

## Programmable AC Power Sources

### 9810 Series



The 9810 Series Programmable AC Power Sources deliver 500 VA or 1000 VA through the universal line output terminals on the front and the output connector on the rear. The output can be varied from 0 to 300 V with 0.1 V resolution, and the frequency can be adjusted from 45 Hz to 500 Hz.

This series offers advanced list mode programming for up to 50 programs with 9 steps per program. Configure each step to run individually or connect steps and programs to run sequentially. Additionally, the surge/dropout function allows users to create complex test scenarios and simulate common power grid faults and disturbances.

Ensure the safety of devices under test with built-in output protections for overvoltage (OVP), overcurrent (OCP), overpower (OPP), and overtemperature (OTP).

The 4.3-inch LCD allows users to easily adjust settings and monitor measurements for AC voltage and current, peak current, frequency, power factor, and crest factor.

For remote operation and system integration, the 9810 Series provides USB (VCOM) and RS232 interfaces as standard. The REMOTE terminal allows for seamless integration into a Programmable Logic Control (PLC) system and the SIGNAL OUT terminal provides signals for monitoring pass/fail and test status during Pass/Fail testing.

#### Applications

The 9810 Series AC power sources are ideal for evaluating transformers, TRIACs, SCRs and passive components as well as production, R&D, service, and pre-compliance testing. Simulate global AC power conditions and real-world power surge/dropout events.

#### Features and benefits

- 0 to 300 V, low distortion AC power source with 500 VA and 1000 VA models
- Output frequency adjustable from 45 Hz to 500 Hz
- Displays Vrms, Irms, Ipeak, frequency, power factor, crest factor, and elapsed time measurements
- Switch between three different output controls
  - Manual output control
  - List program mode
  - Continuous mode
- Store setting parameters and test results
- Multiple protections for overvoltage (OVP), overcurrent (OCP), overpower (OPP), and overtemperature (OTP)
- Thermostatically-controlled fans for quiet operation
- 4.3" LCD screen
- Built-in PLD and dimmer simulation
- Pre-compliance testing for voltage dips and frequency simulations according to IEC61000-4-11 / 4-14 / 4-28
- OC fold feature limits current supplied by reducing the voltage
- Remotely monitor Pass/Fail results with the SIGNAL OUT 6-pin terminal
- USB (VCOM) and RS232 interfaces provided standard
- LabVIEW™ drivers provided

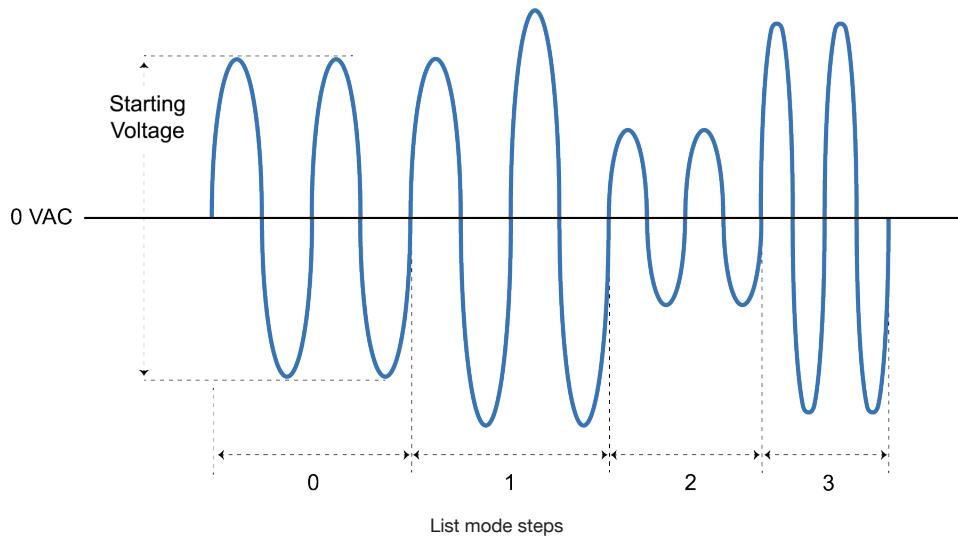
Model	9812*	9812-220V	9814-220V
Voltage (rms)		0 to 300 V	
Max. Power	500 VA	500 VA	1000 VA

\* 9812 operates at 110 VAC input

## Operation highlights

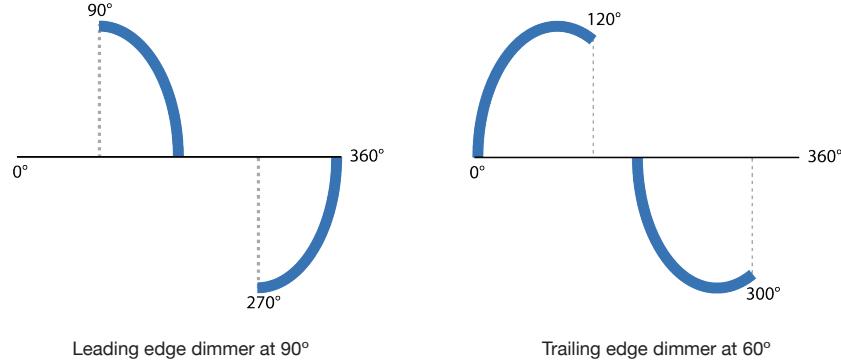
### List program mode

The 9810 Series allows you to create complex AC waveforms by sequencing up to 50 programs, each comprised of 9 individually configured steps. Each of these steps can be customized with specific voltage, frequency, and timing parameters, including ramp up, dwell, and ramp down times. The series also incorporates features to protect your device under test, such as the overcurrent fold feature which automatically reduces the voltage to keep the current below a safe threshold. For applications that require a settling time between steps, the single-step mode allows you to manually trigger each step in the sequence.



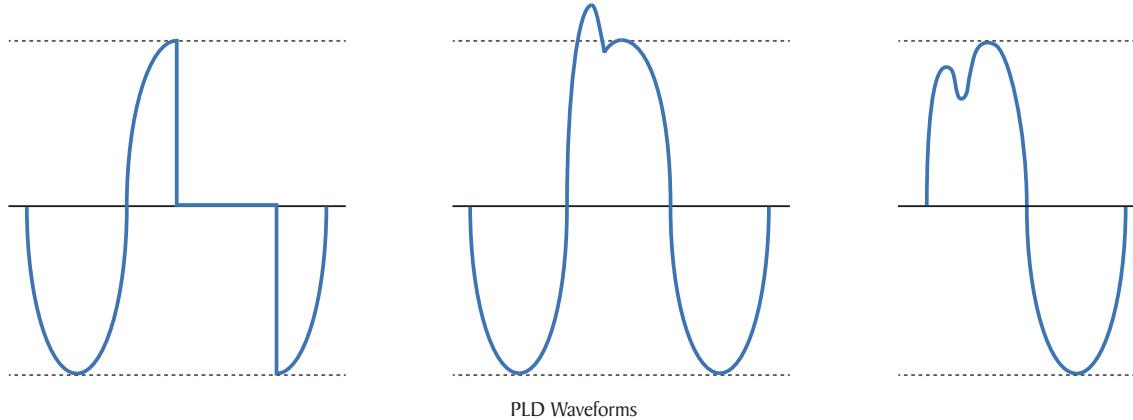
### Dimmer simulation

The dimmer feature can be used for many test applications such as motor control and lighting. By controlling the phase cut-off of the AC sine wave's leading or trailing edge, the dimmer simulation varies the RMS voltage supplied to the load under test. The phase cut-off can be adjusted for leading or trailing edge dimming between 0 to 180 degrees.

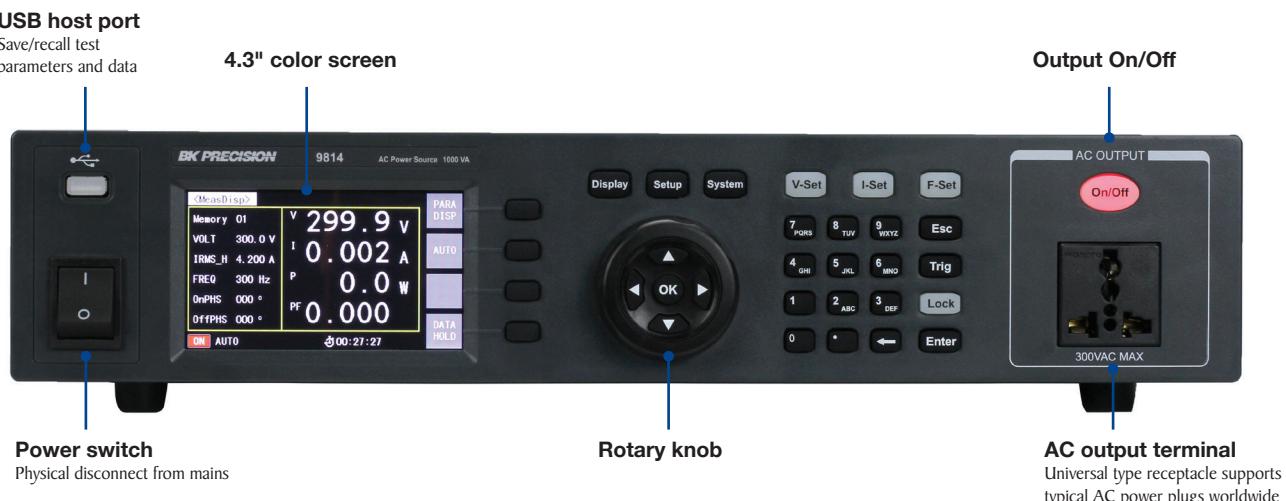


### Power line disturbance (PLD) simulator

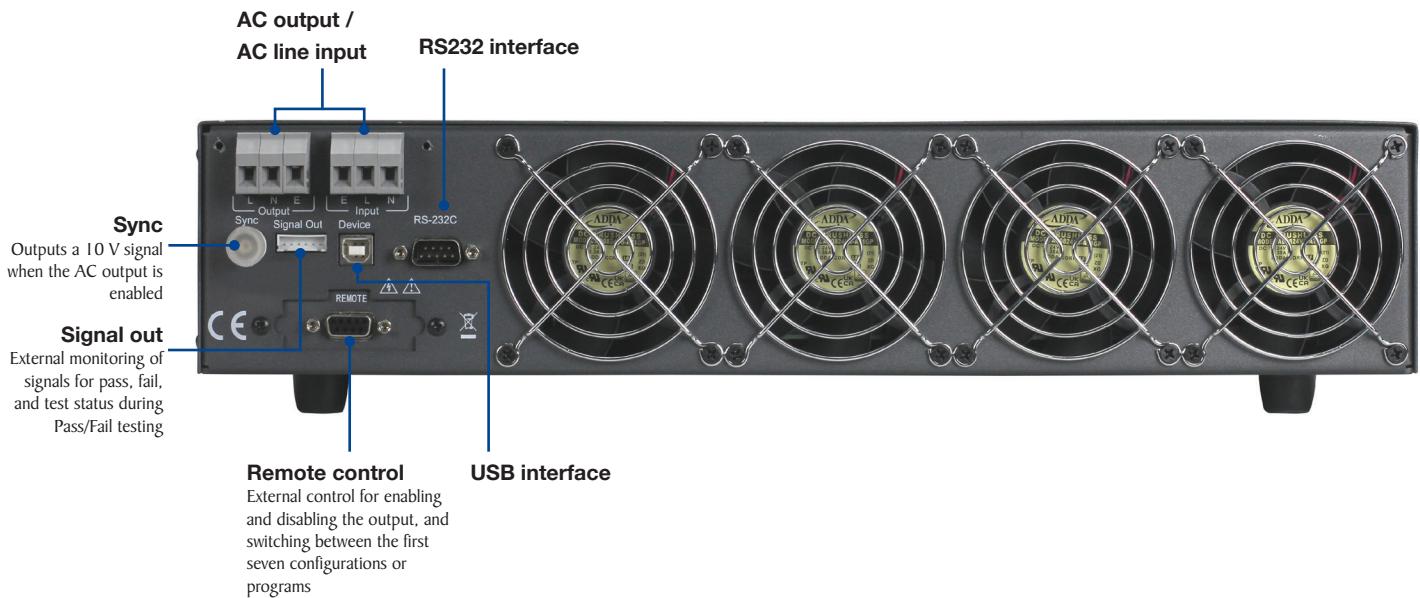
The PLD simulator is an extended feature of list mode that provides the user with more control over the disturbance insertion into the waveform. This can be useful for evaluating a product's immunity performance. For instance, a user could produce common waveform disturbances like surge, sag, spikes, and dropouts at user-defined locations on the waveform.



## Front panel



## Rear panel



## Specifications

Note: All specifications apply to the unit after a temperature stabilization time of 30 minutes over an ambient temperature range of  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ . Specifications are subject to change without notice.

Model		9812/9812-220V	9814-220V
<b>AC Input</b>			
Voltage		230 VAC $\pm 15\%$ 115 VAC $\pm 15\%$	
Frequency		47 Hz to 63 Hz	
Phase		Single	
Maximum Current	110 V	16 A	-
	220 V	8 A	16 A
Power Factor		0.7 (typical)	
<b>Output Parameters</b>			
Rated Power		500 VA	1000 VA
Output Voltage		0 to 300 V	
Output Frequency		45.0 Hz to 500 Hz	
Max. Current (RMS)	0 to 150 V	4.2 A	8.4 A
	0 to 300 V	2.1 A	4.2 A
Max Current (Peak)	0 to 150 V	12.6 A	25.2 A
	0 to 300 V	6.3 A	12.6 A
Total Harmonic Distortion (THD)		At 45 Hz to 500 Hz, $\leq 0.5\%$ (resistive load)	
Phase		2-wire single phase	
Crest Factor		3	
Line Regulation		0.1% max for a $\pm 10\%$ line change	
Load Regulation		$\leq 0.5\%$ FS (resistive load)	
Response Time		< 100 $\mu\text{s}$	
<b>Setting Parameters</b>			
Voltage (rms)	Range	0 to 300 V	
	Resolution	0.1 V	
Frequency	Range	45.0 Hz to 500 Hz	
	Resolution	< 100 Hz, 0.1 Hz ; $\geq 100$ Hz, 1Hz	
Initial / Final Phase Angle	Range	0 to 359°	
	Resolution	1°	

## Ordering Information

Model	Description
9812	Programmable AC Power Source - 110 VAC Line Input
9812-220V	Programmable AC Power Source - 220 VAC Line Input
9814-220V	Programmable AC Power Source - 220 VAC Line Input

## AC Power Cord for 220 V

5 mm ring terminals to support  
#10 and #8 stud size plugs



Measurement Parameters		
Voltage (rms)	Range	0 to 300 V
	Resolution	0.1 V
	Accuracy	$\pm 0.5\% + 2$ digits
Frequency	Range	45.0 Hz to 500 Hz
	Resolution	< 100 Hz, 0.1 Hz ; $\geq 100$ Hz, 1Hz
	Accuracy	$\pm 0.1$ Hz
Current (rms)	0 to 150 V	0.000 to 4.200 A
	0 to 300 V	0.000 to 2.100 A
	Resolution	0.001 A
	Accuracy	$\pm (0.5\% + 3$ digits)
Peak Current	0 to 150 V	0.00 to 12.60 A
	0 to 300 V	0.00 to 6.30 A
	Resolution	0.01 A
	Accuracy	$\pm (5\% + 2$ digits)
Power	Range	0 to 500 W
	Resolution	0.1 W
	Accuracy	$\pm 0.6\% + 5$ digits
Power Factor	Range	0.001 to 1.000
	Resolution	0.001
	Accuracy	$\pm 2\% + 2$ digits
General		
Display Resolution		4.3" color LCD, 480 x 272 dots
Safety Protections		Low voltage (LVP), overvoltage (OVP), overcurrent (OCP), overpower (OPP), and overtemperature protection (OTP)
I/O interfaces		USB VCOM, RS232, USB host port
Memory		Manual mode: 50 configurations Program mode : 50 programs with 9 steps per program
Dimensions (W x H x D)		16.9 x 3.5 x 23.6 inches (430 x 88 x 600 mm)
Weight		66 lbs (30 kg)      88 lbs (40 kg)
Temperature	Operation	32 °F to 104 °F (0 °C to 40 °C)
	Storage	-4 °F to 158 °F (-20 °C to 70 °C)
Humidity		20 % to 80 % (non-condensation)
Operating Altitude		$\leq 2000$ meters
Warranty		3 Years
Standard Accessories		Terminated power cord with NEMA 5-15P (9812 only), unterminated power cord with ring terminals (9812-220V and 9814-220V) , and certificate of calibration

## About B&K Precision

For more than 70 years, B&K Precision has provided reliable and value-priced test and measurement instruments worldwide.

Our headquarters in Yorba Linda, California houses our administrative and executive functions as well as sales and marketing, design, service, and repair. Our European customers are most familiar with B&K through our French subsidiary, Sefram. Engineers in Asia know us through our B+K Precision Taiwan operation. The independent service centers in Singapore and Brasil service customers in Singapore, Malaysia, Vietnam, Indonesia and South America, respectively.



● B&K Precision group member   ● Independent service center   ● Service center location

## Quality Management System

B&K Precision Corporation is an ISO9001 registered company employing traceable quality management practices for all processes including product development, service, and calibration.

ISO9001:2015

Certification body NSF-ISR  
Certificate number 6Z241-IS8



Registered to ISO 9001

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