1 mV, 1 mA
- Fast output response time: < 50 us
- The high current channel support remote voltage compensation sense function. The maximum compensation voltage is 0.6V
- Overvoltage protection and overcurrent protection or safe and accurate operation
- Equipped with a 4.3-inch TFT-LCD display (480*272 resolution)
- USB and LAN standard communication
- USB-GPIB module is optional
- Excellent channel density with up to 4 channels in a 3U half rack package
- Internal data storage for setups and parameters
- Embedded Web Server with instrument communication that doesn't require software installation
- Fully SCPI programming command set support as well as a LabView driver for remote control and system automation

Design Features

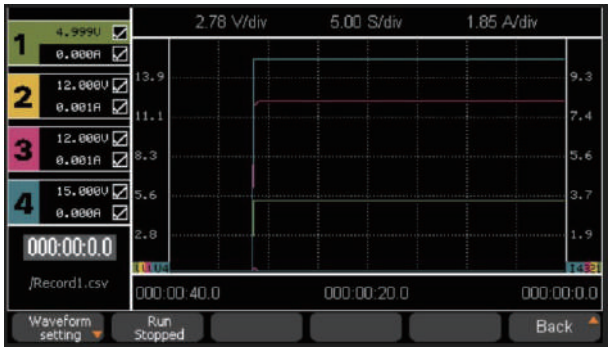


• High-Resolution and High-Precision Output

The highest resolution of 1mV/1mA (SPD4000X), provides excellent setting and read back accuracy. This ensures accurate output even with minimal voltage or current changes. This is impossible for a low-resolution power supply.

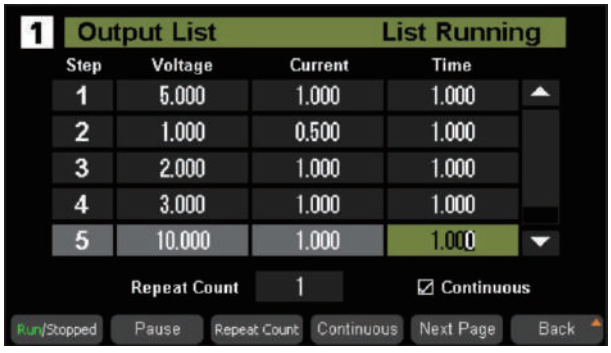
• Series/Parallel/Independent Mode

Series and parallel functions allow two channels combined into one output with more power output capability, extending the application range. Each of 4 channels power can be turned on or off independently or all together.



• Real Time Waveform Display

The SPD4000X series programmable linear DC power supply is equipped with a 4.3-inch, true color TFT-LCD display screen with a resolution of 480×272. 4 channels of voltage and current waveform run chart can be set, allowing users to dynamically observe changes in the output state more intuitively.



• List Operation

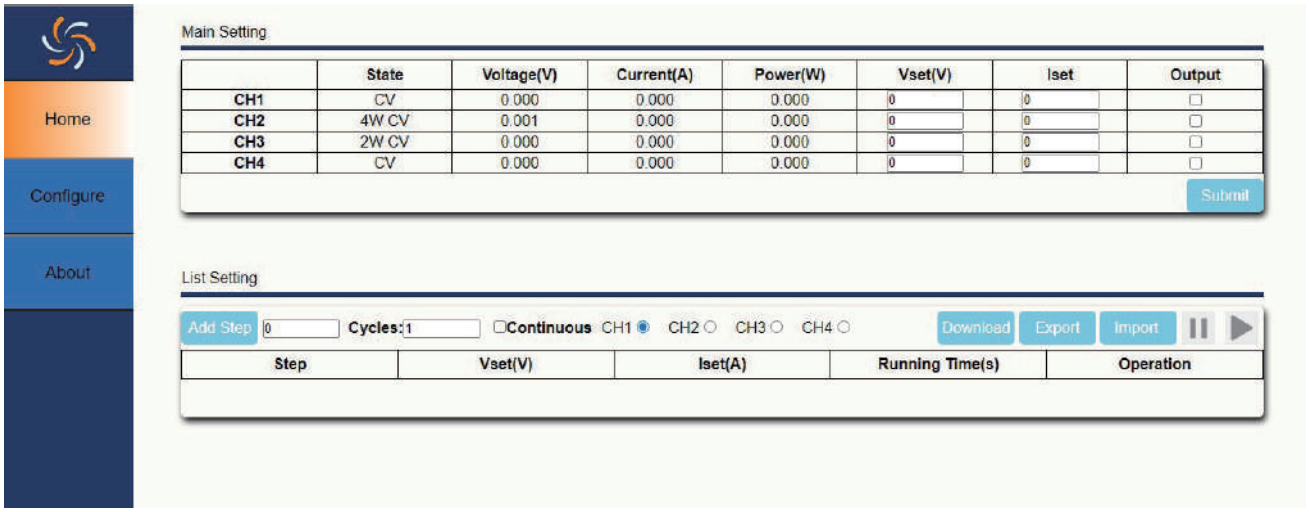
By editing the single-step setting value and duration, the list function can generate multiple sequences to meet complex test requirements. The user can edit the sequence by 50 steps natively or import the list sequence file via USB for multi-step running. Through panel operation, 8 sets of built-in list sequence output control can be achieved, providing users with simple power programming capabilities.

• Save/Recall Settings Parameters

The power supply allows users to save multiple types of files to memory for later recall. The power supply provides a non- volatile internal memory and access to external memory via the USB Host interface on the rear panel. Save setups, settings, and more directly to the supply or to a USB memory stick for transport.

• Powerful Web Control

The power supply includes USB and LAN communication interfaces as standard and a USB-GPIB converter module as optional. The embedded Web Server enables control and monitor of the power supply directly from a web browser, eliminating the need to install software drivers or applications. It can meet the application needs of special environments such as high pressure and high temperature. The embedded virtual control panel is simpler and more convenient to use.



Specifications

Model	SPD4323X	SPD4121X	SPD4306X	Units
Output channel	4	4	4	CH
CH1 rated output voltage/current	6/3.2	15/1.5	15/1.5	V/A
CH2 rated output voltage/current	32/3.2	12/10	30/6	V/A
CH3 rated output voltage/current	32/3.2	12/10	30/6	V/A
CH4 rated output voltage/current	6/3.2	15/1.5	15/1	V/A
CH2, CH3 series voltage/current	60/3.2	24/10	60/6	V/A
CH2, CH3 parallel voltage/current	32/6.4	12/20	30/12	V/A
Total rated output power	240	285	400	W

Ordering Information

Product Description			Product No
32V/3.2 A	240 W	4 channels programmable linear DC power supply	SPD4323X
12V/10 A	285 W	4 channels programmable linear DC power supply	SPD4121X
30V/6 A	400 W	4 channels programmable linear DC power supply	SPD4306X

Standard Accessories	
USB cable	1
QuickStart	1
Calibration certificate	1
Power cord	1
3A output test cord	4

SPD3000
Programmable Linear DC Power Supply

Application

- R&D lab general purpose testing
- Teaching lab experiment
- Automotive electronic test
- Production testing and quality assessment inspection

Key Features (SPD3303X/SPD3303X-E)

- 3 independent controlled and isolated output, 32 V/3.2 A×2, 2.5 V/3.3 V/5 V/3.2 A×1, total 220 W
- Max 5 digits Voltage, 4 digits Current Display, Minimum Resolution: 1 mV/1 mA
- Supports panel timing output functions
- 4.3 inch true color TFT- LCD 480x272 display
- 3 types of output modes: independent, series, parallel
- 100 V/120 V/220 V/230 V compatible design to meet the needs of different power grids.
- Intelligent temperature-controlled fan , effectively reducing noise
- Clear graphical interface, with the waveform display function
- Internal 5 groups of system parameter save/recall, supports data storage space expansion
- Provides PC software: Easypower , supports SCPI , LabView driver

Key Features (SPD3303C)

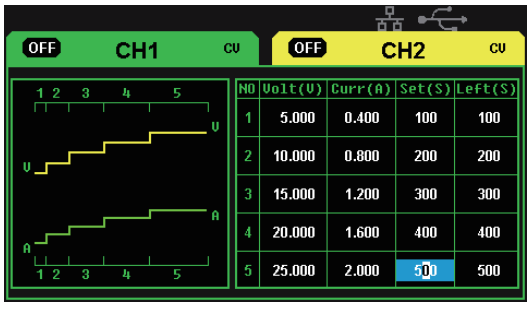
- 3 independent high precision output: 32 V/3.2 A×2, 2.5 V/3.3 V/5 V/3.2 A×1, total 220 W
- 4 digits voltage and 3 digits current display, min resolution: 10 mV, 10 mA
- Three output modes: independent, series and parallel
- 100 V/120 V/220 V/230 V compatible design, to meet the need of different power grids
- Smart temperature controlled fan, effectively reduce the noise
- Save/Recall 5 group system specifications, support data storage expansion
- Connected to PC via USB Device, support SCPI command, to meet the control and communication needs

Specifications

Model	SPD3303C	SPD3303X-E	SPD3303X
Channels	CH1: DC voltage range: 0-32 V, DC current range: 0-3.2 A		
	CH2: DC voltage range: 0-32 V, DC current range: 0-3.2 A		
	CH3: DC voltage range: 2.5/3.3/5.0 V, DC current range: 0-3.2 A		
Max output power	220 W		
Resolution	10 mV / 10 mA		1 mV / 1 mA
Display digits	LED display 4 digits voltage 3 digits current	4.3 inch TFT-LCD display 4 digits voltage 3 digits current	4.3 inch TFT-LCD display 5 digits voltage 4 digits current
Ripple noise	CV/CH3: ≤1 mVrms (5 Hz~1 MHz) CC: ≤3 mArms		
Standard interface	USB Device	USB Device, LAN	
Dimension	225 mm (W)×136 mm (H)×275 mm (D)		
Weight	7.5 kg (SPD3303C) 8 kg (SPD3303X/X-E)		

• Panel displays the timing output

Through front panel operation, 5 groups of timing settings and output control can be displayed, which provides users a simple power programming function. Also a connection can be made with Siglent's EasyPower PC software providing a full range of communication and control requirements.

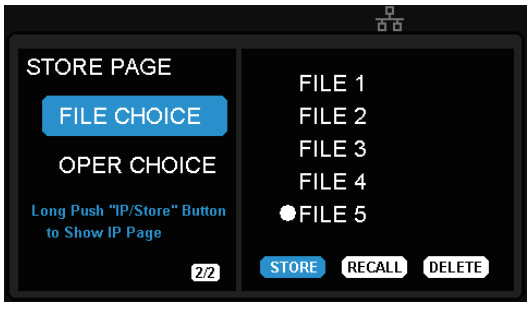


Panel timing output

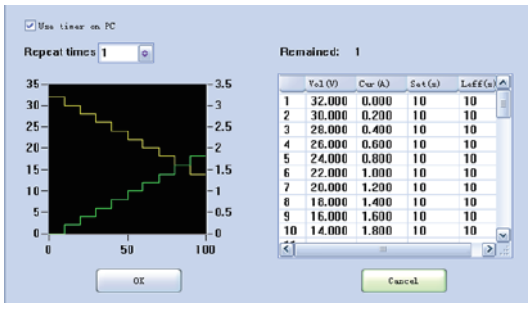
Real time wave display

• Save/Recall setting parameters

SPD3000X series programmable power supply can save or recall 5 groups of setting parameter in internal storage, also supports external storage expansion. You can easily obtain the settings you needed.



Internal Storage



PC Timer

SPD1000X
Programmable Linear DC Power Supply

Main Features

- Single path high-precision programmable voltage output:
  - 16 V/8 A, total power up to 128 W
  - 30 V/5 A, total power up to 150 W
- Stable, reliable, Low ripple and noise: ≤ 350 uVrms/3 mVpp; < 2 mArms
- Fast transient response time: < 50 μs
- 5 digit Voltage, 4 digit Current Display, Minimum Resolution: 1 mV/1 mA
- Supports front panel timing output functions
- 2.8 inch true color TFT- LCD 240 *320 display
- 2 types of output modes: Two-wire output mode, 4-wire compensation output mode，Maximum compensation voltage 1 V
- 100/120/220/230 V compatible design to meet the needs of different power grids
- Intelligent temperature-controlled fan reduces noise
- Clear graphical interface, with the waveform display function
- Internal 5 groups of system parameter save/recall
- Includes PC software: Easypower, supports SCPI, LabView driver

Design Features

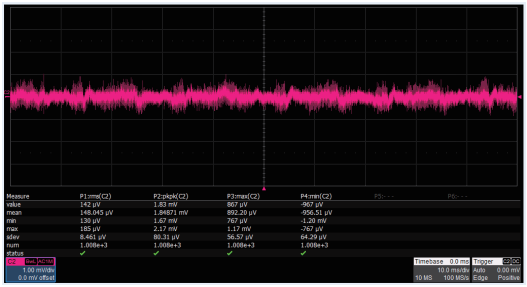
• High-resolution and high-precision output

The SPD1000X power supply features a high measurement resolution of 1 mV/1 mA . This ensures accurate output even with very with small changes in voltage or current. This is impossible for a low resolution power supply.

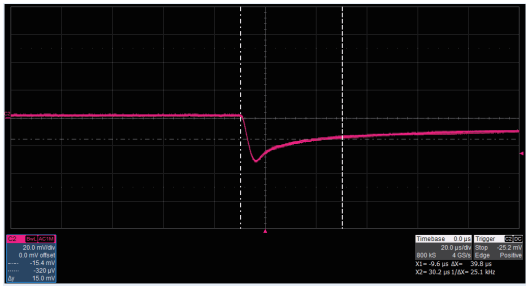
• 4-wire SENSE compensation mode function

In the 4-wire SENSE compensation output mode: By using a separate measurement circuit, the supply can more accurately compensate for any voltage drops due to high resistance connections or long cables. Maximum compensation voltage is 1 V.

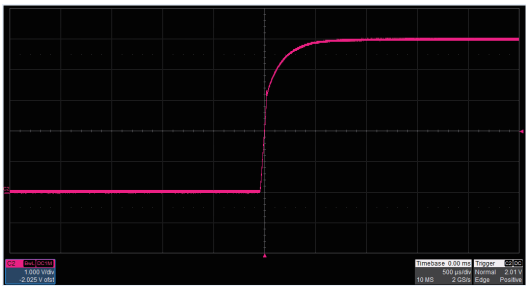
• Low ripple and noise



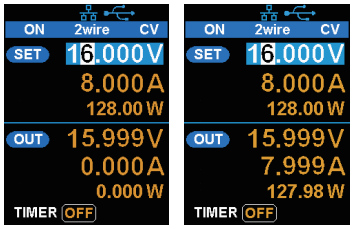
• Fast transient response time

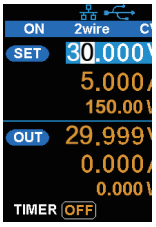


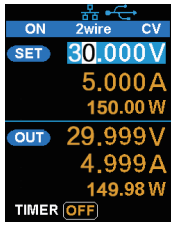
• Low voltage overshoot



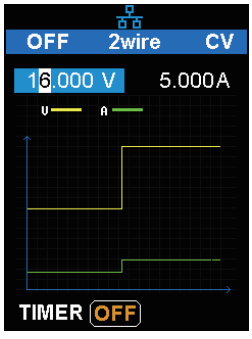
• 0.01% Load Regulation & 0.2% Line Regulation



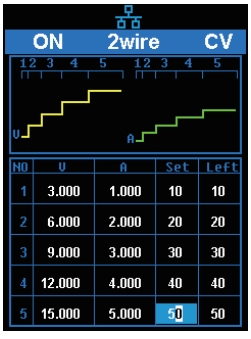




• Panel displays the timing output



Panel timing output

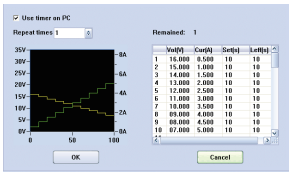


Real time wave display

• Save/Recall setting parameters

SPD1000X programmable power supply can save or recall 5 groups of setting parameters in internal storage. You can easily recall the settings you need.

Internal Storage



PC Timer

Specifications

All the specifications are guaranteed when the instrument has been working for more than 30 minutes under the specified operating temperature. Unless otherwise noted, the specifications are applicable to all the channels of the specified model.

Model		SPD1168X	SPD1305X
DC Output (0 ℃ to 40℃)		Output Voltage: 0 to 16 V Output Current: 0 to 8 A	Output Voltage: 0 to 30 V Output Current: 0 to 5 A
Display		2.8 inch true color TFT-LCD 5 digit voltage/4 digit current	
Resolution		1 mV/1 mA	
Program Accuracy (25 ± 5 ℃)		Voltage: ±(0.03% of reading+10 mV)	
		Current: ±(0. 3% of reading+10 mA)	
Program Accuracy (25 ± 5 ℃)		Voltage: ±(0.03% of reading+10 mV)	
		Current: ±(0. 3% of reading+10 mA)	
Temperature Coefficient per ℃ (Output Percentage + Offset)		Voltage: ±(0.01% of reading+3 mV)	
		Current: ±(0.01% of reading+3 mA)	
Constant Voltage Mode	Load Regulation	≤ 0.01% + 2 mV	
	Ripple & Noise	≤ 350 uVrms/3 mVpp (20 Hz to 20 MHz)	
	Recovery Time	< 50 μs (50% load change, minimum load 0.5 A)	
Constant Current Mode	Line Regulation	≤ 0.2% + 3 mA	
	Load Regulation	≤ 0.2% + 3 mA	
	Ripple & Noise	≤ 2 mArms	
Locking Key		Yes	
Memory Save/Recall		5 Sets	
Max Output Power		128 W	150 W
Power Source		AC 100 /120/220/230 V ± 10% 50/60 Hz	
Standard Configuration Interface		USB Device, LAN	
Insulation		Case to Terminal ≥ 20 MΩ (DC 500 V) Case to AC line ≥ 30 MΩ (DC 500 V)	
Operating Environment		Outdoor Usage: Elevation: ≤2000 m Environment Temperature 0 to 40 ℃ Relative Humidity ≤ 80% Installation Level: II Pollution Level: 2	
Storage Environment		Environment Temperature: -10 to 70 ℃ Relative Humidity ≤ 70%	
Dimension		154.6 (W) × 144.5 (H) × 280(D) mm	
Weight		≈5.5 kg	

SDL1000X Series
Programmable DC Electronic Load

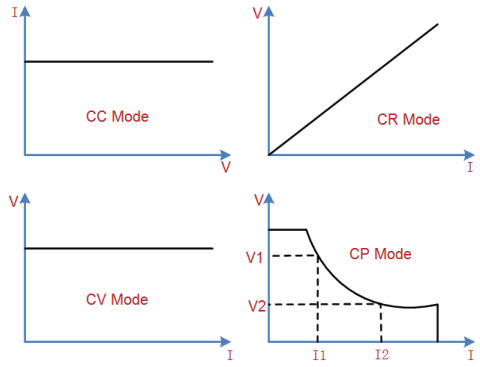
Main Feature

- SDL1020X (Single channel): DC 150 V/30 A, total power up to 200 W
- SDL1030X (Single channel): DC 150 V/30 A, total power up to 300 W
- 4 static modes / Dynamic mode: CC/CV/CR/CP
- CC Dynamic mode: Continuous, pulsed, toggled
- CC Dynamic mode: 25 kHz, CP Dynamic mode: 12.5 kHz, CV Dynamic mode: 0.5 Hz
- Measuring speed of voltage and current: up to 500 kHz
- Adjustable current rise time range: 0.001 A/us~2.5 A/us
- Min. readback resolution: 0.1 mV, 0.1 mA
- Short-circuit, Battery test, CR-LED mode, and factory test functions
- 4-wire SENSE compensation mode function
- List function supports editing as many as 100 steps
- Program function supports 50 groups of steps
- OCP, OVP, OPP, OTP and LRV protection
- External analog control
- Voltage, Current monitoring via 0-10 V
- 3.5 inch TFT-LCD display, capable of displaying multiple parameters and states simultaneously
- Built-in RS232/USB/LAN communication interface, USB-GPIB module (optional)
- Waveform trend chart and ease-to-use file storage and call functions
- Includes PC software: Supports SCPI, LabView driver

Design Features

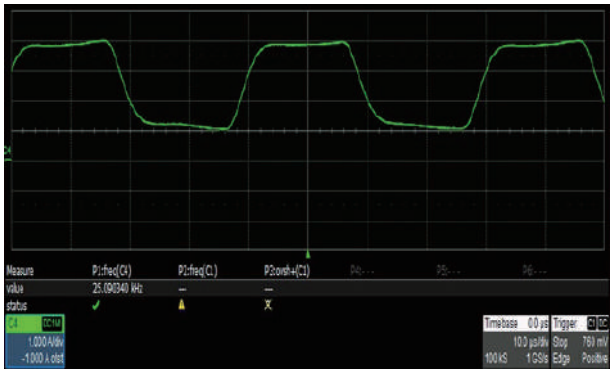
• Steady state operating mode

The SDL features four operating modes to provide flexible test capabilities. In CC mode, the electronic load will sink a constant current, regardless of the voltage at its terminals. In CV mode, the electronic load will cause a constant voltage to appear at its terminals. In CR mode, the electronic load will behave as a fixed resistance value. As shown in the figure, the electronic load will linearly change the current according to the input voltage. In CP mode, the electronic load will cause a constant power to be dissipated in the load.



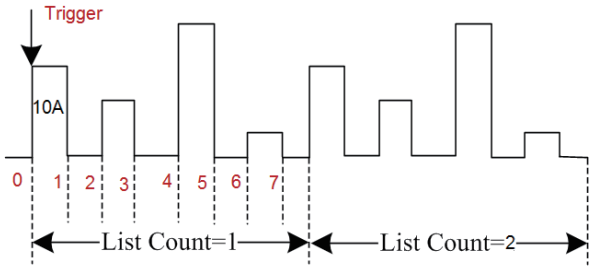
• Dynamic test mode up to 25 kHz (CC)

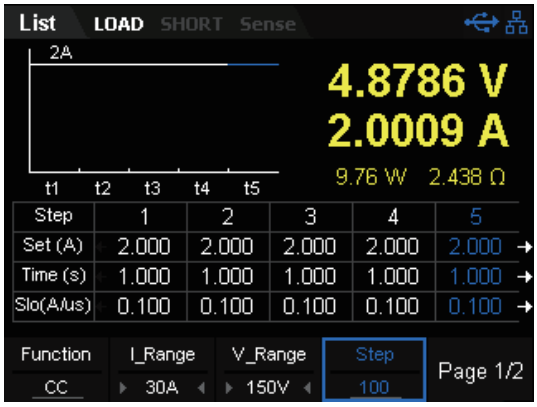
The transient test allows switching between two different load values. A common application is to test the dynamic characteristics of a DC source or DUT (Device Under Test). The transient test function enables the load to periodically switch between two set levels (Level A and Level B). The highest frequency can be set to 25 kHz in CC mode. The highest frequency can be set to 12.5 kHz in CP modes.



• Simplify complex sequencing using the list operation function

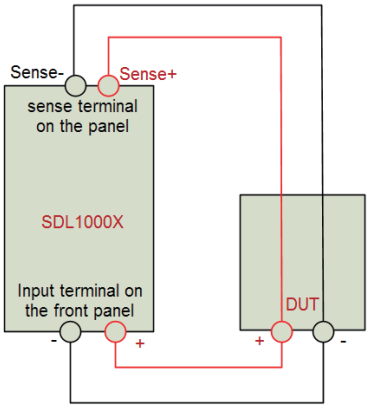
You can generate complex load sequences quickly using the list operation function. Here, you can edit the setpoints, dwell time, and slew rate for each step in the test. *Slew rate can only be edited in CC mode.





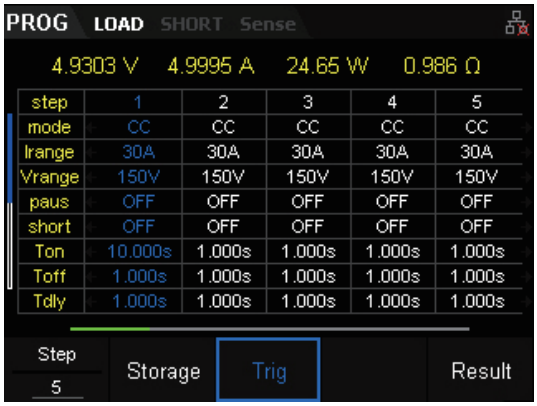
• 4-wire SENSE compensation mode function

In CC/CV/CR/CW mode, when a load is connected to a power supply, it will cause a large voltage-drop on the connection lines between tested instrument and terminals of load. Using remote sense, you can measure the voltage at the DUTs input terminals, effectively removing the additional error due to the voltage drop in the connection wires.



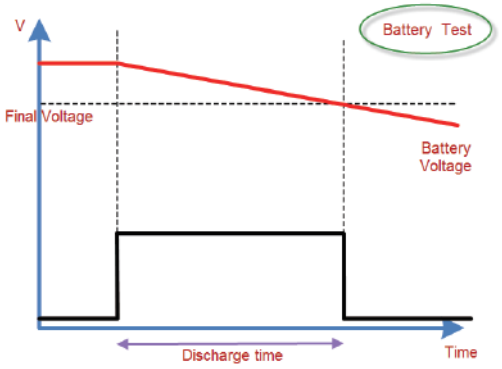
• Program function

In program (auto-test) mode, you can generate a sequence of tests using different modes, mode parameters and durations. This function is useful for automatically executing a set of tests on a device then display whether the tests passed or failed. Test results are easily viewed by pressing the up and down buttons. The load provides 8 nonvolatile registers to save auto-test file for recall later. Each file contains 1-50 steps to set up. Auto-test function is especially useful in the designing battery charging circuitry.



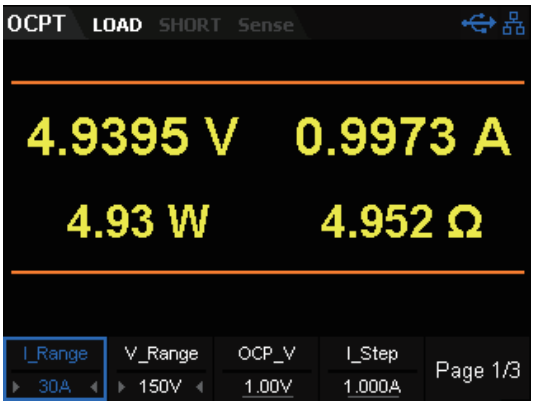
• Battery discharge function

The SDL1000X can also provide insight into battery performance by analyzing the discharge characteristics of the DUT. The SDL features three stop conditions for the discharge test: Voltage, capacity or time. The discharge process is immediately terminated if the stop conditions are met. This provides more control over the test termination and an extra layer of safety during critical tests. Throughout the test process the battery voltage, discharge current, discharge time and discharged capability is displayed clearly on the LCD panel.



• OCPT/OPPT Mode

Over-current protection (OCPT) mode prevents drawing too much current from the DUT. After the input voltage reaches the Von point, the DC load will start to draw a current from the source after a delay time. The current value will increase by a certain step size at regular intervals. Simultaneously, the DC load will compare the input voltage to the OCP voltage:If it is lower, then the present current value will be compared to see if it is in the current range you have set. Within the range, the OCP test will evaluate Pass or Fail. If it is outside of the set range, the DC load will to increase drawing current and compare the voltage again.



Overpower-protection (OPPT) mode: When the input voltage has reached the Von point, the load will draw power after a delay time. The power value will increase by a step size at regular intervals. Simultaneously, the DC load will judge whether the input voltage is lower than OPP voltage you have set, if it is, then the present current value will be compared to see if it is in the current range you have set. Within the range, the OPP test will Pass or Fail. If it is outside of the set power, the load will continue to increase the power draw within the cut-off current range and compare OPP voltage with the input.

• CR-LED Mode

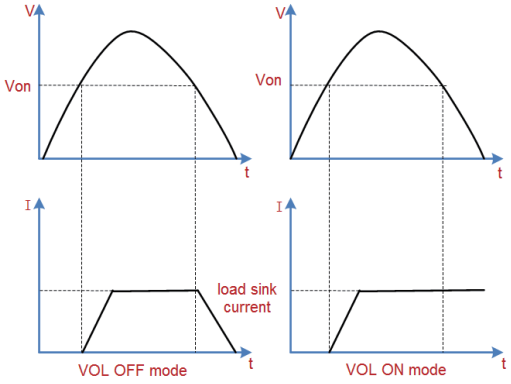
The SDL1000X includes a CR-LED mode specifically for LED driver testing. Basing on the traditional CR mode, CR-LED mode adds a diode break-over voltage setting. When the input voltage is above this set value, the DC load start to work. Thus, it can emulate the actual characteristics of an LED.

• Voltage Rise/Fall speed test

The electronic load is also equipped to directly measure voltage rise and fall times. It can calculate the time from one voltage to another without the need for additional measurement instrumentation. With an SDL1000X, you can save money and improve efficiency.

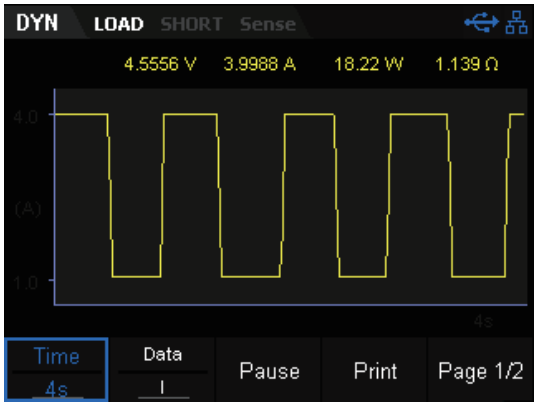
• Voltage threshold function

The SDL1000X can be set to turn on or off if the input voltage is at, above, or below a set value. By defining these thresholds, you control when the load is active. Which minimizes test time and increases safety.



• Waveform trend chart function

The electronic load includes a waveform display function and supports the following operations for the waveform: Pause, recording, and capturing the waveform. You can quickly observe the trends of parameter changes as they occur throughout the test.



• Save/Recall setting parameters

The load allows you to save different types of files to the internal and external memories. You can recall and read them when necessary.

• External analog control

The load allows the user to control current or voltage through external analog terminals (EXT PRG). Input a 0-10 V analog to adjust 0-100% rated voltage and current. It is very useful for those applications that need to change the input value with external signals.

• Multiple protection modes

The SDL1000X series Programmable DC Electronic Load provides five protection types: OVP, OCP, OPP, OTP and LRV. When OVP/OCP/OPP/OTP/reverse voltage protection (LRV) occurs, the load will immediately turn off the input and stop sinking. Then, a prompt message is displayed.

SPS6000X Series Wide Range Programmable Switching DC Power Supply

Data Sheet

EN01B

SIGLENT TECHNOLOGIES CO.,LTD

SPS6225X
SPS6150X

Product Overview

The SPS6000X Series is a programmable switching DC power supply with a wide range of single output and constant power features. This series includes two models, the SPS6225X and SPS6150X, which feature rated output voltages and currents of 200 V / 25 A and 100 V / 50 A, with a maximum output power of 1500 W. Users can connect up-to-five SPS6000X chassis of the same model in parallel to expand the output power to meet different application requirements.

The SPS6000X series has a high brightness 3.12 inch OLED display, a user-friendly interface that enables easy control and performance monitoring, and excellent performance indicators. The minimum resolution is 10 mV / 10 mA. The output voltage and current rise times are adjustable. It has two output modes: Constant voltage and constant current. It also supports list sequence programming mode to easily perform voltage or current step profiles. Safety features include over-voltage, over-current, power limit, and over-temperature protection.

For remote control operation, the SPS6000X includes LAN / USB communication interfaces, an analog control interface, and a convenient web browser control. It can be widely used in a variety of demanding testing places, such as general laboratory testing, the LED lighting industry, automotive electronics, and other fields

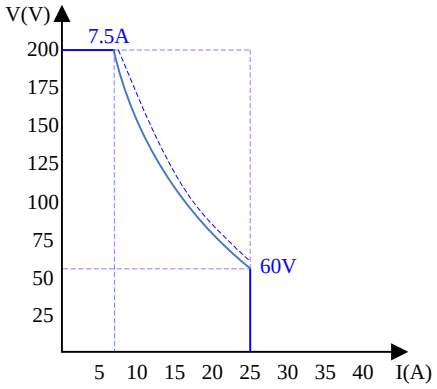
Key Features

- Rated Voltage: 200 V / 100 V
- Rated Current: 25 A / 50 A
- Rated power: 1500 W
- Wide range of output voltage and current values in a high-efficiency power supply
- CV, CC priority mode selection, better protection of equipment under test
- Load transient recovery time (Load change from 50~100%) < 2.5 ms
- Adjustable voltage and current slew rates
- Setting and readback resolution: 10 mV, 10 mA
- User-enabled internal output discharge circuit to accelerate output voltage reduction
- Remote Sense function to decrease lead resistance error
- Local list function with up to 50 steps, USB import list sequence file
- External analog voltage control. Voltage and current monitoring outputs
- OVP, OCP, LPP, OTP protection
- 3.12-inch OLED high-brightness display with a wide viewing angle of 170 degrees
- Equipped with USB, LAN standard communication interface, optional USB-GPIB module
- 44 mm (1U) height, 19” width for convenient rack mounting
- Embedded Web Server offers remote control through a web browser without the need for drivers or additional software

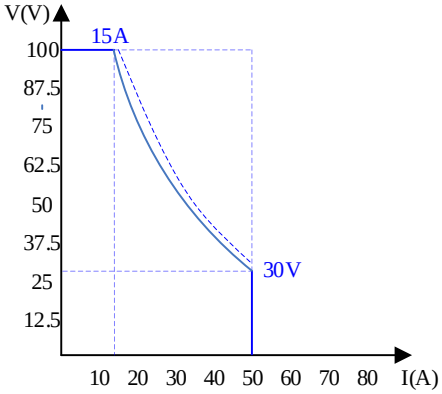
Design Features

Constant Output Power

In constant output power mode, the voltage and current range are switched automatically to maximize the voltage and current without sacrificing the supply's output power. This mode enables the supply to provide a higher output voltage at lower currents and a higher output current at lower voltages. Compared to the traditional rectangular output range of most supplies, the power supply provides a wider voltage and current output range, which greatly increases the utilization of the power supply.



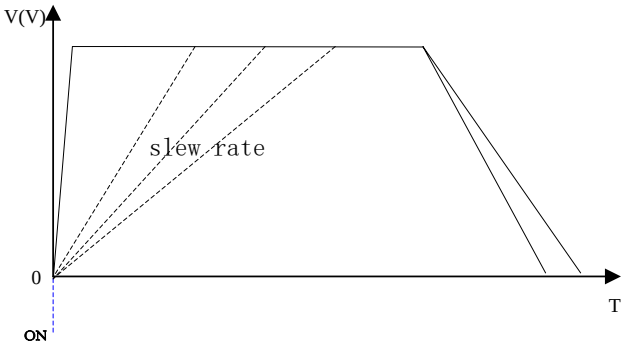
SPS6225X 1500W Output Operating Area



SPS6150X 1500W Output Operating Area

Adjustable Output Voltage, Current rising/falling Slew Rate

The power supply supports custom rise/fall slew rates of both voltage and current to verify the performance of the device under test as the voltage/current changes. This feature can effectively prevent the damage caused by inrush current to the DUT in applications such as the testing of capacitive current absorbing devices.



Output voltage, current up/down slew rate

CV/CC Priority Mode

When the power supply is set to CC priority mode, at the power output-on stage, it limits the inrush current spike and overshoot voltage when the power output is turned on.

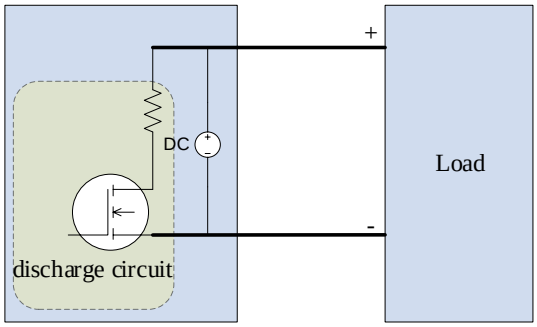
In CV priority mode, the output voltage reaches the set voltage value quickly. In some applications, such as LED testing, when the power output is started, the surge current and overshoot voltage will appear when the voltage reaches the on-state voltage of the LEDs.

CV priority mode

CC priority mode

Built-in Discharge Circuit

The power supply is designed with a discharge circuit in parallel with the output terminal, which can be equivalent to a parallel resistance. When the power is turned off and the load is disconnected, the discharge circuit will discharge the power in the output filter capacitor. Without the discharge circuit, the output capacitance will remain charged, which may pose a dangerous voltage at the output terminals for some time.

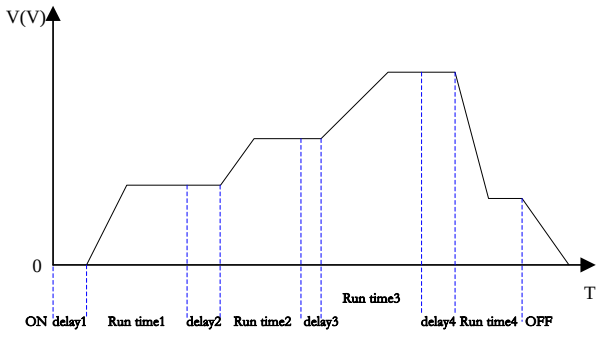


Discharge circuit

Intuitive List Operation Function

By editing the single-step setting value, duration, and slew rate, the List function can generate multiple complex sequences to meet complex test requirements. The user can edit the sequence by 50 steps natively or import the List sequence file via USB for multi-step running.

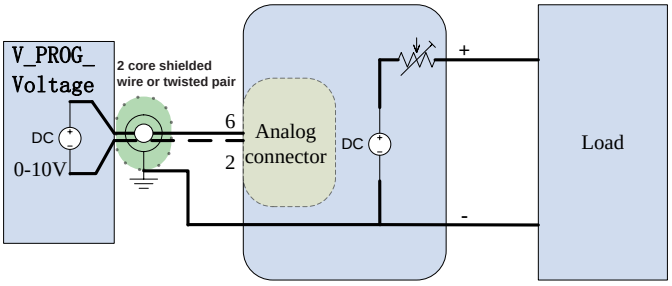
The minimum precision of the delay time is 1 ms. The minimum running time is 1 second.



List mode

External Analog Control

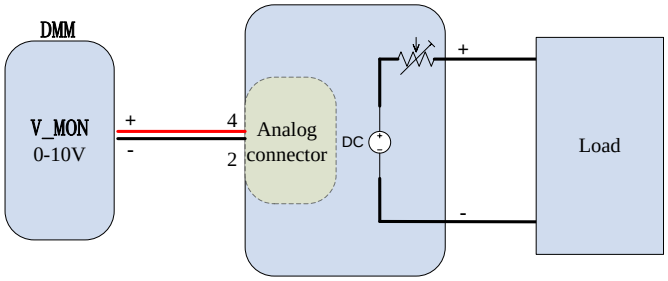
Two operating modes can be implemented using the analog port on the back of the unit; voltage-controlled voltage and voltage-controlled current. In external voltage control mode, when the terminal is connected with an adjustable voltage of 0-10 V, it can be used to adjust the output from 0 to full range (10 V corresponds to the voltage or current value of the full range of the power supply).



External voltage programming voltage output

Voltage, Current Monitor Output

The voltage and current output monitoring terminal output is a 0~10 V analog signal with the corresponding value representing the output current or voltage of the power supply from 0 to full range. The user can connect to a DMM, such as a SIGLENT SDM, or oscilloscope such as a SIGLENT SDS, to display the output current or voltage changes.

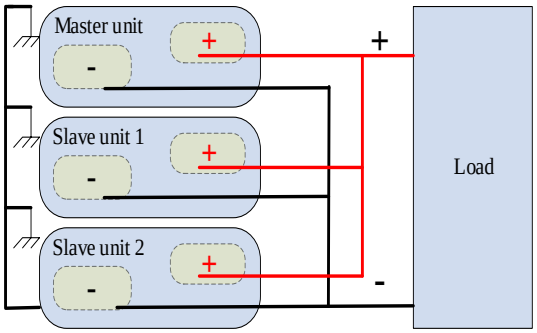


External DMM Monitoring of the Output Voltage

Parallel Function

Multiple single-channel SPS6000X series modules can be connected in parallel (5 units max), to increase the total output power. The SPS6000X series offers a highly flexible configuration concept to provide high power density that meets the needs of many applications.

(Typically, outputs of the supply float so the negative terminals are not connected to chassis ground. The negative terminals can also be connected to chassis ground.)



Parallel Connection

Multiple Policy Protection Patterns

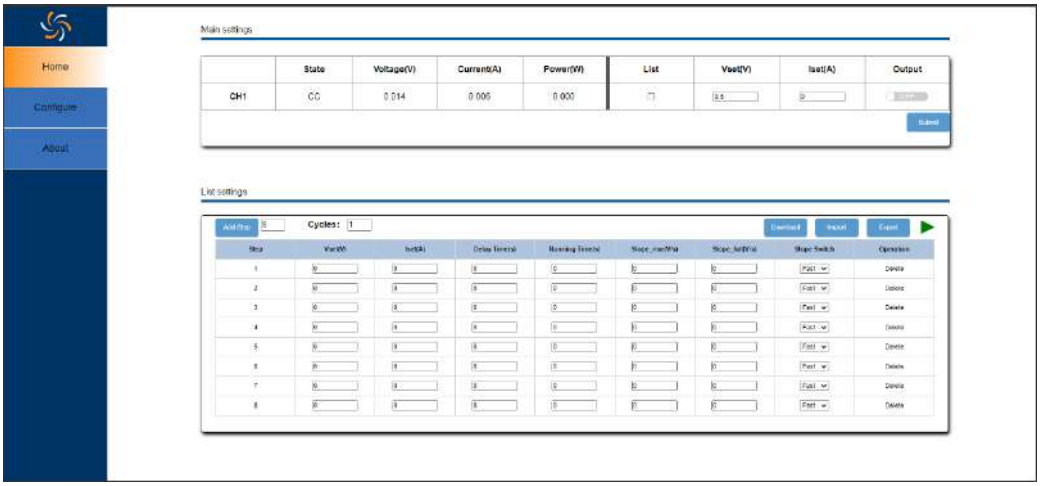
The protection functions of the power supply include over-current protection (OCP), over-voltage protection (OVP), and over-temperature protection (OTP). If protection occurs, the power supply will turn off the output and enter protection mode. Protection can be released by pressing the Esc key for at least 2 seconds. Upon entering the Limited power protection (LPP), the system will start the power limitation mode, the maximum output power is about 102% of the rated power

Save/Recall Setting Parameters

The power supply allows users to save multiple types of files to memory for later recall. The power supply includes non-volatile internal memory and external memory via the USB host port with a user-provided USB memory device.

Rich Interface

The power supply includes USB and Ethernet communication interfaces an optional USB-GPIB converter module for GPIB communications. The embedded Web Server enables control and monitoring of the power supply directly from a web browser, eliminating the need to install software drivers or applications.



Web Server Interface

Specifications

Unless otherwise noted, all specifications are guaranteed within the temperature range of 25°C ± 5 °C with a warm-up time of 30 minutes.

Model	SPS6225X	SPS6150X
Rated output voltage	200 V	100 V
Rated output current	25 A	50 A
Total rated output power	1500 W	
Power Ratio	3.33	3.33
C.V Mode		
Line Regulation	40 mV (From 90 ~ 132 Vac or 170 ~ 265 Vac, constant load)	5 mV (From 90 ~ 132 Vac or 170 ~ 265 Vac, constant load)
Load Regulation	100 mV (From no load to full load, constant input voltage)	50 mV (From no load to full load, constant input voltage)
Ripple and Noise (*1)	(Noise bandwidth 20 MHz; Ripple bandwidth 5 Hz ~1 MHz)	
RIPPLE (pk to pk)@220 Vac Input	220 mV	120 mV
RMS RIPPLE@220 Vac Input	39 mV	30 mV
Voltage programming Accuracy (*2)	0.1% ± 10 mV	
Voltage programming resolution	10 mV	
Voltage Readback Accuracy (*2)	0.1% ± 20 mV	
Voltage Readback resolution	10 mV	
Temperature coefficient	100 ppm/°C from rated output voltage following 30-minute warm-up.	
Remote compensation voltage (single wire)	0.6 V	
Rise Time	10% ~ 90% of rated output voltage, rated resistance load	
Rated Load	30 ms	
No Load	30 ms	
Fall Time	90% ~ 10% of rated output voltage, rated resistance load	
Rated Load	15 ms	
output capacitance	1100 uF	1760 uF
Transient response time	2.5 ms (Time for recovery to within 0.5% of its rated output after the transient from 10% to 90% of the rated output power)	
C.C Mode		
Line Regulation	40 mA (From 90 ~ 132Vac or 170 ~ 265Vac,constant load)	30 mA (From 90 ~ 132Vac or 170 ~ 265Vac,constant load)
Load Regulation	40 mA (From No load to Full load, constant input voltage)	50 mA (From No load to Full load, constant input voltage)
r.m.s (*3)	30 mA	40 mA
Current Setting Accuracy	0.2% ± 30 mA	
Current programming resolution	10 mA	
Current Readback Accuracy	0.2% ± 40 mA	

Current Readback resolution	10 mA	
Temperature coefficient	200 ppm/°C from rated output current following 30-minute warm-up.	
Protection Function		
OVP		
Setting Range	20 V ~ 220 V	10 V ~ 110 V
Setting Accuracy	± (2% of rated output voltage)	
OCP		
Setting Range	2.5 A ~ 25 A	5.0 A ~ 55 A
Setting Accuracy	± (2% of rated output current)	
OTP	Over temperature alarm and shut off output.	
Low AC Input Protection	Shut off output.	
LPP	The over power limit is approximately 102% of the rated output power.	
Rising/Falling Voltage Slew Rate: Only applicable if V-I Mode is set to CV Slew Rate Priority		
	0.001 ~ 4 V/ms	0.001 ~ 2 V/ms
Rising/Falling Current Slew Rate: Only applicable if V-I Mode is set to CC Slew Rate Priority.		
	0.001~0.5 A/ms	0.001 ~ 1.0 A/ms
Efficiency@220 Vac Input		
Full power and full current output	>86%	>86%
Full power and full voltage output	>90%	>90%
Parallel capability		
parallel	5 Units	
Series capability(*4)		
series	The output voltage shuould not exceed 400 V when series connect the same rated current products	
Analog programming and monitoring		
External Voltage Control of the Voltage Output	Accuracy: +0.5% of rated output voltage	
External Voltage Control of the Current Output	Accuracy: +1% of rated output current	
Output Voltage/ Current monitor accuracy	±1%	
Shutdown control	Close output with LOW (0 V~0.5 V) or short circuit	
Output On/Off control	Use LOW (0 V~0.5 V) or hang to turn off the output Use HIGH (4.5 V~5 V) to turn on the output.	
CV/CC/ERR/ ON/OFF Status	Photo coupler open collector output; Maximum voltage 30 V, maximum sink current 8 mA.	
Input Characteristics		
Normal Rated Input	100 Vac ~ 240 Vac, 50 Hz ~ 60 Hz, Single-phase	
Input Voltage Range	90 Vac ~ 265 Vac	
Input Frequency Range	47 Hz ~ 63 Hz	

Input fuse (built-in)	T30 (6 X 32 mm)	
Maximum Input Current		
90Vac	≈23.1 A	
Surge Current	< 30 A	
Maximum Input Power	2100 VA	
Power factor		
90 Vac	0.99	
220 Vac	0.98	
Communications Interfaces		
USB	Type A: HOST, Type B: DEVICE, SPEED: 1.1/2.0	
LAN	MAC address, Gateway IP address, Instrument IP address, Subnet Mask	
GPIB	Optional: USB-GPIB adapter	
Environment Conditions		
Operating Temperature	0˚C ~ 50˚C	
Storage temperature	-25˚C ~ 70˚C	
Operating humidity	20% ~ 85% RH; No condensation	
Storage humidity	90% RH or less; No condensation	
Altitude	≤ 2000 m	
General specifications		
Weight (host only)	10 kg	10 kg
Dimensions (WxHxD)	483 mm x 44 mm x 468 mm	
Cooling	Internal fan-forced air cooling	
Safety standard	EN60950, EN61326, EN55022 Grade B/Class B	
Withstand Voltage	Input to Base: 2500 VAC for 1 minute without abnormality	
	Input to Output: 2500 VAC for 1 minute without abnormality	
	Output to Base: 400 VDC for 1 minute without abnormality	
Insulation Resistance	Input to Base: 500 VDC, ≥100 mΩ	
	Input and Output: 500 VDC, ≥ 100 mΩ	
	Output to Base: 500 VDC, ≥100 mΩ	

*1: Use a probe to measure the positive and negative poles of the sense terminal, the bandwidth limit is 20 MHz.
*2: %output+offset, when the output voltage is less than 5 V, the offset is 200 mV.
*3: The bandwidth limit measured by the current probe is 1 MHz.
*4: The connection of multiple machines is subject to the connection restrictions between machines in the user's manual.

Ordering Information

Product Model	Description
SPS6225X	200V/25A 1500W Single channel programmable DC switching power supply
SPS6150X	100V/50A 1500W Single channel programmable DC switching power supply

Standard Configurations	Quantity
USB Cable	1
Quick Start	1
Calibration Certificate	1
Power Cord	1
Output guard	1

Warranty

Three-year warranty, excluding accessories.

About SIGLENT

SIGLENT is an international high-tech company, concentrating on R&D, sales, production and services of electronic test & measurement instruments.

SIGLENT first began developing digital oscilloscopes independently in 2002. After more than a decade of continuous development, SIGLENT has extended its product line to include digital oscilloscopes, isolated handheld oscilloscopes, function/arbitrary waveform generators, RF/MW signal generators, spectrum analyzers, vector network analyzers, digital multimeters, DC power supplies, electronic loads and other general purpose test instrumentation. Since its first oscilloscope was launched in 2005, SIGLENT has become the fastest growing manufacturer of digital oscilloscopes. We firmly believe that today SIGLENT is the best value in electronic test & measurement.

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