Data Sheet

Programmable AC Power Source
Model 9801

USB | RS232 | LAN

Features

- 300 VA, 300 V, low distortion, single phase, AC power source delivering a maximum of 3 Arms / 12 Apeak
- Output frequency adjustable from 45 Hz – 500 Hz
- Select 150 V / 300 V autoranging or 300 V range operation for continuous sweep from 0 - 300 V
- Displays Vrms, Irms, Ipeak, frequency, PF, apparent power, true power, and elapsed output time
- Adjustable phase angle control
- Programmable voltage and frequency limit settings
- Built-in PLD and dimmer simulation
- Voltage and frequency sweep mode
- List mode: 10 user-defined programs with up to 100 programmable steps each
- BNC I/O for external triggering, output status indication/control, and synchronization
- Save and recall up to 100 instrument settings
- Standard USB (USBTMC-compliant), RS232, and LAN interfaces
- OVP/OCP/OPP/OTP protection modes and key lock function
- Compact 19" half-rack form factor allows for side-by-side rack mounting of two units
- Pre-compliance testing for voltage dips and frequency simulations according to IEC61000-4-11 / 4-14 / 4-28
- LabVIEW driver and softpanel for remote control available

The 9801 is both a programmable AC power source and measurement tool in a compact benchtop package. This fully programmable linear AC source delivers up to 300 VA through its universal line output terminal on the front and output connector on the rear. The output can be varied from 0 to 300 V with 0.1 V resolution, with adjustable start and stop phase angles from 0 to 360 degrees and maximum current of 3 A. The output frequency can be adjusted from 45 Hz to 500 Hz. The bright VFD display shows Vrms, Irms, Ipeak, frequency, power factor (PF), apparent power, true power and elapsed output time.

The AC source provides a power line disturbance (PLD) simulator, list mode, and sweep mode for simulation of common power grid faults and disturbances. A built-in dimmer function is also available for testing motors and LEDs.

List mode can be used to generate sequences of waveforms such as surges, sags, and frequency disturbances. The programmed list can be triggered from the front panel or via BNC connector on the rear.

Standard USB, RS232, and LAN interfaces can be used to remotely control the source via a PC. Free application software and LabVIEW driver are available to reduce programming time and increase productivity.
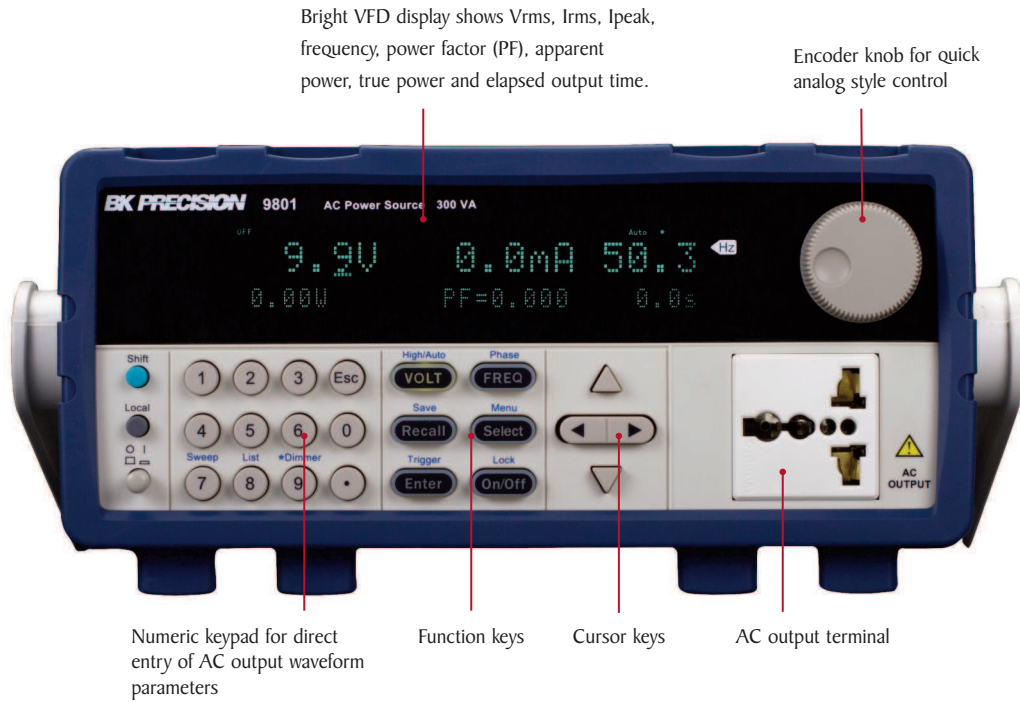
Common applications

The 9801 AC power source is suitable for evaluating transformers, TRIACs, SCRs and passive components as well as production, R&D, service, and pre-compliance testing.
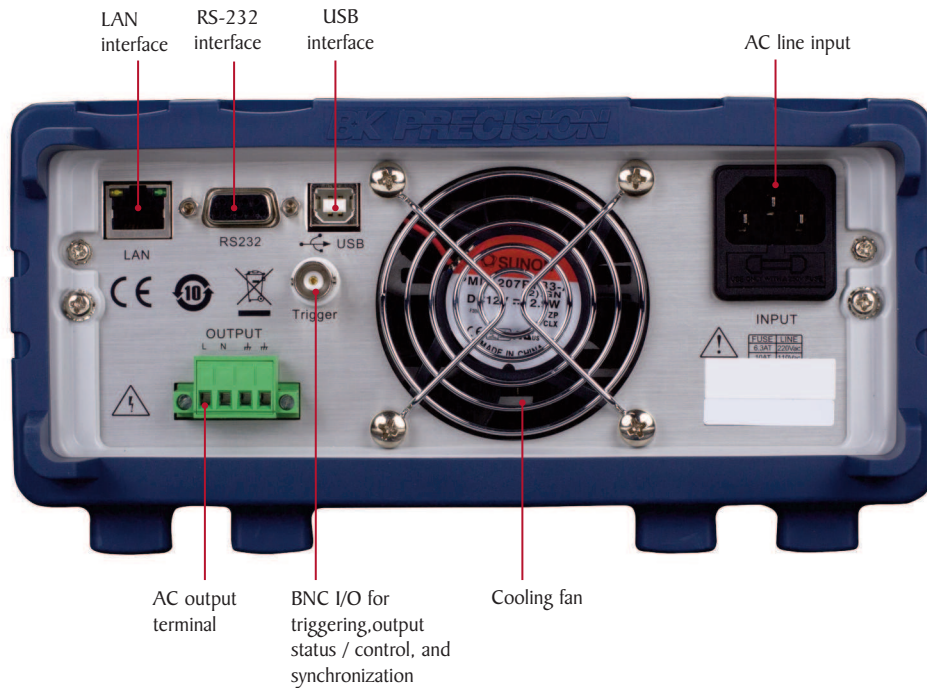
B&K PRECISION®
ELECTRONIC TEST INSTRUMENTS

www.valuetronics.com

Front panel

Bright VFD display shows Vrms, Irms, Ipeak, frequency, power factor (PF), apparent power, true power and elapsed output time.

Encoder knob for quick analog style control

Numeric keypad for direct entry of AC output waveform parameters

Function keys

Cursor keys

AC output terminal

Rear panel

LAN interface

RS-232 interface

USB interface

AC line input

AC output terminal

BNC I/O for triggering, output status / control, and synchronization

Cooling fan

Flexible operation

List mode

List mode supports the generation of more complex sequences with varying times, amplitudes, and frequencies. Up to 100 steps in 10 groups can be saved and executed. This allows the user to build a wide range of waveforms in a sequence to simulate grid faults and disturbances. The programmed list can be triggered from the front panel or via BNC connector on the rear.

Starting Voltage

0 VAC

0   1   2   3
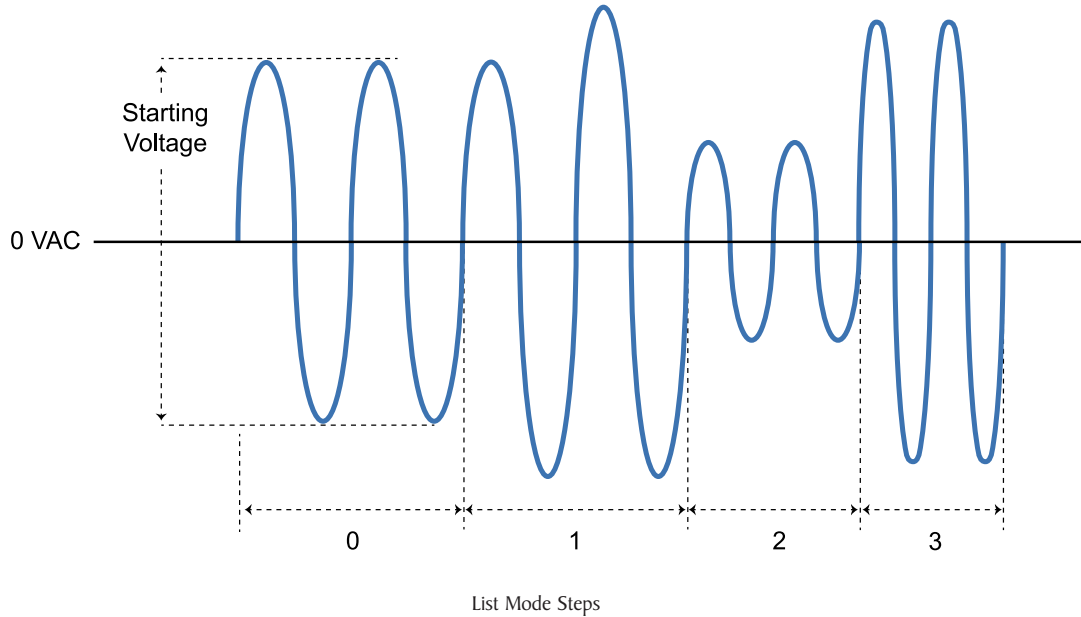
List Mode Steps

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.

PLD Waveforms
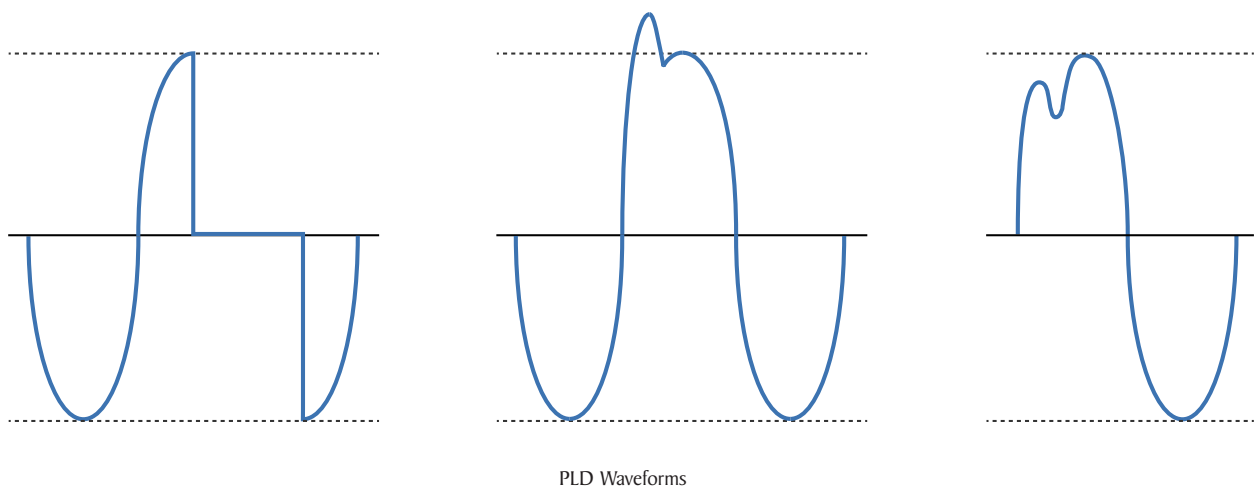
Sweep mode

The sweep function is ideal for testing the efficiency of switching power supplies or capturing the maximum operating power requirements of the device under test. User-defined voltage and frequency sweeps can be created independently or combined. Up to 10 sweep profiles can be stored and recalled.

Voltage Sweep

Frequency Sweep

Voltage plus Frequency Sweep
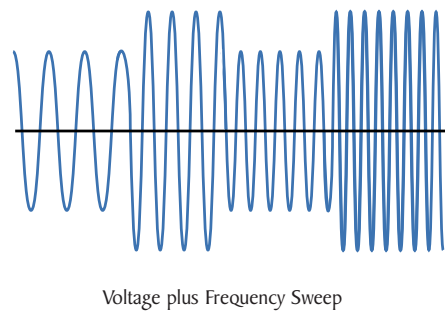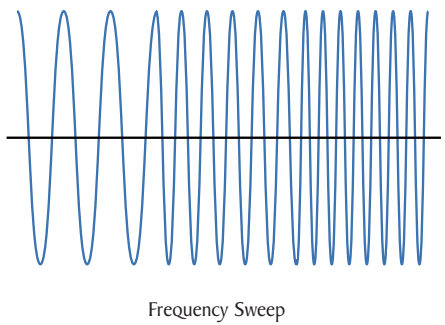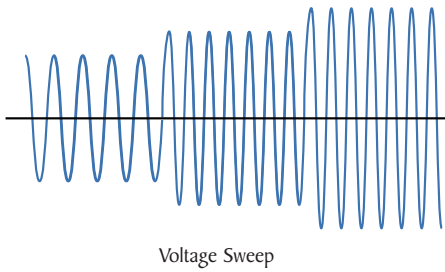
Dimmer simulation

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 – 180 degrees.

Leading Edge Dimmer at 90°

Trailing Edge Dimmer at 60°
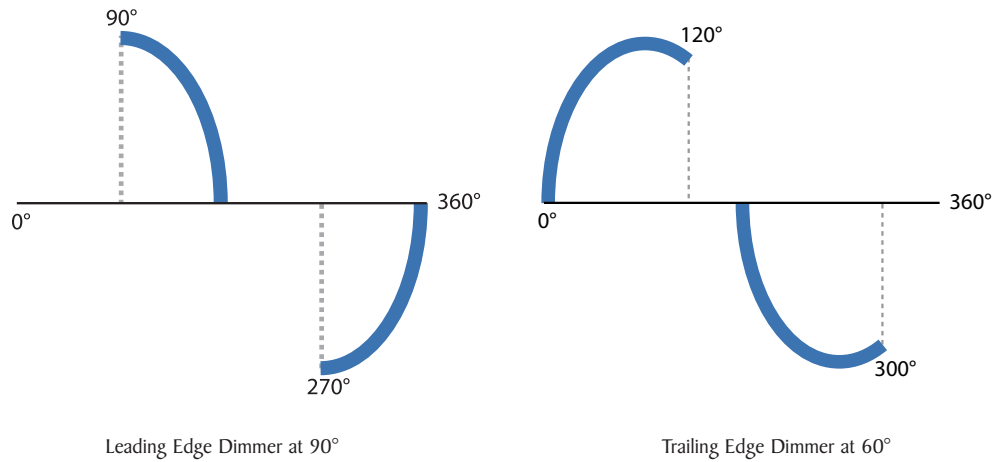
Application software

PC software is provided for front panel emulation, generating and executing list, PLD, and sweep profiles, or logging measurement data without the need to write source code.

Supports NI Data Dashboard for LabVIEW

www.valuetronics.com

www.bkprecision.com

Specifications

Model	9801		
AC Input			
Phase	Single		
Voltage	110 / 220 VAC ± 10%		
Frequency	47 - 63 Hz		
Max. Current	8 A max.		
Power Factor	0.5 (typical)		
AC Output			
Max. Power	300 VA		
Max. Current (rms)	0 - 150 V	3.0 A	
	0 - 300 V	1.5 A	
Max. Current (peak)	0 - 150 V	12 A	
	0 - 300 V	6 A	
Crest Factor	≥4		
Phase	Single		
Total Harmonic Distortion (THD)	≤0.5% at 45 - 500 Hz (Resistive load)		
Line Regulation	0.1% max for a ±10% line change		
Load Regulation	≤0.5% FS (Resistive load)		
Response Time	<100 µs		
Programming			
Voltage (rms)	Range	0 -300 V, 150 V / 300 V (Auto)	
	Resolution	0.1 V	
	Accuracy	±(0.2% + 0.6 V)	
Frequency	Range	45 - 500 Hz	
	Resolution	0.1 Hz at 45 - 99.9 Hz / 1 Hz at 100 - 500 Hz	
	Accuracy	0.1 Hz	
Phase Angle	Range	0 - 360°	
	Resolution	0.1°	
	Accuracy	±1° (45 - 65 Hz)	
Measurements			
Voltage (rms)	Range	0 - 300 V	
	Resolution	0.1 V	
	Accuracy	±(0.2% + 0.6 V)	
Current (rms)	Range	Low: 120.0 mA / Mid: 1.200 A / High: 3.00 A	
	Resolution	Low: 0.1 mA / Mid:1 mA / High: 10 mA	
	Accuracy	Low: ±(0.2% + 0.4 mA) / Mid: ±(0.2% + 4 mA) / High: ±(0.2% + 20 mA)	
Current (peak)	Range	0 - 12 A	
	Resolution	0.01 A	
	Accuracy	±(1% + 120 mA)	
Power (Watts)	Resolution	Low: 0.01 W / Mid:0.1 W / High: 1 W	
	Accuracy (47 - 65 Hz)	Low: ±(0.2% + 0.05 W) / Mid: ±(0.2% + 0.5 W) / High: ±(0.2% + 2 W)	
General			
Memory	10 Locations		
BNC I/O	External trigger input, sync output, output status indicator / control		
Interface	LAN, USB, RS232		
Operating Temperature	32 °F to 104 °F (0 °C to 40 °C) ≤ 80% R.H.		
Storage Temperature	-4 °F to 158 °F (-20 °C to 70 °C) ≤ 85% R.H.		
Environmental conditions	For indoor use only, max humidity 80%, no condensation		
Dimensions (W x H x D)	8.45" x 3.47" x 17.83" (214.5 x 88.2 x 453.5 mm)		
Weight	9.5 kg (20.94 lb.)		
	Two-Year Warranty		
Standard Accessories	Power cord, instruction manual, test report & certificate of calibration		
Optional Accessories	IT-E151 rack mount kit		

Note: All specifications apply to the unit after a temperature stabilization time of 15 minutes over an ambient temperature range of 23 °C ± 5 °C.

www.valuetronics.com