SPD4000X Series Programmable Linear DC Power Supply

Data Sheet

EN01C

SIGLENT TECHNOLOGIES CO.,LTD

Product Overview

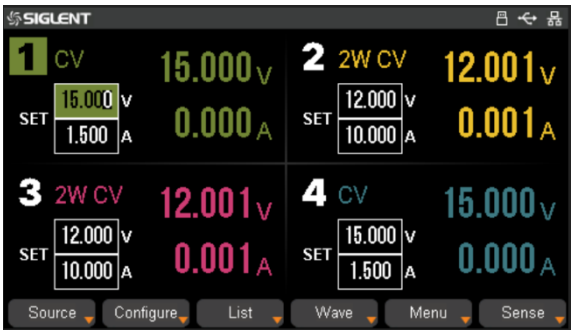
The SPD4000X series programmable linear DC power supply is equipped with a 4.3-inch TFT-LCD display, friendly human-machine interface, and excellent performance indicators. Real-time waveform display provides engineers with an informative user interface. The SPD4000X series consists of three models with up to four independent outputs with rated output voltage values of 32V, 12V, or 30V and the total output power of 240W, 285W or 400W. The minimum resolution can be set to 1mV/1mA. The SPD4000X is equipped with overvoltage protection and overcurrent protection for device protection. Together, these capabilities make the SPD4000X a high precision, low noise, and highly reliable power solution suitable for use from production to research. The instrument is also equipped with LAN/USB communication interface and remote web page control function to meet different application scenarios.

Key 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 1mV, 1mA
- Fast output response time: < 50us
- 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

Characteristics

High-Resolution and High-Precision Output

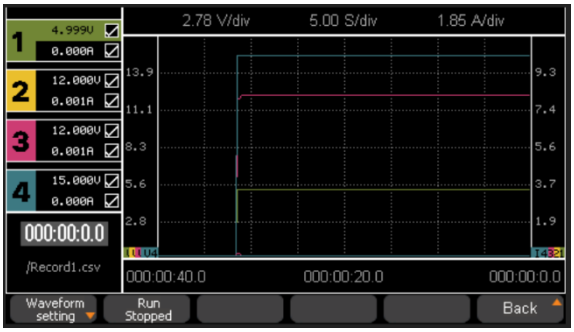


The highest resolution of 1mV/1mA (SPD4000X), provides excellent setting and read back accuracy. This ensures accurate output even with minimal voltage or current changes. This is impossible for a low-resolution power supply.

Series/Parallel/Independent Mode

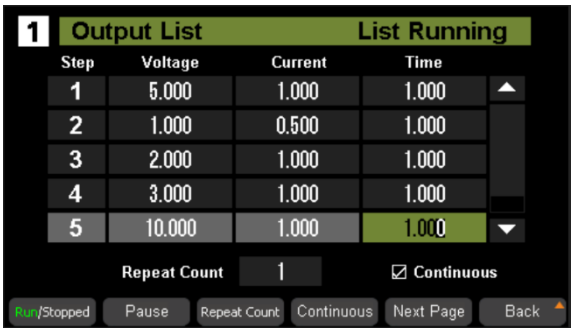
Series and parallel functions allow two channels combined into one output with more power output capability, extending the application range. Each of 4 channels power can be turned on or off independently or all together.

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



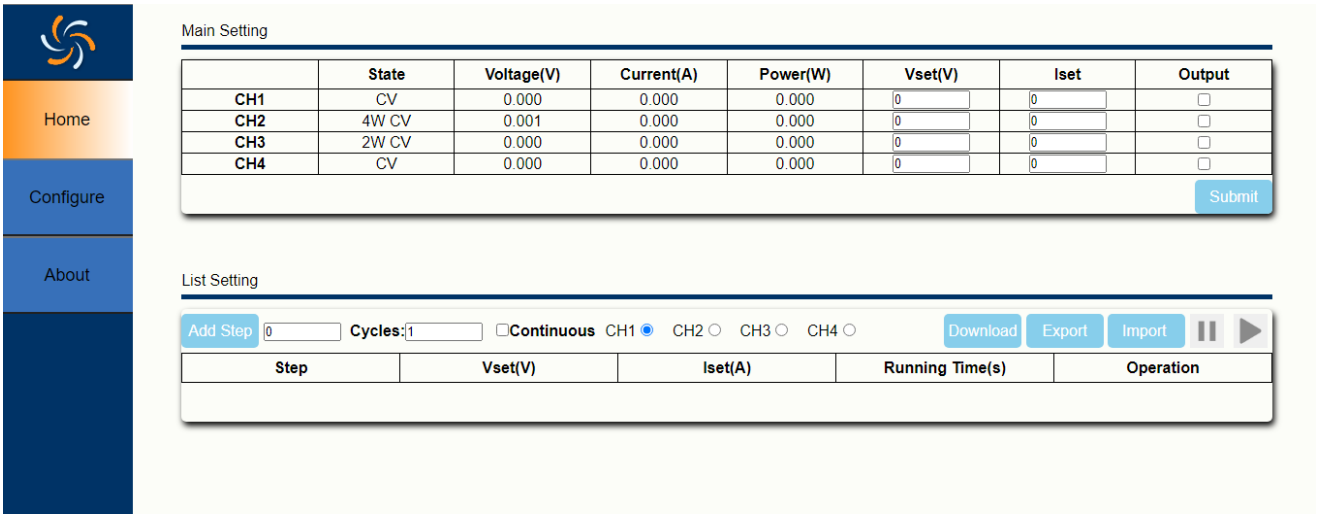
By editing the single-step setting value and duration, the list function can generate multiple sequences to meet complex test requirements. The user can edit the sequence by 50 steps natively or import the list sequence file via USB for multi-step running. Through panel operation, 8 sets of built-in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

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

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
C.V Mode				
Line regulation	0.01%+2			mV
Load regulation (2W mode)	0.01%+10			mV
Load regulation (4W mode)	0.01%+2			mV
Ripple and noise	Noise bandwidth 20MHz Ripple bandwidth 5Hz~1MHz			
p-p	6	6	6	mV
r.m.s	600	600	600	uV
Transient response time	50 (Time for recovery to within 0.1%+50mV of its rated output against current of 50%~100%)			us
Voltage programming accuracy	± (0.03% of reading+10)			mV
Voltage programming resolution	1			mV
Voltage readback accuracy	± (0.03% of reading+10)			mV
Voltage readback resolution	1			mV
Temperature coefficient	100 ppm/°C from rated output voltage following 30-minute warm-up			ppm/°C
Remote compensation voltage (2W)	0.6			V
C.C Mode				
Line regulation	0.1%+3			mA
Load regulation	0.1%+3			mA
Ripple and noise				
r.m.s	2			mA
Current programming accuracy	± (0.3% of reading+10)			mA
Current programming resolution	1			mA
Current readback accuracy	± (0.3% of reading+10)			mA

Current readback resolution	1			mA
Temperature coefficient	200 ppm/°C from rated output voltage following 30-minute warm-up			ppm/°C
Parallel Mode				
Line regulation	0.01%+5			mV
Load regulation	0.01%+50			mV
Series Mode				
Line regulation	0.01%+5			mV
Load regulation	< 100	< 200	< 150	mV
List Mode				
List time accuracy	< 50			ms
Protection Function				
Output overvoltage protection (OVP)	10%~110% of rated output voltage			V
Output overcurrent protection (OCP)	0~110% of rated output current			A

Model	SPD4323X	SPD4121X	SPD4306X	Units
Input Characteristics				
Normal rated input	AC100V/120V/220V/230V ±10%, 50Hz/60Hz			
Maximum Input Current of rated load				
100V*(1+10%) input	4.9	6.5	7.9	A
220V*(1+10%) input	2.3	3.0	3.8	A
Surge current (peak value)	< 80			A
Maximum input power of rated load	470W, 570VA	620W, 740VA	720W, 910VA	
Applicable fuse	100/120V: T6.3A 250V 220/230V: T3.15A 250V	100/120V: T10A 250V 220/230V: T3.15A 250V	100/120V: T10A 250V 220/230V: T6.3A 250V	
Interface Capability				
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 Condition				
Operating temperature	0˚C~40˚C			
Storage temperature	-10˚C~70˚C			
Operating humidity	80% RH or less; no condensation			
Storage humidity	70% RH or less; no condensation			

Altitude	≤ 2000m			
General Specification				
Weight (Instrument only)	12	12	12	Kg
Dimensions (WxHxD)	221x133x360	221x133x360	221x133x360	mm
Cooling	Internal fan forced air cooling			
EMC	Class A test and measurement products in compliance with European EMC Directive 2014/30/EU			
Withstand voltage	Input to base: 1500 Vac for 1 minute without abnormality			
	Input to output: 1500 Vac for 1 minute without abnormality			
	Output to base: 240 Vdc for 1 minute without abnormality			
Insulation resistance	Input to base: 500 Vdc, ≥ 100MΩ			
	Input to output: 500 Vdc, ≥ 100MΩ			
	Output to base: 240 Vdc, ≥ 100MΩ			

Ordering Information

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

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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