

BK9830

2000 & 3000 VA Programmable AC Power Sources



BK9830 Series
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BK PRECISION
ELECTRONIC TEST INSTRUMENTS

Sefram

Overview

- AC, DC and AC+DC power source
- Comprehensive measurement capabilities Vrms, Arms, Vdc, +Apk, -Apk, inrush current, frequency, power factor, apparent power, reactive power, true power, and crest factor
- 0,98 power factor at AC input stage
- Built-in standard waveforms sine, square, clipped sine
- Digital I/O port supporting external trigger, transient indication, failure status indication, remote inhibit, RS232, and external analog output level programming interface
- Generate custom harmonic waveforms on a PC and download them to the instrument's 5 non-volatile memory locations
- LabVIEW™ driver and application software with soft panel for remote control available
- Control the AC source from a standard web browser via built-in web server



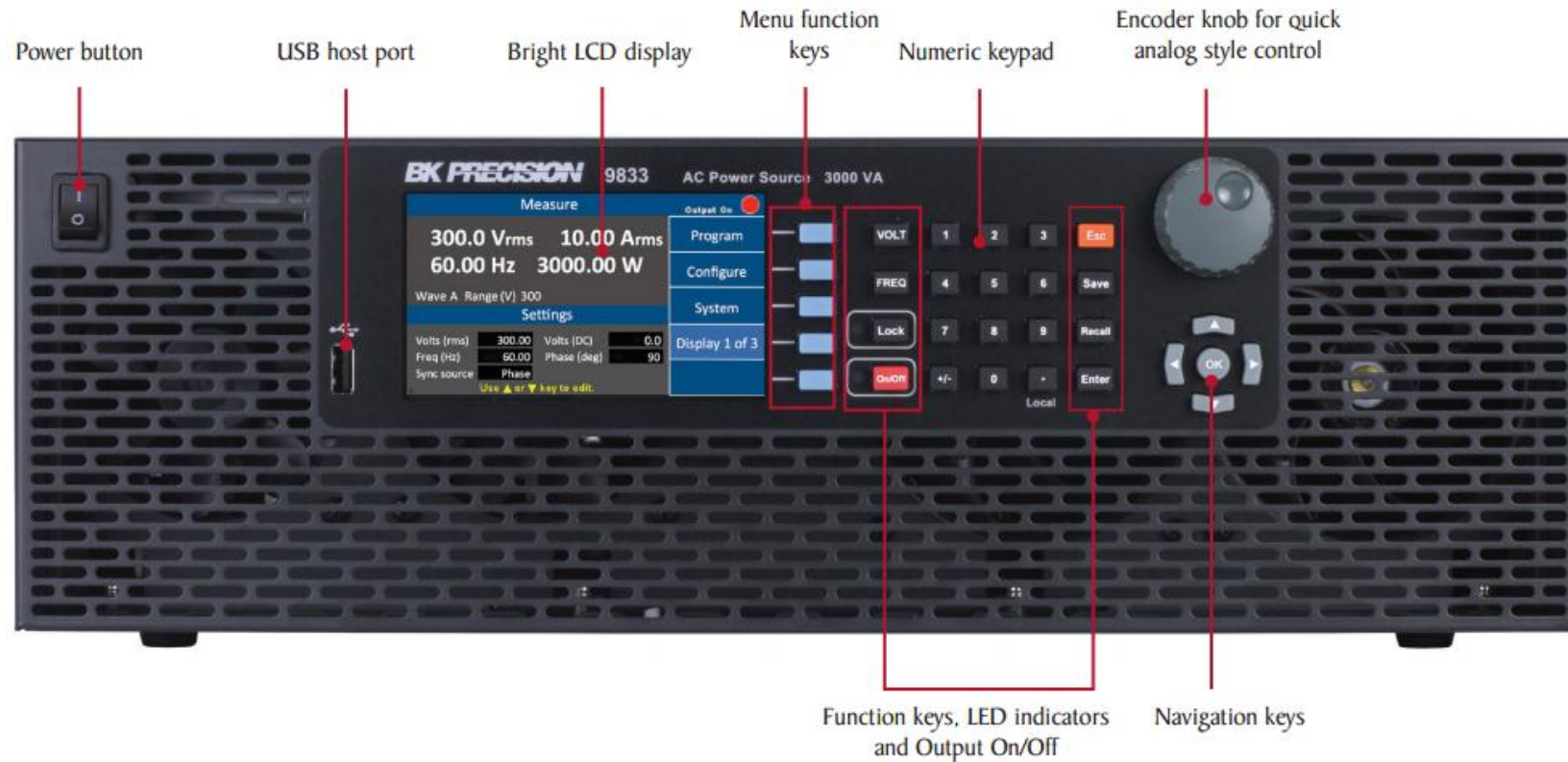
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Front Panel

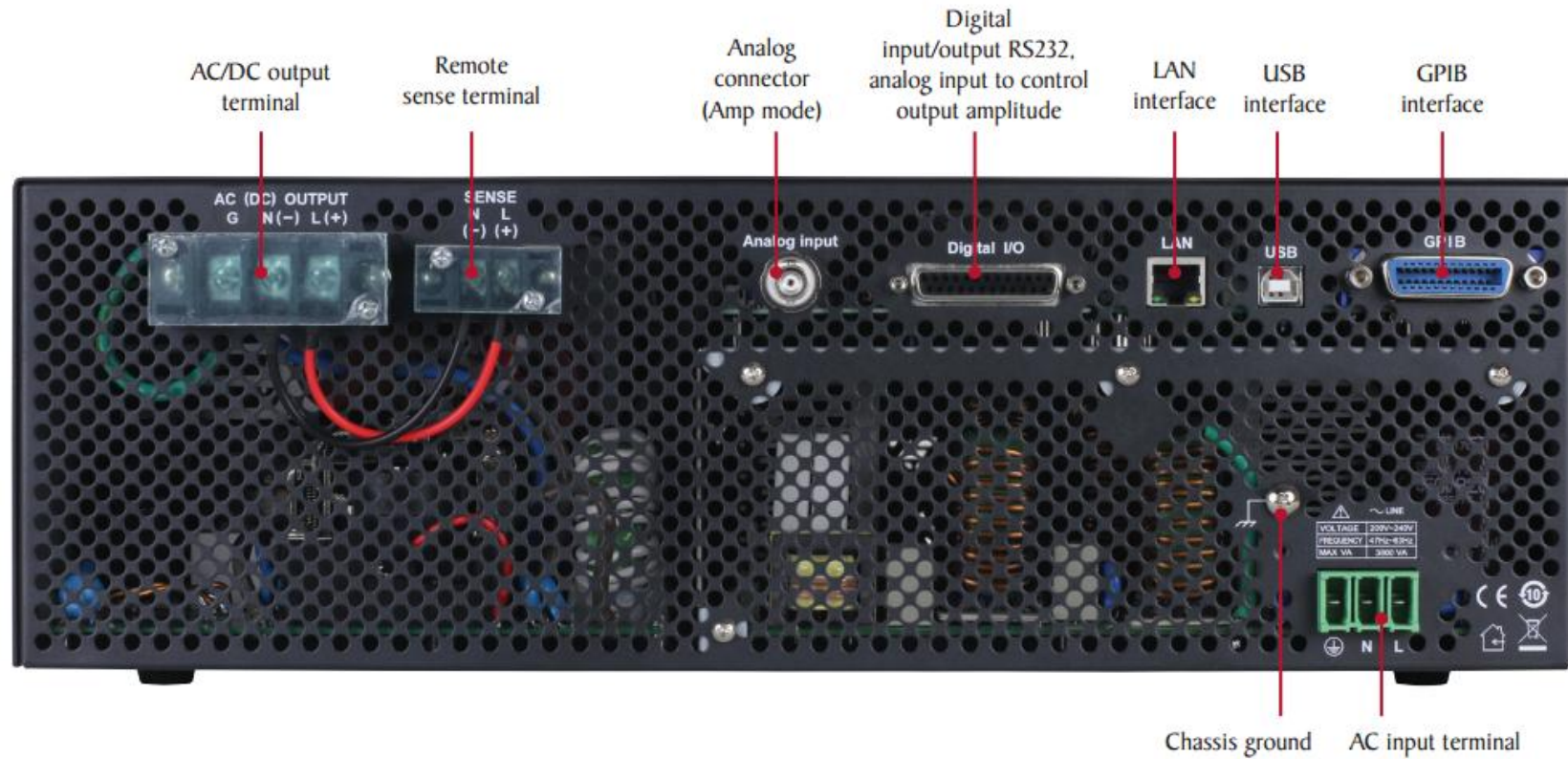
Intuitive user interface



The numeric keys and rotary knob provide a convenient interface for setting output parameters quickly and precisely. All measurements and setting values are concurrently displayed on the screen including a graphical display of the output waveform. Up to 100 instrument settings can be saved and recalled to and from internal storage memory. Save screenshots and save /recall settings to the USB host interface.

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Rear Panel



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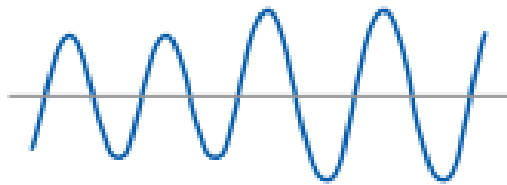
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Flexible operation

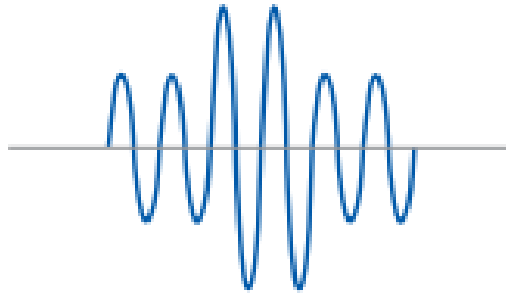
Adjustable AC/DC voltage levels, frequency and timing parameters allow for simulation of voltage drops and periodic power surges and sags. Step, pulse and list modes are used to generate complex power line disturbance simulations. Select from built-in waveforms or generate user-defined waveforms with the included PC software or by connecting an arbitrary waveform generator to the instrument's analog input.

Step mode



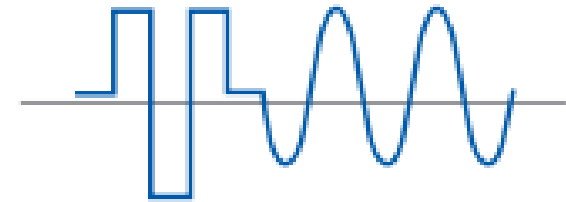
Generate step-up or step-down output based on user-defined voltage, frequency, phase, and interval settings.

Pulse mode



Pulse mode allows the generation of single or multiple pulses with user defined voltage, duty cycle, and phase. Either AC or DC (-424.0 to +424.0 V) output operation is supported.

List mode



List mode supports the generation of complex output sequences with varying time, amplitude, frequency, and voltage. Up to 100 steps in 10 programs can be saved and executed. This allows the user to build a wide range of waveforms to simulate power grid faults and disturbances.

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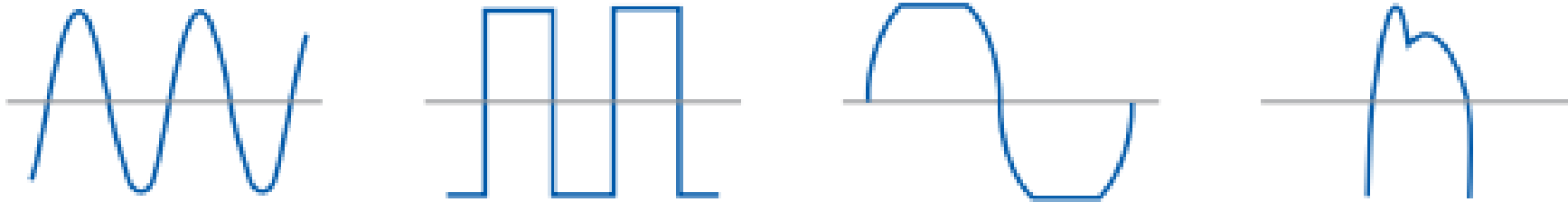
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Adjustable AC/DC voltage levels, frequency and timing parameters allow for simulation of voltage drops and periodic power surges and sags. Step, pulse and list modes are used to generate complex power line disturbance simulations. Select from built-in waveforms or generate user-defined waveforms with the included PC software or by connecting an arbitrary waveform generator to the instrument's analog input.

Waveform operations



Select sine, square, clipped sine or harmonic distortion waveforms. Set amplitude, frequency and phase.

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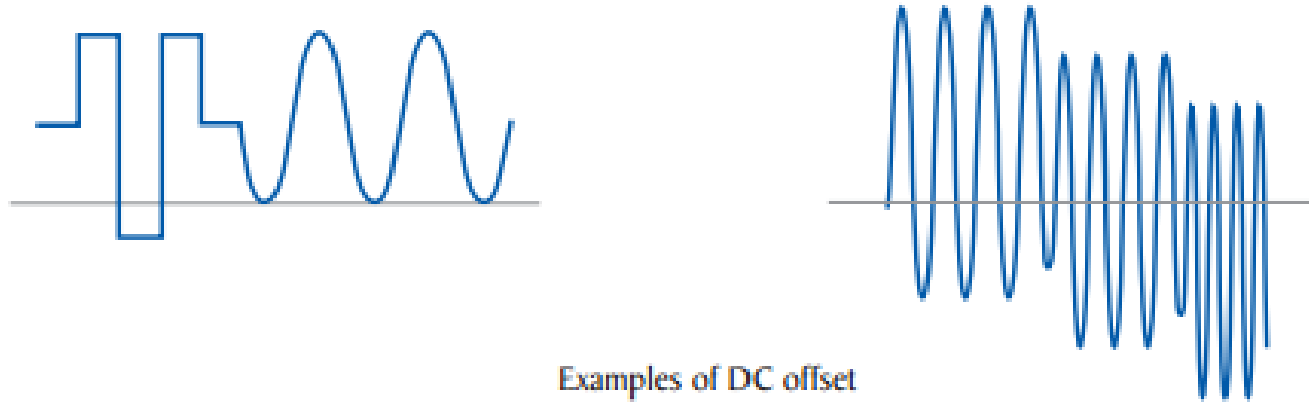
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DC offset



Examples of DC offset

The 9830 Series is capable of generating AC+DC waveforms. When operating in pulse, step and list mode, the AC signal can be combined with either a positive or negative DC offset voltage, allowing users to create a wide range of waveforms.

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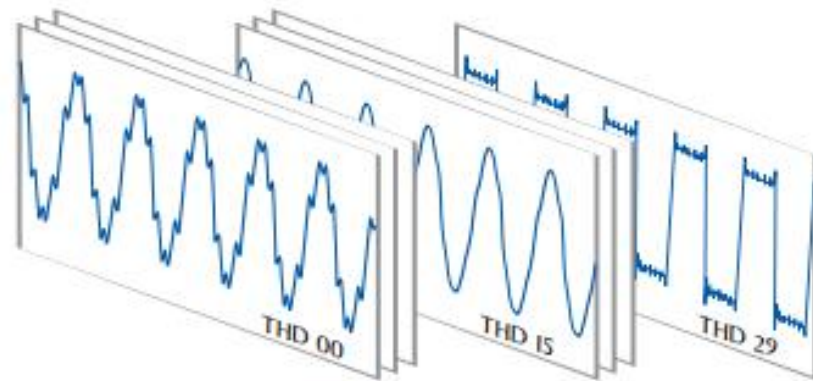
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Built-in THD Waveforms



Select from 30 built-in THD (total harmonic distortion) waveforms

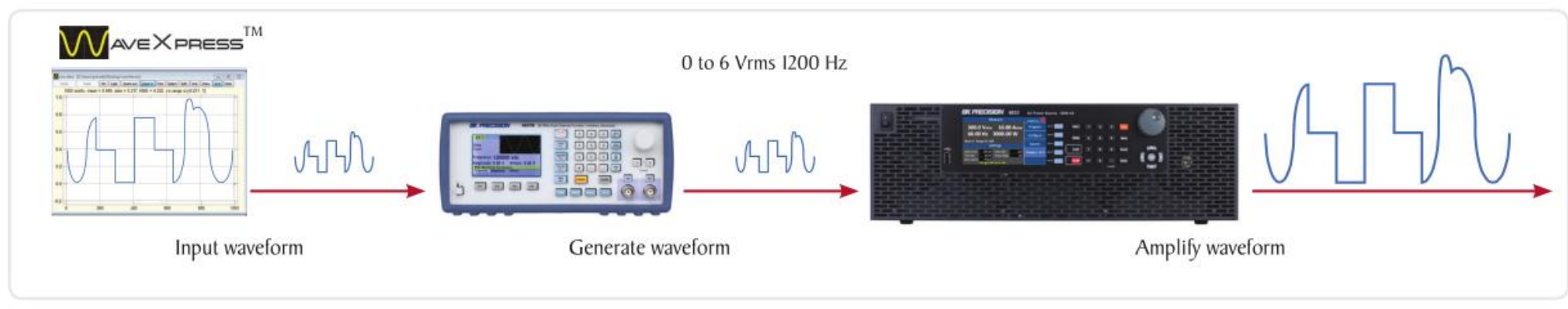
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Arbitrary waveform generation

Amplifier mode



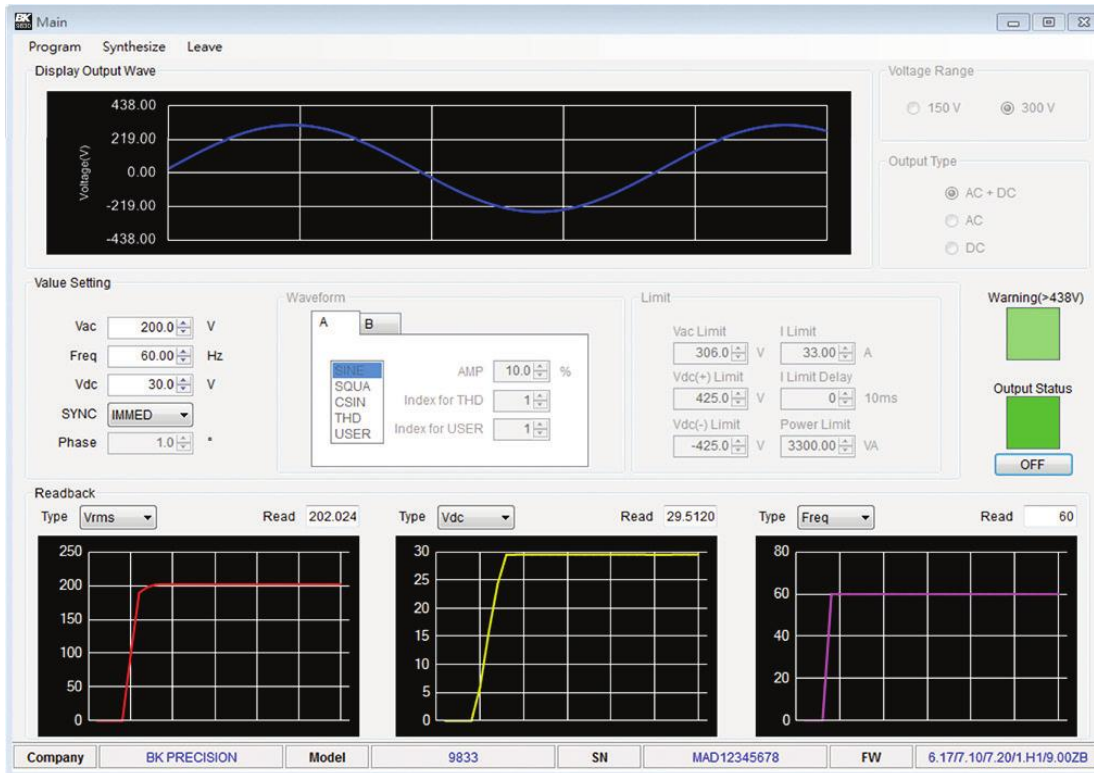
To further extend the capabilities of the 9830 series, custom waveforms can be applied to the analog BNC input. The custom waveform can be created using WaveXpress™, a comprehensive stand-alone B&K Precision application, allowing users to easily generate, edit, and upload custom waveforms to an arbitrary waveform generator, which then drives the AC power source output. WaveXpress™ allows users to define waveforms by importing a csv file, define it freehand on the computer, or by importing a real-world waveform captured on a digital oscilloscope.

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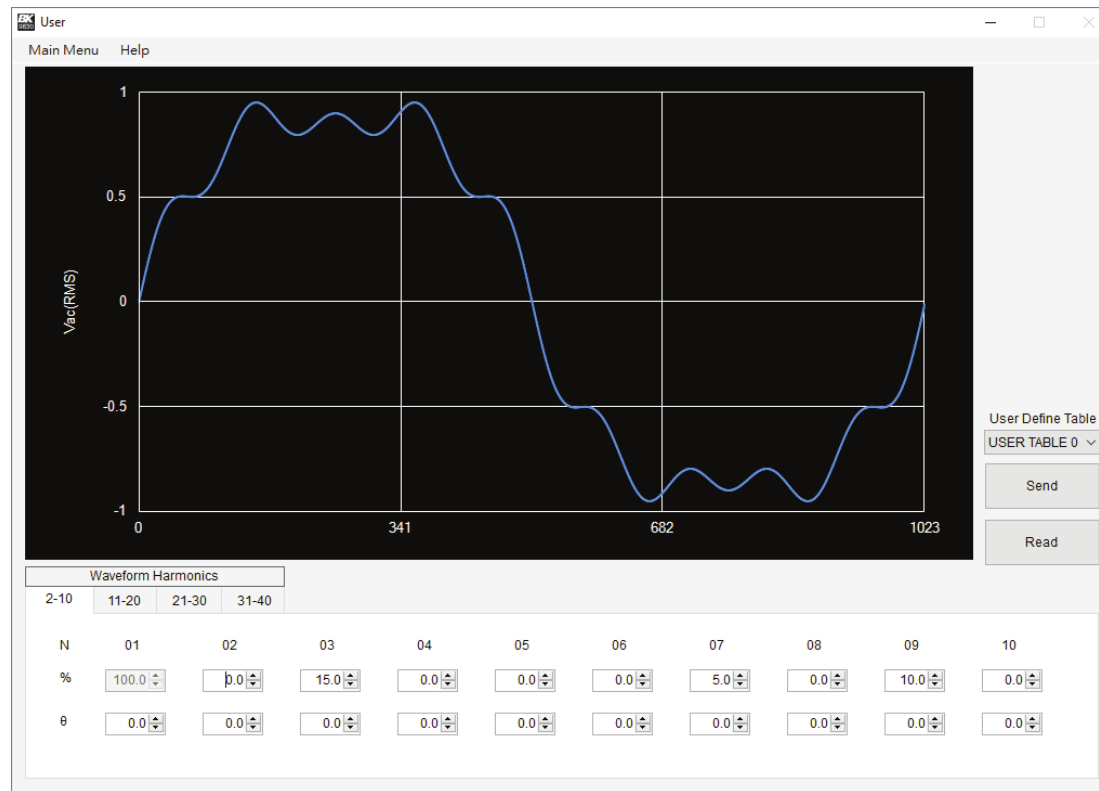
Front panel emulation



PC software is provided for front panel emulation, generating and executing List, Step, and Pulse modes, and logging measurement data without the need to write source code.

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User-defined harmonic waveforms



Create harmonic waveforms by specifying the amplitude and phase of each harmonic up to the 40th order.



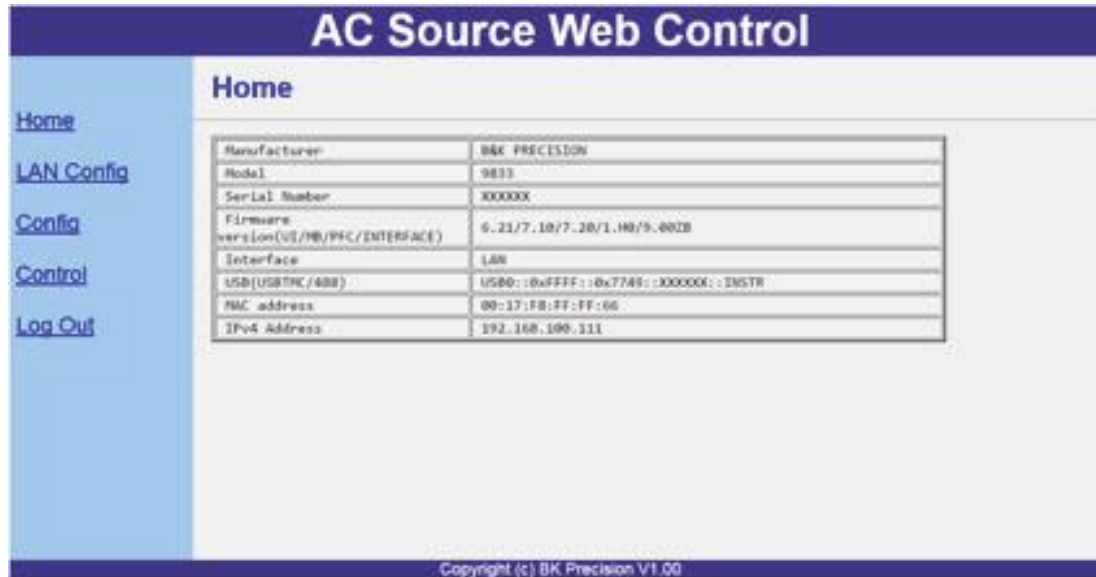
Create user-defined waveforms on a computer and download in to 5 user memory locations.

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Web server interface



The screenshot displays the 'AC Source Web Control' interface. On the left, there is a navigation menu with links for Home, LAN Config, Config, Control, and Log Out. The main content area is titled 'Home' and contains a table with the following information:

Manufacturer	BK PRECISION
Model	9833
Serial Number	XXXXXX
Firmware version(US/MB/PC/INTERFACE)	6.21/7.10/7.20/1.H0/9.002B
Interface	LAN
USB(USBINC/488)	USB0::0x0000::0x7740::XXXXXX::INSTR
MAC address	00:17:1B:FF:FF:00
IPv4 Address	192.168.100.111

At the bottom of the interface, there is a copyright notice: Copyright (c) BK Precision V1.00

Built-in web server that allows users to configure, control, or monitor the basic settings of the power source from a remote computer using a web browser.

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Selection guide

Model		BK9832	BK9833
Max. power		2000 VA	3000 VA
Max. voltage	AC (rms)	150 V / 300 V	
	DC	± 212 V / ± 424 V	
Max. current (rms)	0 - 150 V	20 A	30 A
	0 - 300 V	10 A	15 A
Frequency range		45 Hz - 1200 Hz	
Total harmonic distortion (THD)		≤ 0.5 % at 45 Hz - 400 Hz (resistive load)	
Remote interface		LAN, USB, GPIB, and RS232	
Warranty		3 years	
Price		6 300 €	7 500 €

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9830 Series Accessories



Unterminated AC power cord (Standard)



Rack mount ears with handles (Optional)

RK3U – 65 €

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Competitive Comparison



BK9830 Series Comparison Guide

	B&K Precision			Keysight		Chroma			
	BK9805	BK9832	BK9833	AC6803A	AC6804A	6520	6530	61504	61604
List price (base unit)	4 223,00 €	6 300,00 €	7 500,00 €	7 545,00 €	12 472,00 €	8 500 €	9 600 €	10 600 €	6 400 €
AC Power (VA)	1500	2000	3000	2000	4000	2000	3000	2000	2000
AC Voltage (Vrms)	150 V / 300 V	150 V/300 V	150 V/300 V	135 V /270 V		150 V/300 V / Auto			
AC Current (Arms)	12 A	20 A / 10 A	30 A / 15 A	20 A / 10 A	40 A / 20 A	20 A / 10 A	30A / 15 A	16 / 8 A	
Frequency Range	45-500 Hz	45 - 1200 Hz		40 - 500 Hz		15 - 2000 Hz		15 - 1000 Hz	
DC, AC+DC	X	✓		✓		X		✓	
DC Voltage, Power	X	± 212 V / ± 424 V 1000 W (9832), 1500 W (9833)		+190 V / +380 V 1600 W (AC6803A), 3200W (AC6804A)		X		+212 V / +424 V, 1000 W	
Protection	OVP, OPP, OCP, OTP	OVP, OPP, OCP, OTP		OVP, OPP, OCP, OTP		OPP, OCP, OTP		OVP, OPP, OCP, OTP	
Measurements	Vrms, Irms, Ipeak, frequency, power factor, apparent power, true power	Vrms, Arms, Vdc, +Apk, -Apk, inrush current, frequency, power factor, apparent power, reactive power, true power, and crest factor		Vrms, Arms, Aapk, ApkH, frequency, Vdc, Adc, power factor, apparent power, reactive power, true power		Vrms, Arms, +Apk, -Apk, inrush current, frequency, power factor, apparent power, reactive power, true power, and crest factor		Vrms, Arms, Vdc, Adc, inrush current, frequency, power factor, apparent power, reactive power, peak power, true power, and crest factor	
Analog level control interface	✓ (standard)	✓ (standard)		✓ option AC68ALGU		✓ option A650001		✓ option A615001	
Remote interfaces	LAN, USB, RS232 standard	USB, LAN, USBTMC, GPIB, RS232 standard		LAN and USB standard, GPIB and analog optional		option A650001: GPIB,RS232 and analog control LAN option not available		option A615001: RS232 & GPIB + option A615002: LAN & USB	
Simulation Modes									
List mode	✓	✓		X		✓		✓	
Sweep, vary voltage and frequency over time	✓	✓		✓		✓		✓	
Harmonic distortion	✓	✓		X		✓		✓	
Custom / arbitrary waveform generation*	X	✓ (standard)		✓ option AC68ALGU		X		✓ option A615001	

* Requires an external arbitrary/function generator connected to the analog interface

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