B+K PRECISION PRODUCT CATALOG

test instruments and accessories

sionals > engineers > designers > students > technicians > service professionals

BK PRECISION
ELECTRONIC TEST INSTRUMENTS

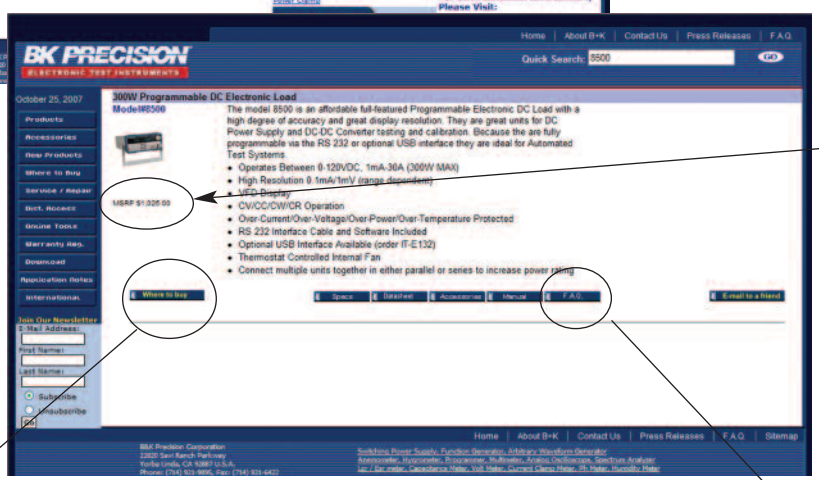
20MHz DDS Sweep Function Generator
Model 4045

www.bkprecision.com

The B+K website answers the important questions:

1. Do we have a product that meets your needs?

Enter a model number in the **Quick Search** box for a detailed product display page or Click on a sub category from the **Product** page.



2. Priced within your budget?

B+K lists Manufacture's Suggested Retail Price(MSRP) for all products.

3. Where can you purchase today?

If you click the "where to buy" icon on the detail product display page, all distributors with stock will be displayed. You may go directly to that distributor website or request a quote without leaving the B+K website.

4. FAQ

Product specific Frequently Asked Questions (FAQ) can be accessed from the product display page.

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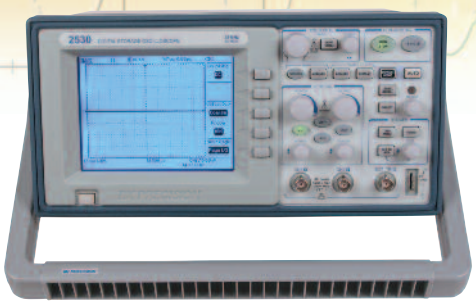
Triple Output Programmable DC Power supply

Model 9130

Products Easy to Find Easy to Use

25MHz Digital Storage Oscilloscope
Model 2530

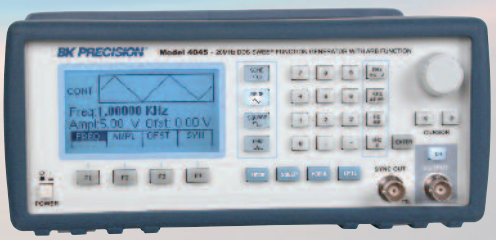


Category Index

Generate Your Own Perfect Waveform

B+K Precision® offers the broadest range of function generators and signal sources in the industry.

- **Growing line of arbitrary waveform generators that let you create complex waveforms for demanding applications in electronic test, design and sensor simulation**
- **Wide range of DDS generators for testing frequencies from DC to 120 MHz**
- **Large selection of low cost analog function generators for education, maintenance and service**



Products Easy to Find Easy to Use

Universal Multiprogrammer
Model 859

Highspeed Programmable Attenuators
Models 6010, 6011, 6012 & 6013

Alpha Numerical Index

Products & Services

Handheld Spectrum Analyzer with Tracking Generator
Model 2652

Single Output Programmable DC Power Supply
Model 9120A

Service/Repair and Calibration Information

B+K Precision® supports products with repair or replacement for at least 5 years after they are discontinued. We stand by our impeccable quality.

If your unit should need repair, please go to our website at www.bkprecision.com to obtain an RMA number. Click on the "Service/Repair" button on our home page. You will find the flat rate repair cost as well as the shipping & handling charges.

Pack the unit well and ship to:

B+K Precision
Attn: Service Dept.
22820 Savi Ranch Parkway
Yorba Linda , CA 92887-4610

If the unit is under warranty, please provide a copy of the proof of purchase with the date of purchase clearly marked.

If the unit is out of warranty, prepayment (check, money order or credit card) is required before any work begins.

Include a brief description stating the problem and whether you want calibration with Certificate (N.I.S.T.), or Calibration with Data (N.I.S.T.). Have return shipping address clearly marked, and a phone number of a contact.

Standard turn around time is ten working days upon receipt of payment, and it does not include shipping time.

Package the unit carefully using the original box or filler and/or bubble wrap. Do not place two units in the same package. B+K Precision® is not responsible for damage to the unit due to shipping.

If there are any additional charges, other than the ones stated in the Service & Repair Cost List, the customer will be notified and informed of the charges. No service will be done to the unit until customer approves costs. If service is refused, customer is still responsible for return shipping.

Prices are subject to change without notice.

Power Supplies




Power Supply Use

A power supply is an electronic instrument that provides either Alternating (AC) or Direct (DC) Voltage/Current to an electronic circuit.

Applications

Power supplies find wide applications in:

- Education - used in technical schools to demonstrate electrical theory
- Design - used in circuit design to power up circuits
- Service - used to power up circuit boards under repair
- Maintenance - used to verify operation for set-up or repair equipment
- Manufacturing - used as part of the manufacturing process to verify operation parameters of designed equipment
- Quality Control - used for final testing of equipment

Series and Parallel Operation

There may be times when you require either more voltage or more current than your power supply provides. B+K Precision's single output power supplies can be hooked up in series to provide more voltage or in parallel to provide more current. On B+K Precision's triple output power supplies, two or three of the outputs can be connected in series or parallel by a mere press of a button.

Which Power Supply is Best for Your Application?

As with any test instrument purchase, you need to consider present and future requirements.
What is the maximum voltage required?
What is the maximum current required?
Are multiple outputs needed?
Review the selection chart on the following page for a preliminary choice, then turn to the specific model number page for complete specifications.

POWER SUPPLY TERMS

CONSTANT CURRENT SOURCE—A regulated power supply that delivers a constant current to a load, even when the load resistance changes.

CONSTANT VOLTAGE SOURCE—A regulated power supply that delivers a constant voltage to a load even when the load resistance changes.

CURRENT LIMITING—Ability to limit maximum current output at a preset value. This feature helps protect the load from overcurrent damage.

ISOLATION—Floating output, no reference to any voltage.

LINE REGULATION—How much the load voltage or current changes when the power supply is operated at varying line voltages throughout a given range. Typically stated as a percentage of the total voltage or current available from the supply. A rating of "0%" would mean perfect regulation.

LOAD REGULATION—How much the load voltage or current changes between operating the power supply at no-load and full-load conditions. Typically stated as a percentage of the total voltage or current available from the supply. A rating of "0%" would mean perfect regulation.

OVERLOAD PROTECTION—Means by which a power supply is protected from permanent damage due to short circuits, excessive loads, or reverse polarities connected across the load terminals. Protection may be as simple as a fuse (which can be economically replaced), or may be electronic protection circuitry which automatically monitors load conditions as well as power supply component temperatures.

POWER CONSUMPTION—The input power that is required by the power supply at a full load output condition.

POWER REQUIREMENTS—The line voltage that the power supply requires to operate. High quality power supplies have a selector switch that permits operation from 110,120, 220 , and 240 VAC sources.

RECOVERY TIME—The time that it takes a power supply to regulate its output after an abrupt change, such as from full load to no load.

REGULATION—The ability to maintain a constant voltage or current at the load despite changes in line voltage or load resistance.

RIPPLE CURRENT— The portion of unfiltered AC current at the output of a filtered power supply.

RIPPLE VOLTAGE—The portion of unfiltered AC voltage and noise present at the output of a filtered power supply, operated at full load. Typically stated as rms and peak-to-peak AC voltage (with zero ripple voltage would represent a perfect power supply).

RMS VALUE (root mean square value)—The "effective" value of an AC or periodic voltage or current. The amount of work accomplished by a given rms value equals the amount of work accomplished by an equal DC value. The rms value can be obtained by first squaring the ordinates of the wave, then finding the average value of the squared wave, finally taking the square root of the average found. The rms value of a pure sine wave is 0.707 times the peak value (RMS = Vp x 0.707), while the rms value of a square wave is 0.5 times the peak value Vp = Peak Value = Vpp.

TRACKING—Two power supplies (within one case) that are electrically coupled so that both can be varied by using only one knob.

TEMPERATURE COEFFICIENT—The change in power supply output voltage that is caused by temperature change. It is usually expressed in millivolts per degree.
VA—Abbreviation for Volt-Ampere. Unit of input power delivered to a load. For electronic equipment, the "VA" load imposed on the isolation transformer or AC power supply is simply the load voltage multiplied by the load current, or the wattage rating of the load.

Power Supplies

Selection Guide

DC Power Supplies

TYPE	VOLTAGE	CURRENT	METERS	MODEL	PAGE
Triple	0-24V (2)	0-0.5A (2)	2 analog	1651A	20
	fixed 5V (1)	0-4A (1)			
	0-24V (2)	0-0.5A (2)	2 digital	1652	
	fixed 5V (1)	0-4A (1)			
	0-30V	0-3A	2 digital	1670A	21
	fixed 5V, 12V	0-500mA (2)			
	0-30V (2)	0-5A (2)	2 digital	1671A	
	fixed 5V, 12V	0-500mA (2)			
	0-32V (2)	0-3A (2)	2 digital	1672	
	fixed 5V (1)	0-3A (1)			
	0-30V (2)	0-2A (2)	2 digital	1760A	20
	4-6.5V (1)	0-5A (1)			
	0-35V (2)	0-3A (2)	2 digital	1761	
	2-6.5V (1)	0-5A (1)			
	0-30V (2)	0-3A (2)	2 digital	9130	14
	0-5V (1)	0-3A (1)			
Single	0-18V	0-5A	2 analog	1620A	18
	0-18V	0-5A	2 digital	1621A	
	0-60V	0-1.5A	2 digital	1623A	
	0-30V	0-3A	2 analog	1626A	
	0-30V	0-3A	2 digital	1627A	
	0-30V	0-1A	2 analog	1710A	16
	0-60V	0-2A	2 analog	1711A	
	0-60V	0-2A	2 digital	1715A	
	0-30V	0-3A	2 analog	1730A	
	0-30V	0-3A	2 digital	1735A	
	0-60V	0-4A	2 analog	1740B	17
	0-35V	0-6A	2 digital	1743B	
	0-35V	0-10A	2 analog	1744A	
	0-35V	0-10A	2 digital	1745A	
	0-16V	0-10A	2 analog	1746B	
Programmable	0-30V	0-3A	2 digital	9120A	12-13
	0-20V	0-5A	2 digital	9121A	
	0-72V	0-1.2A	2 digital	9124	
	0-17.5V (1)	0-6A (2)	2 digital	1770	24
	0-35V (2)	0-3A (1)			
	0-18V	0-5A	2 digital	1785B	24
	0-30V	0-3A	2 digital	1786B	
	0-60V	0-1.5A	2 digital	1787B	
	0-32V	0-6A	2 digital	1788	

Power Supplies

Selection Guide

DC Power Supplies

TYPE	VOLTAGE	CURRENT	METERS	MODEL	PAGE
Multi Range	0-60V	0-5A 100 W Max	LCD	9110	15
Fixed	Fixed 13.8V	0-15A peak	None	1682A	27
	Fixed 13.8V	0-6A peak	None	1680	
High Current	3-14V	0-12A @ 13.8V	2 analog	1686A	25
	3-14V	0-20A @ 13.8V	2 analog	1688A	
	1-15V	28A@≥ 13.8V	2 analog	1689	
	1-15V	28A@≥ 13.8V	2 analog	1690	
	0-32V	0-20A peak	2 digital	1790	26
	0-64V	0-10A peak	2 digital	1791	
	0-32V	0-30A peak	2 digital	1794	
	0-64V	0-15A peak	2 digital	1795	
	0-16V	0-50A peak	2 digital	1796	
High Current & Switching	0-60V	0-20A	2 digital	VSP6020	22-23
	0-20V	0-50A	2 digital	VSP2050	
	0-40V	0-30A	2 digital	VSP4030	
	0-120V	0-10A	2 digital	VSP12010	
	0-60V	0-20A	2 digital	VSP6020GPIB	
	0-20V	0-50A	2 digital	VSP2050GPIB	
	0-40V	0-30A	2 digital	VSP4030GPIB	
	0-120V	0-10A	2 digital	VSP12010GPIB	
Switching	3 - 15V	0-40A	2 digital	1692	27
	1-20V	0-10A	2 digital	1665	19
	1-40V	0-5A	2 digital	1666	
	1-60V	0-3.3A	2 digital	1667	
Programmable & Switching	1-20V	0-10A	LCD	1696	19
	1-40V	0-5A	LCD	1697	
	1-60V	0-3.3A	LCD	1698	

AC

Low Current	120V	0-1.25A Continuous	None	1604A	29
	0-150V	0-2A Continuous	1 analog	1653A	30
	0-150V	0-3A Continuous	1 analog	1655A	
	90-140V 9 steps	0-2.5A Continuous	None	TR-110	29

For Educational & Laboratory Power Supplies Please See Page 28

DC Power Supplies

Single Output Programmable DC Power Supplies
Models 9120A, 9121A, 9124

B+K Precision® models 9120A, 9121A and 9124 are laboratory grade Programmable DC Power Supplies providing great performance and features not found in other supplies in this price category. The 9120 series are designed to meet the need of today's applications in R&D design verification, production testing or university labs that require clean and reliable power, high resolution and accuracy and fast transient response times.

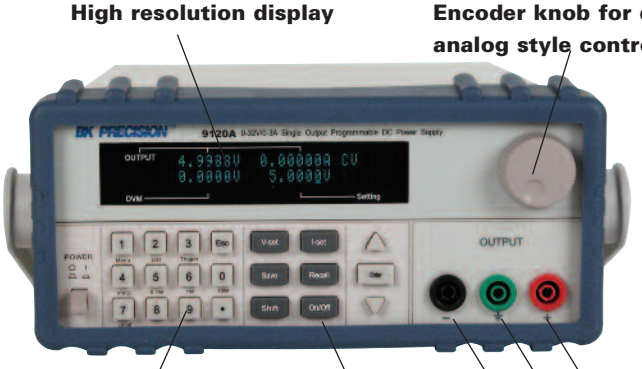
9120A

- **Excellent display resolution**
- **Low ripple and low noise**
- **Excellent temperature stability**
- **Fast transient response time (<20ms)**
- **SCPI compatible**
- **Front and Rear Output Terminals**
- **Closed case calibration**
- **Compact size for bench use or rack mountable (2U x 1/2U size)**
- **List mode operation for increased throughput. Download and execute command sequences from non-volatile memory**

Front Panel Operation
The numeric keys and rotary knob provide a convenient interface for setting output levels quickly and precisely. Voltage and Current can be set to a maximum resolution of 0.5mV (2mV for 9124) and 0.1mA respectively. Up to 50 parameters can be stored and recalled from internal memory.

Selection Chart

	models		
	9120A	9121A	9124
Output Voltage	0-32V	0-20V	0-72V
Output Current	0-3A	0-5A	0-1.2A



TEL. (714) 921-9095, FAX (714) 921-6422

Remote Interface

The power supplies can be remotely controlled from any PC with USB or RS232 interface, allowing you to program and monitor all parameters through easy to use SCPI commands. The power supplies come with a RS232 communication cable. A USB communication cable is available as option.

Extra Features

The 9120's digital port offers a variety of configurations. The port can operate in Digital I/O, external Trigger and DFI/RI (Discrete Fault Indicator/Remote Inhibit) mode. The RI feature can be used for turning several power supplies On/Off simultaneously. External triggering can be used in combination with List mode.

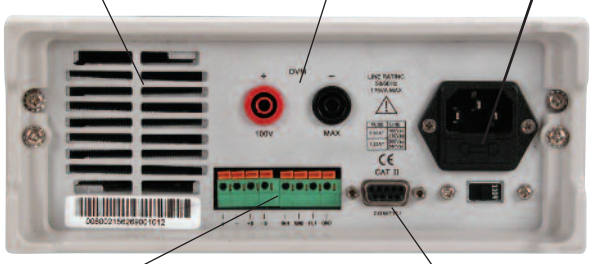
The included Application Software supports front panel emulation and allows users to generate simple test sequences without the need to write source code.

Additionally, the power supply comes with a built-in 51/2 digit DVM and high resolution milliohm meter supporting 4 wire measurements.

Temperature controlled cooling fan

DVM and mΩ meter

User accessible fuse



Remote Sense and digital port functionality

Serial Interface connector for RS232 or USB communication. (USB via optional communication cable)

Specifications

	models 9120A	9121A	9124
Output Ratings (0 °C~40 °C)	0 ~32V 0~3A	0 ~20V 0~5A	0~72V 0~1.2A
Load Regulation ±(%of output+offset)	<0.01%+2mV <0.05%+1mA		<0.01%+2mV <0.05%+0.3mA
Line Regulation ±(%of output+offset)	<0.01%+1mV <0.05%+0.1mA		<0.01%+1mV ≤ 0.05%+0.05mA
Programming resolution	0.1mV 0.1mA		0.1mV 0.05mA
Readback/ Meter resolution	0.1mV 0.01mA	0.1mV 0.05mA	0.5mV 0.01mA
Front panel setting resolution	0.5mV 0.1mA		2mV 0.1mA
Programming accuracy, 12months (25 °C ± 5 °C) ±(%of output+offset)	<0.03%+3mV <0.05%+2mA		≤ 0.03%+6mV ≤ 0.05%+1mA
Readback/ Meter accuracy 12months (25 °C ± 5 °C) ±(%of output+offset)	<0.02%+3mV <0.05%+2mA		≤ 0.02%+5mV ≤ 0.05%+1mA
Ripple & Noise (20Hz ~20MHz)	≤ 4mVp-p 3mArms	≤ 3mVp-p 3mArms	≤ 5mVp-p 3mArms
Temperature coefficient, (0 °C~40 °C) ±(% of output+offset)	<0.02%+3mV <0.05%+2mA		≤ 0.02%+5mV <0.05%+0.5mA
Readback temperature coefficient, ±(% of output+offset)	<0.02%+3mV <0.05%+2mA		≤ 0.02%+5mV ≤ 0.05%+0.5mA
DVM Accuracy	0~12V range: 0.02%+2mV 0~50V range: 0.02%+3mV		
DVM Resolution	0~12V range: 0.1mV 0~50V range: 1mV		
Milliohm Meter	Accuracy: 0.1% (for Voltage and Current >= 10% of FS) Accuracy: 0.3% (for Voltage and Current >= 3% of FS)		
State Storage Memory	50 user configurable memory locations		
Operating Temperature	0 to 40 °C, <75% R.H.		
Storage Temperature	-20 to 70 °C, <85% R.H		
Power Requirements	115V/220VAC ± 10%, 47 to 63Hz		
Weight	19.8 lbs, (9 kg)		
Dimensions	8.45in(W) x 3.8in(H) x 13.9in(D) 214.5mm(W) x 88.2mm (H) x 354.6mm (D)		

Accessories

One Year Warranty

Supplied: User manual, line cord, RS232 communication cable, Software Installation disk
Optional: IT-E132 USB communication cable, IT-E151 rack mount kit,TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

The 9120 Series uses 4mm sheathed banana jacks that accept sheathed or shrouded banana plugs and meet the latest international safety standards

For a list of additional accessories, visit *www.bkprecision.com*

DC Power Supplies

Triple Output Programmable DC Power Supply

Model 9130

The 9130 is a fully programmable triple Output DC Power Supply delivering 0-30V/0-3A on 2 outputs and 0-5V/0-3A on 1 output. Each output is fully floating and outputs can be adjusted independently or connected in series or parallel to produce higher voltages or currents. The 9130 is ideally suited for applications in Electronic Test, Production and Service where multiple independent DC supplies are required and bench space is at a premium.

- **3 independent, fully programmable and electrically isolated outputs**
- **Display & adjust Voltage and Current settings for all 3 channels simultaneously**
- **Flexible output configuration: Connect any 2 or all 3 channels in parallel**
- **Excellent stability and regulation**
- **Very compact foot print (rack mountable 2U x 1/2U)**
- **SCPI compatible command set. Communicate via standard USB communication cable or optional RS232 cable**
- **OVP (Over Voltage) and OTP (Over Temperature) protection**
- **Output on/off control**
- **Application Software for front panel emulation and simple test sequence generation included**
- **50 memory locations for instrument state storage & recall**
- **Closed case calibration**

Specifications

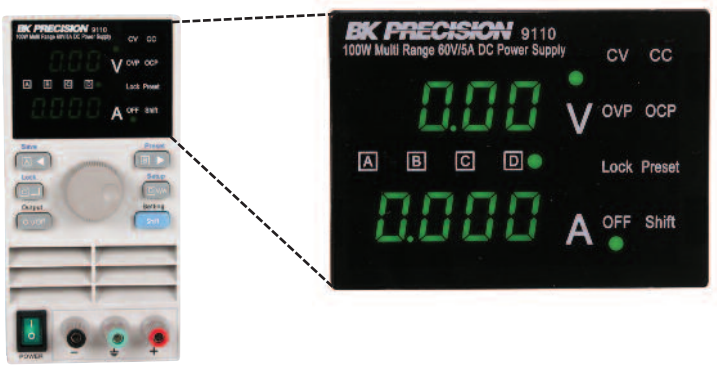
model	9130	
	Voltage	Current
Output Ratings	0 ~ 30V (Ch1 & Ch2)	0 ~ 3A (Ch1 & Ch2)
	0 ~ 5V (CH3)	0 ~ 3A (CH3)
Load Regulation ±(% of output+offset)	≤ 0.01% + 3mV	≤ 0.01% + 3mA
Line Regulation ±(% of output+offset)	≤ 0.01% + 3mV	≤ 0.1% + 3mA
Programming Resolution	1mV	1mA
Readback Resolution	1mV	1mA
Programming Accuracy 12 month, (at 25°C ± 5°C) ±(% of output+offset)	≤ 0.03% + 10mV	≤ 0.1% +5mA
Readback Accuracy 12 month, (at 25°C ± 5°C) ±(% of output+offset)	≤ 0.03% + 10mV	≤ 0.1% +5mA
Temperature Coefficient (0°C ~ 40°C) ±(% of output+offset)	≤ 0.03%+10mV	≤ 0.1%+5mA
Readback Temperature Coefficient ±(% of output+offset)	≤ 0.03%+10mV	≤ 0.1%+5mA
Tracking Accuracy Series Operation		≤ 0.05%+10mA
Tracking Accuracy Parallel Operation	≤ 0.02%+5mV	≤ 0.1%+20mA
Ripple	≤ 1mVrms/3mVp-p	
Noise	≤ 3mVrms	
General		
State Storage Memory	50 memory location	
Timer	Resolution: 1s, Range: 1s~999999s	
Weight	19.8 lbs. (9kg)	
Dimensions (W x H x D)	3.45" x 3.8" x 13.9" 214.5mm x 88.2mm x 354.6mm	

Accessories

One Year Warranty

SUPPLIED: User manual, line cord, USB communication cable, software installation disk
OPTIONAL: RS232 interface cable IT-E131,TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

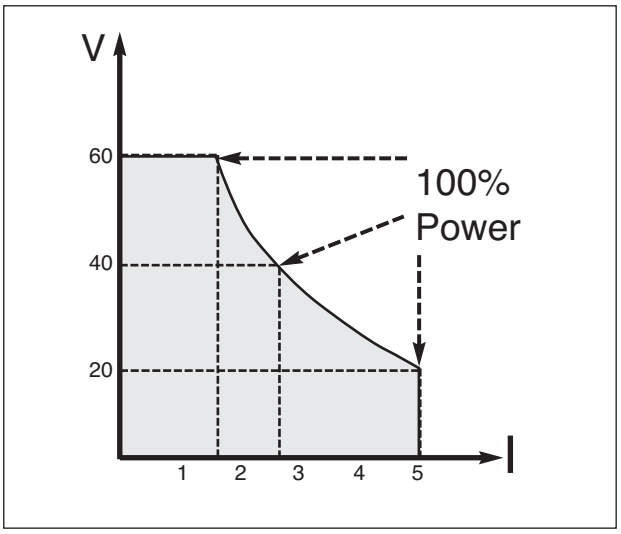
DC Power Supplies



100W Multi Range 60V/5A DC Power Supply

Model 9110

The 9110 is a new type of power supply. Unlike conventional power supplies with fixed output ratings, the 9110 automatically recalculates voltage/current limits for each setting, forming a constant power hyperbolic shaped boundary as illustrated in the diagram below. The 9110 provides 100W output power in any Volt/Amp combination within the rated voltage (60V) and current (5A) limits. By providing greatly expanded choices of Volt/Amp combinations, users can cut down on the number of power supplies required and free up valuable bench space.



Example:
When setting the voltage to the maximum of 60V, the maximum current value is 100W/60V = 1.66A. For a 20V setting, the maximum current is 5A. Full output power of 100W is possible for all Volt/Amp combinations that lie on the hyperbolic curve.

Key Features:

- **Digitally controlled, mixed mode linear/switching DC power supply**
- **10mV/1mA resolution over the full range**
- **Bright, easy to read display**
- **Very compact size and light weight**
- **Low ripple and noise**
- **High reliability due to OCP, OVP and OTP (Over current/voltage/temperature protection)**
- **Output On/Off control**
- **Store and recall 4 x 100 groups of preset Volt/Amp values**
- **Intelligent fan control**

Specifications

	model 9110	
	Voltage	**Current**
Output Ratings	0 ~ 60V	0 ~ 5A
	Max. Power: 100W	
Load Regulation	≤ 0.01% + 3mV	≤ 0.01% + 3mA
Line Regulation	≤ 0.01% + 3mV	≤ 0.1% + 2mA
Setting Accuracy	≤ 0.05% + 10mV	≤ 0.2% + 2mA
Display Accuracy	≤ 0.05% + 10mV	≤ 0.1% + 2mA
Ripple	≤ 2.0 mVrms	≤ 5 mArms

General	
State Storage Memory	100 groups, with 4 sets of Volt/Amp memories each
Weight	5.9lbs (2.65kg)
Dimensions (W x H x D)	3.47" x 6.9" x 11.11" (88mm x 175mm x 282mm)

Accessories

One Year Warranty

SUPPLIED: Line Cord, Manual
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

Single Output DC Power Supplies

Models 1710A, 1711A, 1715A, 1730A & 1735A

B&K 1730A Series are either dual analog or digital display, Single Output Digital DC Power Supplies. The digital display models are bench top units that provide the accuracy of dual 4-digit LED displays offering 10mV and 1mA of resolution. B&K power supplies offer exceptional control and accuracy with dual high-resolution, 4-digit LED or analog readouts at a very reasonable price and are ideal supplies for educational, service and maintenance, or manufacturing applications.

1730A

1735A

Specifications

	models 1710A	1711A	1715A	1730A	1735A
Output Voltage	0-30 V	0-60 V	0-60 V	0-30 V	0-30 V
Output Current	0-1A	0-2 A		0-3 A	
Constant Voltage Operation					
Voltage Regulation					
Line (120VAC ±10%)			≤0.01% + 3 mV		
Load (no load - full load)			≤0.01% + 3 mV		
Recovery Time			≤100 μs		
Ripple & Noise			≤1mV rms		
Temperature Coefficient			≤300 ppm/°C		
Constant Current Operation					
Adjustable Current Limit			5% to 100%		
Current Regulation					
Line (120VAC ±10%)			≤0.2% + 3mA		
Load			≤0.2% + 3mA		
Current Ripple			≤3mArms		
Metering					
Type	2-Analog	2-Analog	Dual 4-digit LED	2-Analog	Dual 4-digit LED
Voltmeter Range	0-32V	0-64V	0-99.99V (green)	0-32V	0-99.99V (green)
Voltmeter Accuracy	±2.5%	±2.5%	± (0.5% rdg + 9 digits)	±2.5%	± (0.5% rdg + 9 digits)
Ammeter Range					
High Range	0-1.04 A	0-2.2 A	0-9.999 A (red)	0-3.2 A	0-9.999 A (red)
Low Range	0-0.26 A	0-0.55 A	--	0-0.53 A	--
Ammeter Accuracy	± 2.5%	± 2.5%	± (0.5% rdg + 9 digits)	±2.5%	± (0.5% rdg + 9 digits)
Overload Protection	Current limiting, reverse polarity, overvoltage, short circuit				
Power Requirements	120/220 VAC ±10%, 50/60 Hz				
Power Consumption	70W	210W	210W	180W	180W
Operating Temperature	32° to 104°F (0° to 40°C), ≤75% R.H.				
Storage Temperature	5° to 158°F (-15° to +70°C), ≤85% R.H.				
Dimensions (HxWxD)	6.2 x 5.5 x 12.5" (158 x 140 x 318 mm)				
Weight	8 lbs.(3.6 kg)	12 lbs.(5.4 kg)	12 lbs.(5.4 kg)	10.5 lbs.(4.7 kg)	10.5 lbs.(4.7 kg)

Accessories

Two Year Warranty

SUPPLIED: Line Cord, Manual
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

- **Largest selection of voltage and current ratings ever offered**
- **Connect two supplies in parallel to double the current output**
- **Connect two supplies in series to double the voltage output**
- **Reliable, Durable**
- **Operate continuously at full load without overheating**
- **Fully overload protected**
- **Coarse and fine voltage controls**
- **Excellent regulation**
- **Very low ripple**
- **Constant voltage or constant current operation**
- **Continuously monitor voltage and current output on two meters**
- **cUL Approved for models 1710A, 1711A, 1715A, 1730A, 1735A**

Optional Accessory

5A Banana Plug Power Supply Cables

TL-5A

- **4mm Banana plug to alligator clip**
- **5A rating**
- **Black and Red pair**
- **40" (1.0m) length**

TEL. (714) 921-9095, FAX (714) 921-6422

1744A

1745A

Single Output DC Power Supplies

Models 1740B, 1743B, 1746B, 1744A & 1745A

B+K Precision® Series1740 are 0 to 60V, 0 to 10A DC Power Supplies. These power supplies have all of the great features you would expect B+K Precision power supplies to have and some new features not normally seen on power supplies in this price range, these features include an output On/Off button and a output-shorting button. The output-shorting button allows the user to short the output terminals to set the current limit.

- **Largest selection of voltage and current ratings ever offered**
- **Connect two supplies in parallel to double the current output**
- **Connect two supplies in series to double the voltage output**
- **Reliable, Durable**
- **Operate continuously at full load without overheating**
- **Fully overload protected**
- **Coarse and fine voltage controls**
- **Excellent regulation**
- **Very low ripple**
- **Constant voltage or constant current operation**
- **Continuously monitor voltage and current output on two meters**

Optional Accessory

30A Power Supply Cable

TL-30

- **#10 Spade Lug to Large Battery Clips**
- **30A rating**
- **Black and Red pair**
- **30" (0.75m) length**

Specifications

models

	1740B	1743B	1746B	1744A	1745A
Output Voltage	0-60 V	0-35 V	0-16 V	0-35V	0-35V
Output Current	0-4 A	0-6 A	0-10A	0-10A	0-10A
Constant Voltage Operation					
Voltage Regulation					
Line (120VAC ±10%)			≤0.2% + 2mV		
Load (no load - full load)			≤0.04% + 2mV		
Recovery Time			≤100 μs		
Ripple & Noise			1mV rms (Typical)		
Temperature Coefficient			≤300 ppm/°C		
Constant Current Operation					
Adjustable Current Limit			5% to 100%		
Current Regulation					
Line (120VAC ±10%)			≤0.4% + 5mA		
Load			≤0.4% + 5mA		
Current Ripple			≤3mArms		
Metering					
Type	2-Analog	Dual 4-digit LED	2-Analog	2-Analog	Dual 4-digit LED
Voltmeter Range	0-64V	0-99.99V (green)	0-16V	0-40V	0-99.99V
Voltmeter Accuracy	±2.5%	± (0.5% rdg + 9 digits)	±2.5%	+2.5%	±(0.7% + 9 digits)
Ammeter Range					
High Range	0-4.4 A	0-9.999 A (red)	0-11 A	0-11 A	0-9.999
Low Range	0-1.1 A	--	0-2.2 A	0-2.2 A	--
Ammeter Accuracy	± 2.5%	± (0.5% rdg + 9 digits)	± 2.5%	± 2.5%	±0.7% + 9 digits
Overload Protection	Current limiting, reverse polarity, overvoltage, short circuit				
Power Requirements	120/220 VAC ±10%, 50/60 Hz				
Power Consumption	450W	420W	380W	560W	560W
Operating Temperature	32° to 104°F (0° to 40°C), ≤75% R.H.				
Storage Temperature	5° to 158°F (-15° to +70°C), ≤85% R.H.				
Dimensions (HxWxD)	5.7 x 10.5 x 15" (145 x 267 x 381 mm)				
Weight	23 lbs.(10.4 kg)	24 lbs.(10.8 kg)	20 lbs.(9 kg)	31 lbs.(14.1 kg)	

Accessories

Two Year Warranty

SUPPLIED: Line Cord, Manual
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

Single Output DC Power Supplies

Digital and Analog Power Supplies

Models 1620A, 1621A, 1623A, 1626A & 1627A

1626A

1627A

- **Connect two supplies in parallel to double the current output**
- **Connect two supplies in series to double the voltage output**
- **New compact style**
- **Reliable, Durable**
- **Operate continuously at full load without overheating**
- **Fully overload protected**
- **Coarse and fine voltage controls**
- **Great regulation**
- **Low ripple**
- **Constant voltage or constant current operation**
- **Continuously monitor voltage and current output on two meters**

Specifications

	models				
	1620A	1621A	1623A	1626A	1627A
Output Voltage	0-18V	0-18 V	0-60 V	0-30 V	0-30 V
Output Current	0-5A	0-5A	0-1.5 A	0-3 A	0-3 A
Constant Voltage Operation					
Voltage Regulation					
Line (120VAC ±10%, -6%)			≤0.02% + 3mV		
Load (no load - full load)			≤0.02% + 3mV		
Recovery Time			≤500ms		
Ripple & Noise			0.5mVrms (Typical)		
Temperature Coefficient			≤300ppm/°C		
Constant Current Operation					
Adjustable Current Limit			0-100%		
Current Regulation					
Line (120VAC ±10%)			≤0.02% + 3mA		
Load			≤0.02% + 3mA		
Current Ripple			≤3mA		
Metering					
Type	2-Analog	Dual 3-digit LED	Dual 3-digit LED	2-Analog	Dual 3-digit LED
Voltmeter Range	0-20V	0-18V	0-60V	0-32V	0-30V
Voltmeter Accuracy	±7% FS	±0.2% + 2 digits	±0.2% +2 digits	±7% FS	±0.2% +2 digits
Ammeter Range	0-5 A	0-9.99 A	0-9.99 A	0-3 A	0-9.99 A
Ammeter Accuracy	±7% FS	±0.2% +2 digits	±0.2% =2 digits	±7% FS	±0.2% +2 digits
Overload Protection	Current, limiting, reverse polarity, overvoltage, short circuit				
Power Requirements	120/220VAC ±10%, 50/60Hz				
Power Consumption	210W	220W	220W	210W	220W
Operating Temperature	32° to 104°F (0° to 40°C), ≤75% R.H.				
Storage Temperature	5° to 158°F (-15° to +70°C), ≤85% R.H.				
Dimensions (HxWxD)	8.07 x 4.53 x 10.63" (205 x 115 x 270 mm)				
Weight	13.2 lbs. (6 kg)	16.3 lbs. (7.4 kg)	16.3 lbs. (7.4 kg)	13.2 lbs. (6 kg)	16.3 lbs. (7.4 kg)

Accessories

One Year Warranty

SUPPLIED: Line Cord, Manual
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

DC Switching Power Supplies

1667

DC Switching Regulated Power Supplies

Models 1665, 1666 & 1667

B+K's family of switching power supplies provides maximum current output continuously with minimal thermal drift. They have been designed with course and fine output voltage and current limiting controls. Bright, front panel mounted 3-1/2 digit LED auto-range meters provide 0.000 Amp readings and 0.00 Volt readings in the low range operation and automatically to 00.00 readings in the high range of the scale

- **Over voltage protection, short circuit protection**
- **Constant voltage operation**
- **Constant current operations**
- **Presetting current limiting value**

Specifications

	models 1665	1666	1667
Output Voltage	1-19V	1-40V	1-60V
Output Current	0-10A	0-5A	0-3.3A
Ripple & Noise	20mV	20mV	20mV
Load Regulation	0.5%+200mV	0.5%+200mV	0.5%+200mV
Line Regulation	20mV	20mV	20mV
Input Voltage	90-265VAC, 50/60Hz		
Meter Type	2 Digital 3 Digit LED		
Meter Accuracy	1%+2 counts		
Dimension (HxWxD)	4.5" x 8" x 10.8" (114 x 203 x 274 mm)		
Weight	6.6 lbs (3 kg)		

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

1696

DC Switching Programmable Power Supplies

Models 1696, 1697 & 1698

BK Precision's models 1696, 1697, and 1698 DC Switching Mode Programmable Power Supplies offer 200 watts of power. This series of laboratory grade, switching mode, programmable power supplies is ideal for repetitive test routines in R&D, Production, Product Evaluation, and various applications.
Information appearing on the large back-lit LCD makes the panel controls simple and easy to use in spite of it's sophisticated features. Because of the MCU (Micro-Controller Unit) and the related software, user re-calibration without opening the case is an added bonus. When used with a standard PC, the supplied user friendly software and built in RS-232 interface provides two way communication improving the functionality of these unit. Data logging with color graphic display in adjusting range Voltage, Amps, Watts, and time periods are all valuable tools in data analysis.

Specifications

	models 1696	1697	1698
Output Voltage	1-20V	1-40V	1-60V
Output Current	0-10A	0-5A	0-3.3A
Ripple & Noise	25mV	25mV	25mV
Load Regulation	0.5%+200mV	0.5%+200mV	0.5%+200mV
Line Regulation	50mV	50mV	50mV
Input Voltage	90 – 265VAC, 50/60Hz		
Display Meter	4 digit – display LCD Ammeter, Voltmeter and Power meter		
Meter Accuracies	1.5% + 2 counts		
LCD Module Back light	48 x 6mm		
Cooling System	thermostatic control fan		
Protection Devices	Over Temperature, Tracking OVP, Over Current		
Approvals	CE		
Dimensions (HxWxD)	3.85"x 7.6" x 8.46" (98 x 193 x 215 mm)		
Weight	6.61 lbs. (3 kg)		

Accessories

One Year Warranty

SUPPLIED: Instruction Manual,Software & Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

Triple Output DC Power Supplies

1761

1652

Triple Output DC Power Supplies

Model 1760A, 1761

- **Two 0-30 VDC, 2 A (1760A) sections capable of independent, series or parallel operation**
- **Two 0-35 VDC, 3 A (1761) sections capable of independent, series or parallel operation**
- **One 4-6.5 VDC, 5 A section (1760A)**
- **One 2-6.5 VDC, 5 A section (1761)**
- **Switchable series/parallel operation — 30 V sections**
- **Adjustable current limit controls — 30 V sections**
- **Two 4 digit LED displays — one reads volts or amps of "B" supply — one reads volts or amps of "A" supply or on third output 4V-6.5V supply**
- **Unique variable tracking, B track A at 5% to 100%**

Compact Triple Output DC Power Supplies

Model 1652, 1651A

- **Two 0 to 24 VDC outputs (0.5A)**
- **One fixed 5V output (4A)**
- **Independent or tracking operation**
- **Adjustable current limiting**
- **Designed to operate continuously at rated output**
- **Short circuit protection, overvoltage protection, reverse polarity protection**
- **Connect outputs in series for higher voltage output or in parallel for higher current output (switch selectable)**

Specifications

	1760A	1761	1652	1651A
Output Voltage	0-30V (A & B)	0-35V (A & B)	0-24 V (A&B)	
	4-6.5 V (C)	2-6.5 V (C)	Fixed 5V output	
Output Current	0-2A (A & B)	0-3A (A & B)	0-500 mA (A&B)	
	5A (C)	5A (C)	Fixed Supply <4 A	
Constant Voltage Operation				
Voltage Regulation				
Line (120VAC ±10%)	≤ 0.01% +3 mV (A&B)		≤ 0.01% +3 mV (A&B)	
	≤ 10 mV (C)		≤ 5 mV for line Fixed supply	
Load	≤ 0.01% +3 mV (A&B)		≤ 0.01% +3 mV (A&B)	
	≤ 10 mV (C)		≤ 50 mV (Fixed)	
Recovery Time	100μs			
Ripple & Noise (5Hz to 1MHz)	≤ 1mVrms		≤ 1mVrms (≤ 5mVrms for fixed output)	
Temperature Coefficient	≤ 300 ppm°C			
Constant Current Operation				
Adjustable Current Limit	5% to 100% (A&B)			
Current Regulation				
Line (120VAC ±10%)	≤ 0.2% + 3mA		≤ 0.2% + 6 mA	
Load	≤ 0.2% + 3 mA		≤ 0.2% + 3mA	
Current Ripple	≤ 3 mA rms			
Metering				
Display	2 digital 4 digit LED		2 digital 3 digit LED	2 Analog
Voltmeter Range	0-99.99 V (A & B)		0-99.9 V (A & B)	0 to 25 V
	0-99.99 V (C)			
Voltmeter Accuracy	± (0.5% rdg + 9 digits)		± (0.5% rdg + 2 digits)	2.5% of full scale
Ammeter Range	0-9.999 A		0-9.99 A	0 to 600 mA
Ammeter Accuracy	± (0.5% rdg + 2 digits)		± (0.5% rdg + 2 digits)	2.5% of full scale
Overload Protection	Current limiting, Reverse polarity, overvoltage, Short circuit			
Power Requirements	108-132 VAC 60 Hz,120/220/230/240/ VAC, ±10%, 50/60 Hz version available			
Power Consumption	350 W		165 W	
Operating Temperature	0° to 40°C ≤ 85% R.H.			
Storage Temperature	-15° to 70°C ≤ 85% R.H.			
Dimensions (H x W x D)	5.7 x 10.5 x 15" (145 x 267 x 381 mm)		5.5 x 11.75 x 10.975" (140 x 298 x 264 mm)	
Weight	21 lbs (9.5 kg)		10.5 lbs (4.8 kg)	

Accessories

	Two Year Warranty	One Year Warranty
SUPPLIED	Instruction Manual, Spare Fuse Line Cord	Instruction Manual, Line Cord Test Leads TL-5(3 pairs), Spare Fuse
OPTIONAL	TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)	

Triple Output DC Power Supplies

Triple Output DC Power Supplies Models 1670A & 1671A

- **One variable 0-30 VDC, 3 A(1670A) section, 5 A(1671A) section**
- **One 12 VDC fixed section**
- **One 5 VDC fixed section**
- **Ideal for general electronic servicing, school electronics labs, and powering up hobbyists projects**

1670A

1672

Quad Display Triple Output DC Power Supply Model 1672

The model 1672 is a quad display triple output regulated DC power supply that provides one fixed output (5V/3A) and two variable outputs (0-32V/ 0-3A) ratings. The variable outputs can work independently, or in series tracking or parallel mode.

Model 1672 offers exceptional performance and is an ideal supply for Educational, Service and Maintenance, Hobbyist and Manufacturing applications.

Model 1672 provides the user with many unique and useful features not normally found in a triple output power at this low price.

Model 1672 features four large, easy-to-read front-panel-mounted 3-digit LED displays – one set reading volts and amps of the "B" supply, the other set reads volts and amps of the "A" supply. The unit has a unique variable tracking, B track A at 5% to 100% capability.

- **Independent control of Voltage and Current controls for variable output.**
- **CV/CC operation.**
- **Separate 3 digit displays for voltage (Green) and current (Red) for both variable outputs.**
- **LED indication for CV (Green)/ CC (Red) mode.**
- **Overload indication LED for Fixed output.**
- **Series tracking and parallel mode operation for Triple output unit.**

Specifications

	models 1670A	1671A	1672
Output Voltage	Main 0-30 VDC		0-32 VDC
	A - Fixed 12VDC ±5%		0-32 VDC
	B - Fixed 5 VDC ±5%		Fixed 5VDC
Output Current	0-3 A Main	0-5 A Main	0-3A
	Fixed 0-500 mA continuous		0-3A
	Fixed 0-500 mA continuous		Fixed 0-3A
Constant Voltage Operation			
Voltage Regulation			
Line (120VAC ±10%)	≤ 0.05% + 10mV Main		≤ 0.01% + 5mV
	≤ 1% (Fixed)		
Load	(0 to rated load) ≤ 0.05% + 10mV		≤ 0.2% + 10mV
	≤ 1% (Fixed)		
Ripple & Noise	≤ 5mVrms		≤ 1mVrms
Adjustable Current Limit	5% to 100% (Main)		5% to 100% (Main)
Current Regulation			
Line (120VAC ±10%)	≤ 0.4% + 10mA		≤ 0.01% + 5mA
Load	≤ 0.4% + 10mA		≤ 0.2% + 8mA
Current Ripple	≤ 10mA rms		≤ 1mA rms
Metering			
Display	3 Digit LCD		4 Digital LED
Voltmeter Accuracy	±(1% reading + 2 digit)		±(1% reading + 3 digit)
Ammeter Accuracy	±(1% reading + 2 digit)		±(1% reading + 3 digit)
Overload Protection	Current limiting, Reverse polarity, overvoltage, Short circuit		
Power Requirements	120/220/ VAC, ±10%, 50/60 Hz		115/230 VAC, 60 Hz
Power Consumption	170 W		
Operating Temperature	0 to 40°C ≤ 75% R.H.		10° to 40°C ≤ 90%R.H.
Storage Temperature	-15° to 70°C ≤ 85% R.H.		
Dimensions (H x W x D)	4.9" x 8.5" x 11.5" (124 x 216 x 292 mm)		9" x 6.7" x 12.2" (230x170x310 mm)
Weight	10.5 lbs (4.5 kg)	14.3 lbs (6.5 kg)	12.6 lbs (5.7 kg)

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

High Power Switching DC Power Supplies

Models VSP2050 (20VDC/50A), VSP4030 (40VDC/30A), VSP6020 (60VDC/20A), VSP12010 (120VDC/10A)

Stackable & Rackable

High-power, low-noise Switching DC Power Supplies

The VSP Power Supplies utilizes modern switch mode technology to produce high-power, low-noise switching supplies that cost around 25 percent less than linear supplies with the same power which offers as much as 1.2 kilowatts in a 19-inch rack mountable chassis that measures just 1U (1.75 inches) in height.

The many outstanding features of the VSP DC Power Supplies are:

- **Precise output voltage control via:**
  1. **manual tuning utilizing front panel mounted ten-turn potentiometers and three-digit meters**
  2. **Remote control from an RS-232 Interface or GPIB Interface (Add "GPIB" to model number)**
  3. **Analog remote sensing automatically maintains desired voltage at load level of power cable.**
- **Provides 1.2 kilowatts at 20V, 40V, 60V or 120V output voltages**
- **Compact 1U (1.75 inch by 19 inch rack mountable chassis)**
- **Up to nine units can be cascaded, producing more than 10 Kilowatts of DC power.**
- **Front-to-back air flow allows full power operation even when stacked.**

Now you can have power without the noise

The new power supplies pack as much as 1.2 kilowatts into a 19-inch, rack-mountable box that measures just 1U (1.75 inches) in height. Furthermore, the VSP Power Supply achieves an energy conversion efficiency of 80%, while keeping noise levels under 20 millivolts.

Behind the performance advantages of the VSP series are advances in switching techniques. Two are particularly significant, soft switching, and two-device asynchronous half-bridge DC to DC converter design. The soft switching technique is a vital step for reducing switching noise. The technique ensures that the switching action will occur when the voltage across the switching device is at a minimum. By turning the switching device on and off in the converter when there is little voltage across it, the transformer load does not see sharp voltage transients. Eliminating that transient gets rid of much of the high-frequency system noise that would otherwise propagate through the transformer to the output stage. It also helps reduce the noise that typically feed back to the source. A built-in RFI filter further reduces power line noise, allowing the supplies to meet EN55022 Class A standards.

The VSP series further reduces noise by using a "piggy back" linear regulator to follow the conversion stage. The total effect is to improve the transient response to the changes in load and to reduce output noise and ripple from the DC converter. Along with controlling output noise, the converter and regulator allow the VSP series devices to offer precise output voltage control.

High Power Switching DC Power Supplies

Specifications

Output Specification	VSP6020*	VSP2050*	VSP4030*	VSP12010*
		models		
Power	1.2KW	1.2KW	1.2KW	1.2KW
Output Voltage	0–60V	0–20V	0–40V	0–120V
Output Current	0–20A	0–50A	0–30A	0–10A
Ripple rms. (10Hz to 1MHz)	≤ 10mV	≤ 15mV	≤ 10mV	≤ 20mV
Noise (10Hz to 20MHz)	≤ 45mVpp	≤ 45mVpp	≤ 45mVpp	≤ 45mVpp
Programming Resolution(Digital Interface), LSB (not LED displays)				
Voltage	20 mV	10 mV	10 mV	100 mV
Current	10 mA	20 mA	10 mA	10 mA
Output Programming Accuracy(Analog Programming 0 To 5v & 0 To 10)				
Voltage	0.5 % of F. S. ± 1 Digit (spec. for all VSP models)			
Current	0.5 % of F. S. ± 1 Digit (spec. for all VSP models)			
Meter Accuracy				
Voltage	+/- 0.2% of F.S. +/- 3 Digit. (spec. for all VSP models)			
Current	+/- 0.2% of F.S. +/- 3 Digit. (spec. for all VSP models)			
Regulation				
CV Line Regulation	0.1 % of F.S (spec. for all VSP models)			
CC Line Regulation	0.1 % of F.S (spec. for all VSP models)			
CV Load Regulation	0.1 % of F.S (spec. for all VSP models)			
CC Load Regulation	0.1 % of F.S (spec. for all VSP models)			
Output Specification				
Stability	0.05%			
Efficiency	80% Minimum			
Transient Response	250 microseconds for load change from 40% to 90%			
Mode Of Operation				
Local Mode Remote Mode	Through front panel potentiometer for voltage, current and over voltage and Push switch for Output ON/ OFF control. Interface Analog programming of voltage and current.			
Voltage	0 - 5 volts or 0 – 10 volts for output voltage and current, selection through DIP-switch.			
Resistance	0 – 4.85k ohms from 0 to full-scale level.			
Digital Interface	RS-232 / GPIB			
Protections				
Over voltage protection	Programmable through POT in local mode and through digital interface in remote mode.			
Over temperature protection	Through 90 °C. Thermal switch on heat sink.			
Input specifications				
Mains Input Range	95Vac to 264Vac.			
Input Frequency	47 To 63 Hz			
Input Power Factor	0.99 On Full Load At Nominal Input.			
Inrush Current	Limited By NTC			
Operating Environment				
Temperature	0 - 50°C			
Relative Humidity	< 80% rh – non condensing			
Storage Temperature	- 20°C. to + 70°C.			
Warm-up Time	15 minutes.			
Safety Standards				
EMI Filtering	EN55022 Class-A			
Safety Class	EN60950			
Mechanical Specifications				
Weight (approx.)	13.7lbs. (6.2 KG.)			
Dimensions (WxHxD)	19 x 1.75 x 18" (483 x 44.5 x 457mm)			
Dimensions with rubber feet	19 x 2.13 x 20" (483 x 54 x 457mm)			

Accessories

One Year Warranty

SUPPLIED: Instruction Manual
OPTIONAL (for all models): TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

* = Specification also apply to corresponding GPIB model (Add GPIB to the model number for a GPIB interface instead of a RS232 interface. Example: VSP6020GPIB)
F.S = Full Scale. Full scale will be different for each model. Example: If you have a VSP2050 and you are measuring the voltage meter accuracy, the meter can not off more than 0.3V (20V + 0.2% +3 digit). Note: 3 digits refers to the power supply displays least significant digit.

Programmable DC Power Supplies

1786B

1770

Programmable DC Power Supplies

Model 1785B, 1786B, 1787B & 1788

Models 1785B, 1786B, 1787B & 1788 are Programmable Power Supplies offering a new level of "ease-of-use" and programmability in a low-cost package. Direct key entry makes voltage and current selection fast, accurate and easy. User programmed outputs allow the operator to preset 99 frequently used voltage and current settings into memory for easy recall. Preprogram a 10 step output routine via the keypad or PC interface for automated testing in production or R&D. Closed case calibration allows for simple, cost-savings, uninterrupted operation.

- **Sixteen user programmable preset outputs**
- **Controllable Output On/Off Switch**
- **10mV/10mA display resolution**
- **Closed case calibration**
- **Low ripple and noise**
- **Excellent temperature stability**
- **Serial interface cable and software included**

B+K Precision power supplies can be used in a wide variety of applications such as: Electronics, Manufacturing, Design Labs, Electronic Education and Battery Charging.

Specifications

models

	1785B	1786B	1787B	1788
Output (DC)	0 - 18V	0 - 30V	0 - 60V	0-32V
Output Current (Amp.)	0 - 5A	0 - 3A	0 - 1.5A	0-6A
Metering Accuracy	+(0.5% + 2 digits)			
Ripple & Noise (RMS)	1mV			
Line Regulation	0.02% + 5mV			
Load Regulation	0.02% + 5mV			
RS-232	Option			
Operating Voltage	"120V, 60Hz (or on request 220 - 240V)"			
Dimension (WxHxD)	"8.07 x 4.53 x 10.63"" (205 x 115 x 270 mm)"			
Weight	11lbs. (5Kg)			
Display	LED Voltmeter & Ampmeter			

Accessories

Two Year Warranty

SUPPLIED: User Manual, Serial Cable, Windows® & DOS Software, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

GPIB Programmable Power Supply

Model 1770

The model 1770 features excellent reliability (50K hrs. MTBF) and user flexibility. You can choose voltages to 35VDC, currents to 6A in single output model, and rest assured you'll find the quality you have come to expect from B+K.

- **Excellent programming resolution and accuracy**
- **Integral system software makes in-case calibration quick and accurate**
- **Large character LCD display assures fast, "easy-to-read" measurements**

Specifications

model

	1770
DC Output MAX Ratings	
Voltage	0-17.5V; 0-35V
Current	0-6A; 0-3A
Programming Resolution	
Voltage	10mV
Current	2mA
OVP	200mV
Programming Accuracy	
Voltage	0.05% +2 LSB
Current	0.15% +5 LSB
OVP	2.4% +0.3V
Line Regulation (120V ±10%)	0.001%
Load Regulation	0.001% + 1mV
Ripple & Noise	1mVrms
Operating Voltage	110 - 120VAC, 220 - 230VAC
Dimensions (W x H x D)	8.4 x 5.2 15.7 (213 x 132 x 398mm)
Weight	18lbs. (8.1kg)
Display	4 digit alphanumeric LCD

Accessories

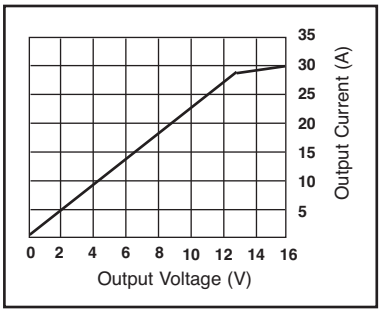
Three Year Warranty

SUPPLIED: User Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

DC Power Supplies

1690

1688A



* Graph showing the relationship the output voltage has on the output current. (Models 1689 & 1690)

These B+K high current DC power supplies are designed for continuous duty and are ideal substitutes for car batteries in applications such as servicing/demonstrating high-power car stereos, cellular phones, camcorders, and ham radios. Hobbyists, retailers, and service shops use car batteries to power mobile equipment. Car batteries are heavy, can't tolerate shorted outputs, and must be recharged.

These Power Supplies provide their maximum current output without overheating. For higher output, just connect two or more in parallel or series. These are the only high-current supplies in their price range built to provide continuous duty.

Regulated 28A DC Power Supplies

Model 1689 & 1690

The new B+K Precision Regulated 28A DC Power Supplies 1689 & 1690 offer multiple DC output terminals; two pairs of 3A, snap-in DC connectors are easily accessible on the front panel, and a pair of 28A screw-on DC output terminals are located on the rear panel. Both models provide their maximum current output continuously hour after hour without thermal drifting. They are ideal car battery substitutions for servicing or demonstrating high power car stereo, cellular phone products, or even ham radio.

- **1VDC to 15VDC Variable Output**
- **28A Output at ≥13.5VDC**
- **Overload protection**
- **High RFI stability**
- **Multiple DC Output Terminals.**

Specifications

models

	1689	1690
DC Output MAX Ratings		
Voltage	1-15V	
Current	*28A (@13.8V)	
Meter Accuracy	7% F.S	±(0.2% + 2 digits)
Line Regulation	5mV (±2% Load)	
Load Regulation	50mV (0-100% Load)	
Ripple & Noise (RMS)	5mV	
Operating Voltage	120 VAC, 60 Hz	
Dimension (W x H x D)	9.84 x 5.5 x 8.86" (250 x 140 x 225mm)	
Weight	19.9 lbs. (9kg)	
Display	Precision Analog	Digital LED

Accessories

One Year Warranty

SUPPLIED: User Manual, Line Cord
OPTIONAL: TL-30

Variable Voltage - 3 to 14 volts DC

Models 1686A & 1688A

- **20 A guaranteed @ 13.8v (Model 1688A)**
- **12 A guaranteed @ 13.8v (Model 1686A)**
- **Current limiting overload protection**
- **Over voltage protection**
- **Short circuit protection**
- **Reverse polarity protection**
- **Thermostatically controlled cooling fan**
- **Thermal protection**
- **Operates continuously at full load without overheating**

Specifications

models

	1686A	1688A
Output		
Output Voltage	3 to 14 VDC	
Output Current	Proportional to Output Voltage	
DCV Output-Max DCA	3V -2.5A 5V - 4.5A 9V - 7.5A 12V - 10A 13.8V - 12A 14V - 12A	3V -4.5A 5V -7.5A 9V -13A 12V -20A 13.8V -20A 14V -20A
Line Regulation	(108-132VAC)≤ 0.8%	
Ripple and Noise	≤ 10mVrms.	
Metering		
Voltmeter Range	0-20V	0-30V
Voltmeter Accuracy	±7% F.S	
Ammeter Range	0-20A	0-30A
Ammeter Accuracy	±7% F.S	
General		
Power Requirements	120/220 VAC ±10%, 50/60 Hz.	
Power Consumption	400W	580W
Operating Temperature	32° to 104°F (0° to 40°C), ≤ 85% R.H.	
Storage Temperature	5° to 158°F (-15° to 70°C), ≤ 75% R.H.	
Dimensions (HxWxD)	4.9 x 8.5 x 11.5" (124 x 216 x 292mm)	
Weight	12.1 lbs. (5.5kg)	19.8lbs. (9kg)

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

High Current DC Power Supplies

1791

1794

High Current DC Power Supplies

Models 1790, 1791, 1794 1795 & 1796

Models 1790's are cost effective, high power, regulated DC power supplies with high power. Suitable for bench operation or standard operation. These linear power supplies are high power workhorses that will easily deliver clean power to your high-current circuits.

Ideal for telecom application

Since noise elimination is critical for telecom application, the 1790 series DC power supplies offer low noise output, so that the power supply does not interfere with testing of telecom devices. These 1790's are ideal for manufacturers who build equipment for telecom industry that operates from 48V or higher DC rail such as base stations, switches, public and private telecom network equipment, PBX system and DC to DC power supplies that provide power to this equipment.

These well-regulated constant voltage/constant current supplies can be adjusted continuously throughout the output range by front panel controls. The units will automatically cross over from constant voltage to constant current mode and vice-versa if the output exceeds preset limits. Front panel LED meters are provided for monitoring voltage and current. The load terminals and remote sense terminals are located on the front panel. Either the positive or negative output terminal may be grounded or floated up to a maximum of ±300VDC above ground.

Special features include the ability to set constant current with no load and remote sense to compensate for any wire loss. These power supplies have superior performance to comparable models costing 20 to 30% more.

Specifications

	models				
	1790	1791	1794	1795	1796
Output Voltage (DC)	0-32V	0-64V	0-32V	0-64V	0-16V
Output Current (DC)	0-20A	0-10A	0-30A	0-15A	0-50A
Constant Voltage Mode					
Line Regulation (120V±10%)	±0.01% ± 2mV				
Load Regulation	±0.01% ± 2mV				
Ripple and Noise	≤1mV rms max (20Hz - 20MHz)				
Constant Current Mode					
Line Regulation (120V±10%)	±0.05% ± 10mA				
Load Regulation	±0.05% ± 10mA				
Ripple and Noise	≤ 6mA rms Max (20Hz - 20MHz)				
Overload Protection	Constant current type				
Stability	± 0.2% ± 10mV in CV mode ± 0.5% ± 10mA in CC mode				
Operating Temperature	32° to 104°F (0° to 40°C)				
Power Requirement	120V, 60 Hz ±10% (230V, 50Hz Version Available)				
Dimension (W x H x D)	19 x 5.25 x 15.75" (483 x 133 x 400 mm)				
Weight	62 lbs. (28.1 kg)				

Accessories

Two Year Warranty

SUPPLIED: User Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

- **Constant Voltage/Constant Current Operation**
- **Remote Programming Facility**
- **Facility for Presetting the Output Voltage and Max. Load Current Limits**
- **Separate DC Output ON/OFF Switch**
- **Remote Sensing Facility**
- **High Stability and Close Regulation ±0.01%**

Switch Mode & Fixed DC Power Supplies

1680

1682A

Fixed Voltage DC Power Supplies

Models 1680 & 1682A

- **13.8 volts DC output (fixed)**
- **Model 1680: 6 A peak**
- **Model 1682A: 15 A peak**
- **Current foldback overload protection**
- **Short circuit protection**
- **Reverse polarity protection**
- **Thermostatically controlled cooling fan (Model 1682A)**
- **Convenient cigar lighter output (Model 1680)**

Specifications

	models 1680	1682A
Output		
Output Voltage	Fixed 13.8 V ±0.5V	Fixed 13.8 V ±0.5V
Output Current	6 ADC peak, 4 ADC continuous	15 ADC peak,12 ADC continuous
Line Regulation	(110-132VAC)≤ 130 mV	(110-132 VAC) ≤ 0.8%
Ripple and Noise	≤ 10mV rms	
General		
Power Requirements	110-132 VAC, 60 Hz	
Power Consumption	185W	400W
Temperature Range		
Operating	0° to 40°C, ≤ 75% R.H.	
Storage	-15° to 70°C, ≤ 85% R.H.	
Dimensions(HxWxD)	3-5/8 x 6-5/16 x 6-3/4" (92 x 160 x 170 mm)	8.1" x 4.5" x 10.6" (205 x 115 x 270 mm)
Weight	6.5 lbs. (2.9kg)	15 lbs. (6.75kg)

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

Switch Mode Power Supply

Model 1692

The B+K 1692 Switching Mode DC Power Supply provides high current output in a lightweight and compact package. It is suitable for a variety of uses, especially for powering DC operated mobile radio equipment on the bench. It provides a variable voltage output from 3V to 15V at 40A continuous operation. In addition a fixed 13.8 VDC output is also selectable by a variable control knob. Switching mode power supplies have the advantage of light weight and high efficiency when compared to traditional linear mode power supplies. The efficiency can exceed 80% under the best conditions. Advanced circuitry protects against overload and provides immunity from RFI. A bright red and green LED display provides for an accurate and highly readable indicator of settings.

- **Lightweight and compact**
- **High efficiency**
- **Current fold-back circuitry with illuminated indicator prevents overloading the power supply**
- **Over temperature protection circuitry**
- **Over voltage protection prevents abnormal high output voltage**
- **High RFI stability**
- **Variable output 3V to 15V at 40A**

Specifications

	model 1692
Output Voltage	3 - 15V or fixed 13.8VDC (selectable)
Output Current	40A continuous
Ripple and Noise	≤10mVrms
Line Regulation (120V±10%)	80mV
Load Regulation	230mV (0 - 100% load)
Power Requirements	120 VAC, 60 Hz
Metering	Dual color digital LED
Dimensions (HxWxD)	8.67 x 4.33 x 11.82" (220 x 110 x 300 mm)
Weight	7.7 lbs. (3.5 kg)

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

Educational / Laboratory Power Supplies

These power supplies provide AC and DC voltages for low current student work while saving precious bench space. These unit's steel case comes with projecting cover that protects the controls and connections and will withstand years of student abuse.

Model 1501
Dual Voltage 1.5V or 3V High Current (3A) Battery

Model 1502
Heavy Duty Battery Eliminator

Model 1503
12 VAC/DC Power Supply

Model 1504
Compact 12V AC & DC Power Supply (500mA) Heavy Duty Battery Eliminator

Model 1505
Regulated DC Power Supply

Model 1506
Regulated AC/DC Power Supply (12V AC/DC 2Amps x 2)

Model 1510
Discharge Tube Power Supply

Model 1511
Discharge Tube Power Supply

Model 1520
Universal Power Supply

Specifications

	models								
	1501	1502	1503	1504	1505	1506	1510	1511	1520
Output Voltage	3VDC	1.5VDC	0-12VDC	0-12VDC	0-20VDC	0-12VDC(2)	0-20VDC		0-5 VDC
	1.5VDC	3VDC	12VAC	12VAC		0-12VAC(2)	0-50VDC		6.3VAC
		4.5VDC				0-115VAC	0-500VDC		8VDC
		6VDC					AC1 1.0V		+8VDC
		9VDC					AC2 2.1V		250VDC
		12VDC					AC3 3.2V		+250VDC
							AC4 4.2V		125VDC
							AC5 5.3V		+125VDC
							AC6 6.3V		
Output Current	3A	0.5A	5A	0.4A	0.5A	2A	5A		3A
							10mA		3A
							10mA		100mA
							200mA		10mA
									10mA
Metering	N/A	N/A	2 Analog	N/A	N/A	Analog	2 Analog	2 Digital	N/A

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL 5A (5A test leads), TL 30 (30A test leads), TLPS (Power supply test lead kit)

DC Power Supplies & Isolation Transformers

Switching Mode Power Supplies

Models 1513, 1514

The models 1513 & 1514 are DC Power Supplies that uses switching mode technology. They provides six ranges of selectable voltages for many applications.

- **Plastic Housing**
- **Six ranges of selectable Voltages Output**
- **Overload and Short circuit protection**
- **Slim in size & light weight**
- **High Stability**
- **Fashionable design**
- **Wide range of operation Voltages**

Specifications

	models 1513	1514
Output Voltage	3V	
	4.5V	
	6V	
	9V	
	12V	
Output Current	1 Amps	3 Amps
Ripple & Noise (rms)	25mV	
Line Regulation	60mV	
Load Regulation	300mV	
Operating Voltage	120VAC/60 Hz	
Dimensions (W x H x D)	90 x 50 x 140mm	

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord
OPTIONAL: TL-5

1513

Dual Output Isolation Transformer

Model TR-110

Use Model TR-110 for safe testing of transformerless equipment.

- **Direct: Convenience duplex outlet provides line voltage for auxiliary equipment up to 500 VA**
- **Isolated: Two 3-position slide switches provide 9 combinations of voltage selection from 90 to 140 V*, up to 350 VA continuous or 500 VA intermittent. Self-contained power switch with pilot lamp**

Specifications

	model TR-110
Input Requirements	105-130 VAC, 60 Hz.
OUTPUT POWER RATING	
Direct	500 VA continuous. Isolated: 350 VA continuous, 500 VA intermittent.
CONNECTIONS	
Direct	Duplex outlet (3-conductor).
Isolated	Duplex outlet (3-conductor).
GENERAL	
Regulation	No load (350 VA), voltage change<4%.
Isolation	Complies—UL standard 1012, May 1977.
Dimensions (HxWxD)	5.1 x 5.5 x 8" (130 x 140 x 200 mm)
Weight	11 lbs. (5 kg)
*Output voltages rated w/input at 120 volts.	

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord

TR-110

Isolation Transformer

Model 1604A

Use Model 1604A for safe testing of transformerless equipment.

- **Leakage: less than 0.1 mA**
- **Output Voltage: 117-124 V nominal (120 V input)**
- **Output Current: 1.25 A continuous**

Specifications

	model 1604A
Isolation	leakage less than 0.1 mA
Output Voltage	117-124 V nominal (120 V input)
Output Current	1.25 A continuous (2A intermittent)
Power Requirements	120 VAC, 60 Hz, 175W
Operating Temperature	32° to 104°F (0° to +40°C)
Dimensions (HxWxD)	4 x 4 x 5.5" (100 x 100 x 140 mm)
Weight	6 lbs. (2.7 kg.)

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord

1604A

Variable Isolated AC Power Supplies

1653A

1655A

Model 1653A

Variable Isolated AC Power Supply. Model 1653A is a compact, rugged unit.

- **Variable isolated 0-150 VAC**
- **2A continuous output**
- **Displays voltage or current readings**
- **Isolation transformer to eliminate shock hazard while servicing "hot chassis" equipment**

Model 1655A

Variable Isolated AC Power Supply. Model 1655A displays V, A, VA and leakage.

- **Variable-isolated output—0-150VAC**
- **3A continuous, 4A intermittent output**
- **Built-in solderingiron temperature control**
- **Expanded leakage scale**
- **Circuit breaker overload protection**
- **Displays V, A, VA, leakage**

Specifications

models

	1653A	1655A
Voltage Adjustment Range	0-150 VAC with input at 120VAC	
Output Isolation	Leakage less than 0.1mA (25°C, 50% RH)	
Current Range	0 - 2A	0 - 3A
Maximum Current (Isolated)	2A continuous (0-130V)	3A continuous, 4A intermittent (0-130V)
Peak Current (inrush)	N/A	30A max. (inrush limited to one cycle at30A)
Voltage/Current Sensing	Sine wave average, calibrated in RMS	
Meter Scale	0-150 VAC 0-2 VAC	0 - 150VAC 0- 240VA (voltage set at 120)
Leakage		0 - 5000 μA (expanded in 100 - 500 μA portion, compressed to 5mA full scale)
Metering	3 1/2" overrange protected	4 1/2 multicolor scales, overrange protected
Meter Accuracy	±5% of full scale	±5% of full scale(volts and current) ±5% at 500μA(leakage)
Soldering Iron Temp. Control		70 - 99% of power line (100W max.)
Power Requirements	120 VAC ±10%, 60 Hz 300VA at Maximum Output	120 VAC ±10%, 60 Hz 600VA at Maximum Output
Dimensions (HxWxD)	5.5 x 6.5 x 10.5" (140 x 165 x 267 mm)	10.5 x 5.7 x 12" (267 x 145 x 305 mm)
Weight	12 lbs. (5.5 kg)	22 lbs. (10 kg)

Accessories

One Year Warranty

SUPPLIED: Instruction Manual, Line Cord

Soldering Iron Temperature Control (Model 1655A only)

The Need for Temperature Control

Most servicing work requires the use of a soldering iron. If the soldering iron is plugged in only when it is needed, time is wasted waiting for the iron to heat up. But if it is left plugged in all the time, oxidation quickly erodes the tip. Also, soldering iron temperature varies with line voltage. Some irons reach the ideal temperature at 105 to 110 volts. As a result, at 120 volts, some soldering irons are too hot, which can more easily damage components being replaced or cause separation of circuit board plating.

Electronic Load

300W Programmable DC Electronic Load Model 8500

The model 8500 is an affordable full-featured Programmable Electronic DC Load with high accuracy and display resolution. They are great units for DC Power Supply and DC-DC Converter testing and calibration. Because this is fully programmable via the RS 232 or optional USB interface, it is ideal for Automated Test Systems.

- **Operates Between 0-120VDC, 1mA-30A (300W MAX)**
- **High Resolution 0.1mA/1mV (range dependent)**
- **VFD Display**
- **CV/CC/CW/CR Operation**
- **Over-Current/Over-Voltage/Over-Power/Over-Temperature Protected**
- **RS 232 Interface Cable and Software Included**
- **Optional USB Interface Available (order IT-E132)**
- **Thermostat Controlled Internal Fan**

The Model 8500 Programmable DC Electronic Load includes the necessary control and firmware capabilities to make it a complete and self-contained solution for automated functional testing of power devices. Through the front panel, test programs can be generated and then repeatedly executed with a single keystroke. Test results can be sent to the front panel, printer or a PC. The Model 8500 can be used as a stand-alone, bench top load or as a PC controlled subsystem within a larger automatic test station.

Optional Accessory

USB Interface Kit
Model IT-E132

Specifications

model 8500

	Voltage	Current	Power
Input rating(0 ~ 40°C)	0 to 120V	1mA to 30A	300W
	Range	**Accuracy**	**Resolution**
Load Regulation			
	0-18V	±(0.05%+0.02%FS)	1mV
	0-120V	±(0.05%+0.025%FS)	10mV
	0-3A	±(0.1%+0.1%FS)	0.1mA
	0-30A	±(0.2%+0.15%FS)	1mA
CV Mode Regulation	1.5-18V	±(0.05%+0.02%FS)	1mV
	1.5-120V	±(0.05%+0.025%FS)	10mV
CC Mode Regulation	0-3A	±(0.1%+0.1%FS)	0.1mA
	0-30A	±(0.2%+0.15%FS)	1mA
CR Mode Regulation	0.1-10Ω	±(1%+0.3%FS)	0.001Ω
Input Current ≥ FS 10%	10-99Ω	±(1%+0.3%FS)	0.01Ω
Input Voltage ≥ FS 10%	100-999Ω	±(1%+0.3%FS)	0.1Ω
	1K-4KΩ	±(1%+0.8%FS)	1Ω
CW Mode Regulation	0-100W	±(1%+0.1%FS)	1mW
Input Current ≥ FS 10%	100-300W	±(1%+0.1%FS)	10mW
Input Voltage ≥ FS 10%			
Current Measurement	0-3A	±(0.1%+0.1%FS)	0.1mA
	0-30A	±(0.2%+0.15%FS)	1mA
Voltage Measurement	1.5-18V	±(0.02%+0.02%FS)	1mV
	1.5-120V	±(0.02%+0.025%FS)	10mV
Power Measurement	0-100W	±(1%+0.1%FS)	1mW
Input Current ≥ FS 10%	100-300W	±(1%+0.1%FS)	10mW
Input Voltage ≥ FS 10%			

General	
Battery testing function	
Input	0.8-120V/500V
Max measurement capacity	999A/H
Resolution	10mA
Timer range	1~60000sec
Transition Mode	
Range of Frequency	0.1Hz-1kHz
Frequency error rate	<0.5%
Weight	11.6lb. (5.25kg)

Accessories

One Year Warranty

SUPPLIED: Instruction manual, software & communication cable IT-E131
OPTIONAL: USB interface kit IT-E132, rack mount IT-E151

Electronic Load

600W Programmable DC Electronic Load
Model 8510

The model 8510 is a cost effective Programmable DC Electronic Load with a high degree of accuracy, great display resolution and a wide operating range of up to 120A or 120V, 600W max. The 8510 is well suited for testing and calibrating DC Power supplies, DC-DC Converters and batteries. Programmability via the RS 232 or optional USB interface makes the units ideal for the use in Automated Test Systems.

- **Operates between 0-120VDC, 1mA-120A (600W max)**
- **High resolution 1mA/1mV (range dependent)**
- **Bright easy to read display (VFD technology)**
- **CV/CC/CW/CR operation**
- **Over-Current/Over-Voltage/Over-Power/OverTemperature Protected**
- **RS 232 Interface cable and software included**
- **Optional USB interface cable available (order IT-E132)**
- **Thermostat controlled internal fan**
- **Battery test capability**
- **Generate complex test sequences without the need of an external PC**

Programmability via the RS 232 or optional USB interface makes the Model 8510 suitable for use in automated test systems The 8510 is a ready-to-run test solution that allows the test engineer to immediately start testing.

Optional Accessory

Rack Mount
Model IT-E151

The unit showing is not included

Specifications

model 8510

	Voltage	Current	Power
Input rating(0 ~ 40°C)	0 to 120V	1mA to 120A	600W
	Range	**Accuracy**	**Resolution**
Load Regulation			
	0-18V	±(0.05%+0.02%FS)	1mV
	0-120V	±(0.05%+0.025%FS)	10mV
	0-12A	±(0.1%+0.1%FS)	1mA
	0-120A	±(0.2%+0.15%FS)	10mA
CV Mode Regulation	0.1-18V	±(0.05%+0.02%FS)	1mV
	0.1-120V	±(0.05%+0.025%FS)	10mV
CC Mode Regulation	0-12A	±(0.1%+0.1%FS)	0.1mA
	0-120A	±(0.2%+0.15%FS)	1mA
CR Mode Regulation	0.1-10Ω	±(1%+0.3%FS)	0.001Ω
Input Current ≥ FS 10%	10-99Ω	±(1%+0.3%FS)	0.01Ω
Input Voltage ≥ FS 10%	100-999Ω	±(1%+0.3%FS)	0.1Ω
	1K-4KΩ	±(1%+0.8%FS)	1Ω
CW Mode Regulation	0-100W	±(1%+0.1%FS)	1mW
Input Current ≥ FS 10%	100-600W	±(1%+0.1%FS)	100mW
Input Voltage ≥ FS 10%			
Current Measurement	0-12A	±(0.1%+0.1%FS)	1mA
	0-120A	±(0.2%+0.15%FS)	10mA
Voltage Measurement	0-18V	±(0.02%+0.02%FS)	1mV
	0-120V	±(0.02%+0.025%FS)	10mV
Power Measurement	0-100W	±(1%+0.1%FS)	1mW
Input Current ≥ FS 10%	100-600W	±(1%+0.1%FS)	100mW
Input Voltage ≥ FS 10%			
General			
Battery testing function			
Input		0.8-120V	
Max measurement capacity		999A/H	
Resolution		10mA	
Timer range		1~60000sec	
Transition Mode			
Range of Frequency		0.1Hz-1kHz	
Frequency error rate		<0.5%	
Weight		30.8lb. (14kg)	

Accessories

One Year Warranty

SUPPLIED: Instruction manual, software & communication cable IT-E131
OPTIONAL: USB interface kit IT-E132, rack mount IT-E151