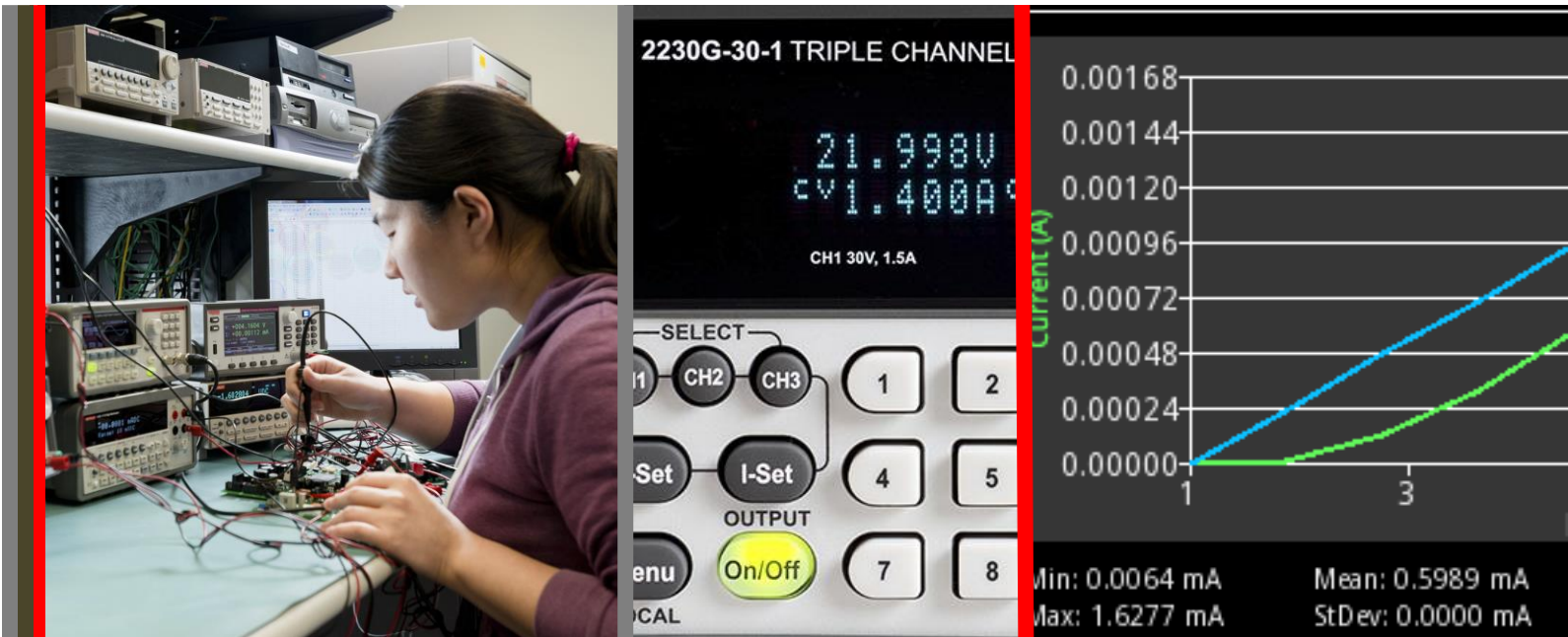# Power Supply Selector Guide

Tektronix and Keithley Power Supply Selection Guide

Brand	Model	Channel	Power	Output Voltage	Output Current	Programmable	Others
Tektronix	PWS2185	1	90 W	18 V	5 A	N/A	Single-channel, low-noise, non-programmable, benchtop linear power supply
Tektronix	PWS2323	1	96 W	32 V	3 A	N/A	
Tektronix	PWS2326	1	192 W	32 V	6 A	N/A	
Tektronix	PWS2721	1	108 W	72 V	1.5 A	N/A	
Tektronix	PWS4205	1	100 W	20 V	5 A	GPIB	Single-channel, low-noise, programmable, benchtop linear power supply
Keithley	2200-20-5	1	100 W	20 V	5 A	GPIB/USB	
Tektronix	PWS4305	1	150 W	30 V	5 A	GPIB	
Keithley	2200-30-5	1	150 W	30 V	5 A	GPIB/USB	
Tektronix	PWS4323	1	96 W	32 V	3 A	GPIB	
Keithley	2200-32-3	1	96 W	32 V	3 A	GPIB/USB	
Tektronix	PWS4602	1	150 W	60 V	2.5 A	GPIB	
Keithley	2200-60-2	1	150 W	60 V	2.5 A	GPIB/USB	
Tektronix	PWS4721	1	86 W	72 V	1.2 A	GPIB	
Keithley	2200-72-1	1	86 W	72 V	1.2 A	GPIB/USB	
Keithley	2220-30-1	2	45 W	30 V	1.5 A	USB	Two and three channels, low-noise, programmable, benchtop linear power supply
			45 W	30 V	1.5 A		
Keithley	2220G-30-1	2	45 W	30 V	1.5 A	USB/GPIB	
			45 W	30 V	1.5 A		
Keithley	2230-30-1	3	45 W	30 V	1.5 A	USB	
			45 W	30 V	1.5 A		
			30 W	6 V	5 A		
Keithley	2230G-30-1	3	45 W	30 V	1.5 A	USB/GPIB	
			45 W	30 V	1.5 A		
			30 W	6 V	5 A		
Keithley	2231A-30-3	3	90 W	30 V	3 A	Optional USB	Three channels, programmable, benchtop linear power supply
			90 W	30 V	3 A		
			15 W	5 V	3 A		
Keithley	2260B-30-36	1	360 W	30 V	36 A	USB/LAN	Single channel, low-noise, programmable, applicable to automated manufacturing and laboratory testing
Keithley	2260B-30-72	1	720 W	30 V	72 A	USB/LAN	
Keithley	2260B-80-13	1	360 W	80 V	13 A	USB/LAN	
Keithley	2260B-80-27	1	720 W	80 V	27 A	USB/LAN	
Keithley	2280S-32-6	1	192 W	32 V	6 A	GPIB/USB/LAN	Precision measurement power supply（PMS）
	2280S-60-3	1	192 W	60 V	3.2 A	GPIB/USB/LAN	

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PWS2000 Series
Single-channel, Low-noise, Non-programmable Power Supply
Designed for Benchtop Applications

Model	PWS2185	PWS2323	PWS2326	PWS2721
Output Voltage	0 - 18V	0 – 32V	0 – 32V	0 – 72V
Output Current	0 - 5A	0 – 3A	0 – 6A	0 - 1.5A
Output Power	90W	96W	192W	108W
Ripple and Noise (20Hz - 7MHz)				
CV p-p	≤ 3mV			
CV RMS	≤ 1mV			
CC RMS	≤ 5mA			
Programming Accuracy (25°C ±5°C)				
Voltage	≤0.05% + 10mV			
Current	≤0.2％ + 10mA			
Readback accuracy (25 °C ± 5 °C)				
Voltage	≤0.05% + 15mV	<20V: ≤0.05% + 15mV ≥20V: ≤0.05% + 120mV		
Current	≤0.1％ + 15mA			
Dimension	2U high, half rack width			
Others	Store up to 20 sets of user settings			

PWS2000 Features
- Linear power supply with low ripple and noise
- Power up to 192W
- 0.05% voltage programming accuracy
- 0.2% current programming accuracy
- 10mV/10mA programming resolution
- Ripple and noise peak-to-peak value less than 3mV
- Store 20 sets of settings
- Keypad data entry
- Three-year warranty

With their good ripple and noise performance, the PWS2000 Series are excellent supplies for education and lab R&D use.

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PWS4000/Series 2200
Single-channel, Low-noise, Programmable Power Supply Designed for Benchtop and Automated Test Applications

Model	PWS4205 2200-20-5	PWS4305 2200-30-5	PWS4323 2200-32-3	PWS4602 2200-60-2	PWS4721 2200-72-1
Output Voltage	0 – 20 V	0 – 30 V	0 – 32 V	0 – 60 V	0 – 72 V
Output Current	0 – 5 A	0 – 5 A	0 – 3 A	0 - 2.5 A	0 - 1.2 A
Output Power	100 W	150 W	96 W	150 W	86 W
Ripple and Noise (20 Hz-7 MHz)					
CV p-p	<3 mV	<4 mV	<4 mV	<5 mV	<3 mV
CV RMS	<1 mV	<1 mV	<1 mV	<1 mV	<1 mV
CC RMS	<3 mA	<4 mA	<3 mA	<3 mA	<3 mA
Programming Accuracy (25 °C ± 5 °C)					
Voltage	≤0.03% +3 mV	≤0.03%+3 mV	≤0.03%+3 mV	≤0.03%+6 mV	≤0.03%+6 mV
Current	≤0.05%+2 mA	≤0.05%+2.5 mA	≤0.05%+2 mA	≤0.05%+1.5 mA	≤0.05%+1 mA
Readback Accuracy (25 °C ± 5 °C)					
Voltage	≤0.02%+3 mV	≤0.02%+2.5 mV	≤0.02%+3 mV	≤0.02%+6 mV	≤0.02%+5 mV
Current	≤0.05%+2 mA	≤0.05%+2.5 mA	≤0.05%+2 mA	≤0.05%+1.5 mA	≤0.05%+1 mA
Programming	PWS series with USB port, 2200 Series with USB and GPIB ports				
Dimension	2U high, half rack width				
Others	List mode support up to 7seven customized test sequences; each sequence can host 80 voltage and current steps				

PWS4000/2200 Features
- Linear power supply with low ripple and noise
- Power up to 150W
- 0.03% voltage programming accuracy
- 0.05% current programming accuracy
- 1mV/0.1mA programming resolution, high precision power supply suitable for testing low power components
- Remote sense function, further improve output voltage accuracy at the DUT
- List mode supports up to 80 steps to improve ATE test efficiency
- PWS Series supplied with a USB interface; 2200 Series supplied with USB and GPIB interfaces
- Three-year warranty

The PWS4000 and 2200 Series programmable power supplies have excellent accuracy for R&D and manufacturing testing of a wide range of components, sub-assemblies, and end products.

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Series 2220/2230
Two or Three Channels, Low Noise, Programmable Power Supply
Designed for Benchtop Applications

Model	2230-30-1, 2230J-30-1, 2230G-30-1, 2230GJ-30-1			2220-30-1, 2220J-30-1, 2220G-30-1, 2220GJ-30-1	
Output Channel	3			2	
Voltage	0 – 30V	0 – 30V	0 – 6V	0 – 30V	0 – 30V
Current	0 – 1.5A	0 – 1.5A	0 – 5A	0 - 1.5A	0 – 1.5A
Power	120W			90W	
Ripple and Noise					
CV p-p 7MHz	< 3mV	< 3mV	< 3 mV	< 3mV	< 3mV
CV RMS 7MHz	< 1mV	< 1mV	< 1 mV	< 1mV	< 1mV
CC RMS 20MHz	< 5mA	< 5mA	< 6 mA	< 5mA	< 5mA
Programming Accuracy (25°C ± 5°C)					
Voltage	≤0.03%+10mV	≤0.03%+10mV	≤0.03%+10mV	≤0.03%+10mV	≤0.03%+10mV
Current	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA
Readback Accuracy (25 °C ± 5 °C)					
Voltage	≤0.03%+10mV	≤0.03%+10mV	≤0.03%+10mV	≤0.03%+10mV	≤0.03%+10mV
Current	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA	≤0.1%+5mA
Communication	Standard with USB port; 22XXG/GJ with GPIB Port				
Dimension	2U high, half rack width				
Others	All output channel isolated, support output with both positive and negative voltage. Support outputs synchronization and tracking mode				

Series 2220/2230 Features
- Two or three outputs
- Linear power supply with low ripple and noise
- All channels are isolated and can be controlled independently to maximize flexibility
- All channels have remote sensing to ensure maximum voltage accuracy at the DUT
- Two 30V channels can be connected in series or parallel and the display shows total output voltage and current
- 0.03% voltage programming accuracy and 0.1% current programming accuracy
- Three-year warranty
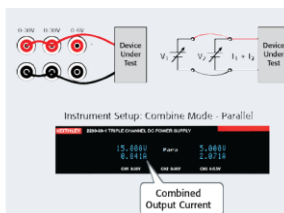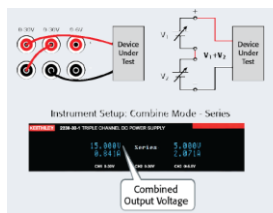
Series 2220/2230 Power Supply connections and operating modes for series and parallel connections

Series 2220/2230 Multi-Channel Power Supplies are excellent for use in student labs, R&D, and test labs.

Model 2231A-30-3 Triple-Channel DC Power Supply Offers Versatility and Ease of Use Designed for Benchtop Applications

Model	2231A-30-3		
Channel	1	2	3
Output Voltage	0 – 30V	0 – 30V	0 – 5V
Output Current	0 - 3 A	0 – 3A	0 – 3A
Output Power	195 W		
Ripple and Noise (20Hz - 20MHz)			
CV p-p	≤5mV		
CV RMS	≤1mV		
CC RMS	≤6 mA		
Programming accuracy (25°C ±5°C)			
Voltage	≤0.06% + 20mV		
Current	≤0.2﹪ + 10mA		
Readback accuracy (25°C ± 5°C)			
Voltage	≤0.06% + 20mV		
Current	≤0.2% + 10mA		
Dimension	2U high, half rack width		
Others	Store up to 27 sets of user settings		

2231A-30-3 Features
- Three independent and adjustable outputs in one instrument
- Power up to 195W
- 0.06% voltage programming accuracy
- 0.2% current programming accuracy
- DC power with less than 5mVp-p noise
- Simultaneous display of all three outputs
- Double output levels by connecting the two 30V channels in series or parallel
- Store 30 sets of settings
- Turn off any output with a programmable timer
- Control from a PC
- Three-year warranty

The Model 2231A-30-3 is a highly cost-effective power supply with 195W of power for student laboratories and laboratory R&D use.

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Series 2260B
Single-Channel Programmable Power Supply
Designed for Automated Test and Benchtop Applications

Model	2260B-30-36	2260B-30-72	2260B-80-13	2260B-80-27
Output Voltage	0 – 30 V	0 - 30 V	0 – 80 V	0 – 80 V
Output Current	0 – 36 A	0 – 72 A	0 - 13.5 A	0 – 27 A
Output Power	360 W	720 W	360 W	720 W
Ripple and Noise (noise bandwidth 20 MHz, ripple bandwidth 1 MHz)				
CV p-p	<60 mV	<80 mV	<60 mV	<80 mV
CV RMS	<7 mV	<11 mV	<7 mV	<11 mV
CC RMS	<72 mA	<144 mA	<27 mA	<54 mA
Programming Accuracy				
Voltage	≤0.05%+10mV	≤0.05%+10mV	≤0.05%+10mV	≤0.05%+10mV
Current	≤0.1%+30 mA	≤0.1%+60 mA	≤0.1%+30 mA	≤0.1%+30 mA
Readback Accuracy				
Voltage	≤0.1%+10 mV	≤0.1%+60 mV	≤0.1%+10 mV	≤0.1%+10 mV
Current	≤0.15%+30 mA	≤0.1%+30 mA	≤0.1%+30 mA	≤0.1%+30 mA
Response Time				
Rise Time	50ms	50ms	50ms	50ms
Fall Time (Full Load)	50ms	50ms	50ms	50ms
Fall Time (No Load)	500ms	500ms	500ms	500ms
Load Transient Recovery Time	1ms	1ms	1ms	1ms
Communication	USB/LAN，GPIB Optional (2260-GPIB-USB adapter)			
Dimension	3U high; 1/3 rack width (720W);1/6 rack width (360W)			
Others	Adjustable output voltage and current slew rate, programming output resistance, serial and parallel connection, CC priority mode			

Series 2260B Features
- Single output, high power density, system power supply
- 360W and 720W output with voltage up to 80V or current up to 72A
- Programmable output voltage and current slew rate to avoid inrush current damage to a DUT
- List function
- Constant current control mode to current overshoot when powering up LED products
- Simulate battery output characteristics using the programmable output resistance function
- Supports analog programming and USB/LAN/GPIB programming for remote control
- Three-year warranty
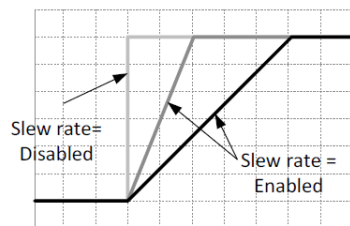
2260B output slew rate control
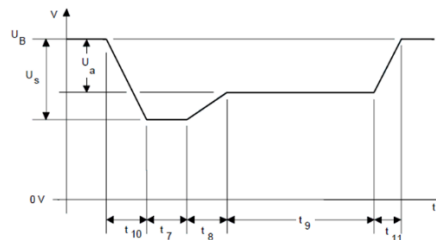
2260B output list function

The Series 2260B Programmable DC Power Supplies provide plenty of power for automated environmental test systems, life testing systems, and production test systems. The programmable slew rates minimize inrush current to protect DUTs, especially for LED product test and Lithium battery charge characterization.

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2280S Precision Measurement Power Supply
Single-channel, Programmable
Designed for Current Drain Analysis

Model	2280S-32-6	2280S-60-3
Output Voltage	0 - 32V	0 - 60V
Output Current	0 - 6A	0 - 3.2A
Output Power	192W	192W
Ripple and noise (20Hz - 20MHz)		
CV p-p: (mV)	5mV	7mV
CV RMS: (mV)	1mV	2mV
CC RMS: (mA)	3mA	3mA
Programming accuracy		
Voltage	≤0.02%+3mV	≤0.02%+6mV
Current	≤0.05%+0.1mA	≤0.05%+0.1mA
Readback accuracy		
Voltage	≤0.02%+2mV	≤0.02%+4mV
Current 1A/10A Range	≤0.05%+250µA	≤0.05%+250µA
10mA/100mA Range	≤0.05%+10µA	≤0.05%+10µA
Readback resolution （under 6.5 digit setting）		
Voltage	10µV	10µV
Current	10nA	10nA
Minimum Measurement Time	0.002 Power Line Cycles	
Response Time		
Voltage Rising Slew Rate	10V/s – 100V/s	10V/s – 100V/s
Voltage Falling Slew Rate	10V/s – 100V/s	10V/s – 100V/s
Load Transient Response Time	<50µs	
Programming	GPIB/USB/LAN (LXI-C)	
Dimension	2U high, half rack width	
Others	Precision measurement power supply with 6½-digit DMM measurement capability, GUI, LXI web interface, output list function and programmable output slew rate	

Series 2280S

- 6½-digit DMM measurement capability to observe load currents from 100nA to 6A
- High speed sampling capability, for capturing load current pulses as narrow as 140µs
- 192W linear power supply with low ripple and noise and <50µs, fast transient response
- Output list function
- Programmable voltage slew rate simulates supply rise time conditions
- GUI with waveform display of output current and voltage
- GPIB/USB/LAN port, with LXI web interface for remote control
- Three-year warranty
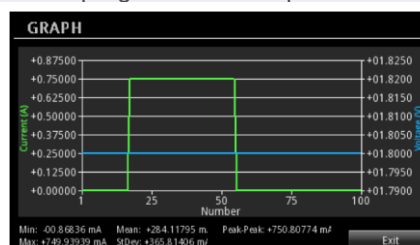
Series 2280S main menu screen (left) and graph screen (right)

The Series 2280S Precision Measurement Power Supply helps R&D and test engineers easily perform current drain analysis on low power products.

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