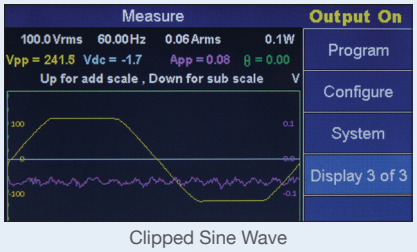
2020
New Products Catalog

BK PRECISION

AC Power

9830 Series Programmable AC Sources

The 9830 Series are low distortion, single-phase AC power sources delivering a maximum of 3000 VA, 300 Vrms, 30 Arms / 97.5 Apk with the output frequency adjustable from 45 Hz to 1200 Hz. Housed in a compact 3U form factor, the AC source is capable of generating both AC, DC, and AC+DC output.



Clipped Sine Wave

Applications

- Pre-compliance testing according to IEC61000-3-2 and IEC61000-4-11/14/28/34
- Evaluate transformers, TRIACs, SCRs, and passive components
- Simulate common power grid faults and disturbances

Model		9832	9833
Max power		2000 VA	3000 VA
Max voltage (rms)	AC	150 V / 300 V / Auto	
	DC	±212 V / ±424 V	
Max current (rms)	0 to 150 V	20 A	30 A
	0 to 300 V	10 A	15 A
Frequency range		45 to 1200 Hz	
Load regulation		≤ 0.1 % FS (resistive load)	
Total harmonic distortion (THD)		≤ 0.5 % at 45 to 400 Hz (resistive load)	
Remote interfaces		USB (USBTMC-compliant), GPIB, and LAN	

Features & Benefits

- AC, DC and AC+DC power source
- Measurements: Vrms, Arms, Vdc, +Apk, -Apk, inrush current, frequency, power factor, apparent power, reactive power, true power, and crest factor
- All measurements can be displayed simultaneously on a large and bright 4.3-inch color LCD
- Power line disturbance simulation functions using STEP, LIST, and Pulse modes
- Adjustable phase angle control
- Analog input control with a maximum bandwidth of 1.2 kHz
- Save setups and waveform data to USB flash drive
- Predefined sine, square, clipped sine and THD waveforms
- 5 user-defined waveforms
- Generate custom arbitrary waveforms on a PC and download and execute waveforms from internal memory
- List mode with 10 user-defined programs with up to 100 programmable steps each
- Digital I/O port for external triggering, action completed indicator, failure status indicator, and remote inhibit
- Comprehensive protection modes including OVP, OCP, OTP, fan failure, and key lock

ElectriKit

A helpful tool for electricians, technicians, engineers, students, hobbyists and anyone dealing with electrical power.

Key Features

- Calculate DC power and single or three-phase AC true power, reactive power, and apparent power
- Delta-wye transformation, voltage drop, AWG size, THD, horsepower, and battery life calculators
- Ampacity table for insulated conductors per NEC Table 310.16
- Android™ version supports multiple languages including French, Japanese, and Spanish

GET IT ON Google Play

Download on the App Store

9800 Series AC Power Sources

The 9800 Series is both a programmable AC source and measurement tool. These fully programmable linear AC sources deliver a maximum of 1500 VA through the universal line output terminals on the front and the output connector on the rear.

Features & Benefits

- Displays Vrms, Irms, Ipeak, frequency, PF, apparent power, true power, and elapsed output time
- Adjustable phase angle control
- Total harmonic distortion: ≤0.5% at 45 to 500 Hz (resistive load)
- 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
- OVP/OCP/OPP/OTP protection modes and key lock function
- Pre-compliance testing for voltage dips and frequency simulations according to IEC61000-4-11 / 4-14 / 4-28
- Standard USB (USBTMC-compliant), RS232, LAN and GPIB (9803 and 9805 only) interfaces

Model	AC Output						
	Max power	Max current (rms)	Max current (peak)	Frequency range	Crest factor	Line regulation	Load regulation
9801	300 VA	3 A (0-150 V), 1.5 A (0-300 V)	12 A (0-150 V), 6 A (0-300 V)	45 Hz to 500 Hz	3	0.1% max for a ±10% line change	≤ 0.5% FS (resistive load)
9803	750 VA	6 A (0-150 V), 3 A (0-300 V)	24 A (0-150 V), 12 A (0-300 V)				
9805	1500 VA	12 A (0-150 V), 6 A (0-300 V)	48 A (0-150 V), 24 A (0-300 V				

Power line disturbance (PLD) simulator

With the PLD simulator, users can produce common waveform disturbances like surges, sags, spikes, and dropouts at user-defined locations on the waveform.

5335B Power Meter

The 5335B is a compact, single-phase AC power meter for measuring and analyzing energy consumption and power quality up to 600 Vrms, 20 Arms, and bandwidth of 100 kHz.

Harmonic histogram

The parameters of each harmonic measured can be displayed in a bar chart.

Features & Benefits

- 4.3-inch color TFT LCD
- Simultaneously measure and display up to 12 AC and DC parameters
- Front panel USB host port for data storage to a USB flash drive
- Standard USB (USBTMC), RS232, and LAN interfaces
- Integration function with automatic range switching for measuring electric energy
- External current sensor interface for measurements above 20 A
- Total harmonic distortion (THD) and harmonic measurements up to the 50th harmonic with the ability to display individual harmonic components

Applications

Measure power, electric energy bought or sold back to the power grid, standby power, and harmonics of motors, interruptible power supplies, battery chargers, appliances, and consumer electronics.

Key Specifications		
Basic voltage and current accuracy		±(0.1% of reading+ 0.2% of range)
Measurement range	Voltage	0 to 600 Vrms
	Current	0 to 20 Arms
Input bandwidth		DC, 0.5 Hz to 100 kHz
Measurements		Voltage Current Active power Reactive power Apparent power Power factor Phase difference Frequency V Max/V Min A Max/A Min Crest factor Integration Harmonic distortion factor Total harmonic distortion (THD)

DC Power Supplies

MR Series High Voltage Multi-Range DC Power Supplies

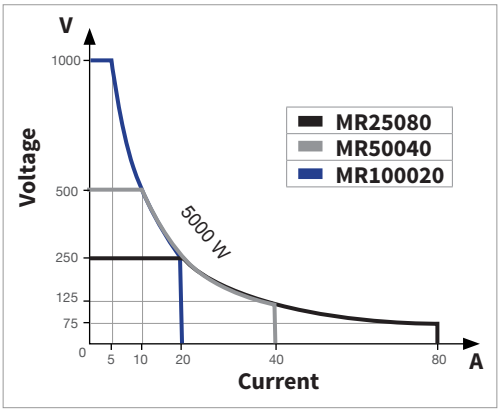
The MR Series 5 kW DC powers supplies offer many features for ATE system and integration applications.

System Integration

- LXI simplifies integration and system development
- Fast command response time (10 ms)
- Compact 2U form factor saves rack space
- LabVIEW™, IVI-C, and IVI.NET drivers provided
- cTUVus certification mark
- Standard USB (USBTMC-compliant), RS232, GPIB and LAN interfaces
- Simple single-phase AC input
- Comprehensive protection features
- Thermostatically-controlled fans help minimize noise

Multi-Range Operation

Delivering lab grade performance, these multi-range power supplies output 5000 W in any Volt/Amp combination within the rated voltage and current limits.



Features & Benefits

- Output up to 1000 V or 80 A
- Analog control and monitoring interface
- Protection features: OVP, OCP, OPP, OTP, foldback protection, and key-lock
- Adjustable voltage and current slope (rise and fall time)
- Place up to 10 power supplies in parallel for more power
- Control up to 30 power supplies from one PC with multi-unit control
- List mode programming
- Soft panel software provided for remote control and data logging
- Built-in solar array simulator (SAS) function

Model	MR25080	MR50040	MR100020
Maximum output voltage	250 V	500 V	1000 V
Maximum output current	80 A	40 A	20 A
Maximum output power		5000 W	

Applications

Design verification, production test, R&D, and other environments requiring a wide range of voltage or current.

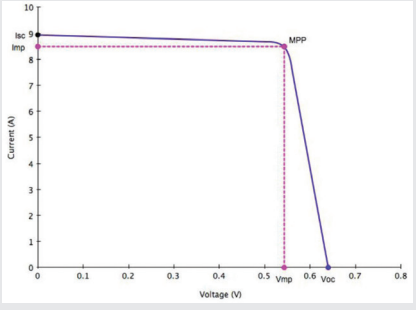
Solar Array Simulation (SAS) Software Option

Combined with the SAS application software, MR users can easily simulate the I-V curve of different arrays under various irradiance conditions while measuring and validating the effectiveness of the inverter's MPPT algorithm.

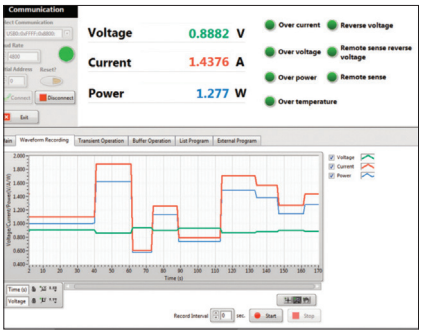
Features

- Variety of input parameters (Voc, Isc, Vmp, Imp, and temperature coefficient)
- Simulate I-V curve under different weather conditions during a day
- Test to EN50530, NB/T32004, Sandia lab standards

PV simulation



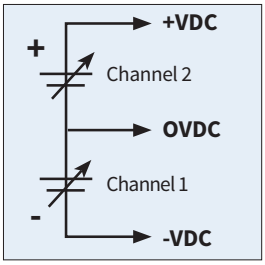
Scan QR code to watch
9130B Series overview video



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

9129B & 9130B Series Triple Output DC Power Supplies

These triple output linear programmable DC power supplies feature isolated outputs that can be adjusted independently or combined in series or parallel to output higher voltage or current. Additionally, these supplies can operate in tracking mode with user-configurable ratios between channels.

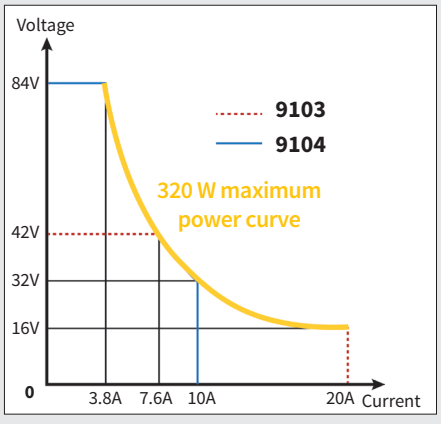


Bipolar output configuration

The independent and isolated outputs can be used to create positive and negative outputs between channels 1 and 2. This feature is useful for powering bipolar circuits and devices.

Model		9129B	9130B	9131B	9132B
Output ratings	Ch1 & Ch2	30 V, 3 A	30 V, 3 A	30 V, 6 A	60 V, 3 A
	Ch3	5 V, 3 A			
	Power	195 W	195 W	375 W	375 W
Ripple and noise	Voltage	≤ 5 mVp-p / 1 mVrms	≤ 1 mVrms		
	Current	≤ 6 mArms	≤ 3 mArms	≤ 5 mArms (ch1/ch2) ≤ 4 mArms (ch3)	≤ 4 mArms
Programming resolution	Voltage	10 mV / 1 mA	1 mV / 1 mA		
	Current				
Load regulation	CV	≤ 0.02% + 4 mV	≤ 0.01% + 3 mV		
	CC	≤ 0.2% + 3 mA	≤ 0.1% + 3 mA		
Remote interface		USB Adapter	USB (USBTMC), RS232, GPIB		
Memory locations		29	36		
Remote sense		--	√		
Output timer		--	√		

Model 9103 / 9104 output characteristics



9103 & 9104 Multi-Range DC Power Supplies

The 9103 and 9104 can replace multiple supplies on your bench or in your rack. Unlike conventional supplies with fixed output ratings, these power supplies automatically recalculate voltage and current limits for each setting, providing max output power in any Volt/Amp combination within the rated voltage and current limits.

Features & Benefits

- Save up to 3 user-defined voltage and current presets for quick recall
- Output On/Off control
- Step and ramp programming function
- Analog remote control function
- USB interface
- Remote sense terminal

Model		9103	9104
Variable output voltage		0 to 42 V	0 to 84 V
Variable output current		0 to 20 A	0 to 10 A
Max power		320 W	
Ripple and noise	Voltage	≤ 80 mVp-p / ≤ 8 mVrms	
	Current	≤ 200 mA	≤ 50 mA
Voltage regulation	Load (0 to 100% rated curent)	≤ 120 mV	≤ 100 mV
	Line (90 to 264 VAC variation)	≤ 10 mV	

DC Power Supplies and DC Electronic Loads

1696B Series Programmable DC Power Supplies

The 1696B Series of compact 200 W DC power supplies are equipped with programming and protection features commonly found in more expensive performance instruments. Programming features include list mode for repetitive operation and 10 user-configurable voltage/current presets for quick recall.

Features & Benefits

- Built-in voltage, current, and power meter
- List mode (timed programming): program up to 20 steps
- Automatic CV/CC crossover operation
- Protection features: overvoltage (OVP), overcurrent (OCP), overtemperature (OTP) and key-lock function
- Control up to 31 power supplies from one PC through RS485
- USB and RS485 interfaces, supports basic SCPI commands

Model	1696B	1697B	1698B
Voltage	1 to 20 V	1 to 40 V	1 to 60 V
Current	0 to 10 A	0 to 5 A	0 to 3.3 A
Max. Output Power	200 W		

Applications

Suitable for many applications including repetitive test routines in R&D, production testing, product evaluation, or in education environments.

PC connectivity

- List mode (timed programming): Quickly set voltage, current, and duration for up to 20 steps
- Data logging function records voltage, current, and power measurements which can be exported in spreadsheet format

8500B Series Programmable DC Electronic Loads

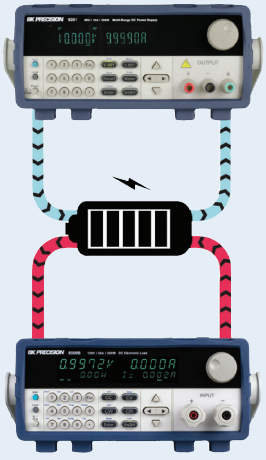
The 8500B Series programmable DC electronic loads improve upon all aspects of its predecessor while maintaining dependability at a value price. This series supports both SCPI and the backwards compatible legacy protocol.

Features & Benefits

- Maximum input power up to 1500 W
- CC/CV/CR/CW operating modes
- Transient mode up to 10 kHz in CC mode
- 16-bit voltage and current measurement system with up to 0.1 mV / 0.1 mA resolution
- List mode and adjustable slew rate in CC mode
- Short circuit test
- Built-in battery test function with voltage level, capacity level, and timer stop conditions

Model	8542B	8500B	8502B	8510B	8514B
Power	150 W	300 W	300 W	600 W	1500 W
Rated Voltage	150 V	150 V	500 V	120 V	120 V
Rated Current	30 A	30 A	15 A	120 A	240 A

Battery test software



Couple the 8500B load with power supplies such as the 9115 or 9200 series to perform charge/discharge tests on batteries.

8600 Series Programmable DC Electronic Loads

Model 8600-8602

Model 8610-8622

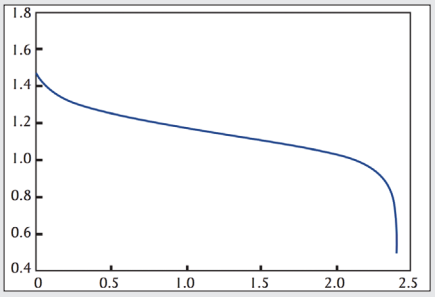
The 8600 Series programmable DC electronic loads provide the performance of modular system DC electronic loads in a compact benchtop form factor. With fast transient operation speeds up to 25 kHz, and high 16-bit measurement resolution and accuracy, these DC loads can be used for testing and evaluating a variety of DC sources such as DC power supplies, DC-DC converters, batteries, battery chargers, and photovoltaic arrays.

Features & Benefits

- CC / CV / CR / CW operating modes
- Measurement speed to 50 kHz
- Remote sense function
- Adjustable slew rate in CC mode
- Standard RS232, USB (USBTMC), and GPIB interfaces supporting SCPI commands for remote control
- Analog current control and monitoring
- OVP / OCP / OPP / OTP and reverse voltage protection

Scan QR code to watch the 8600 Series overview video

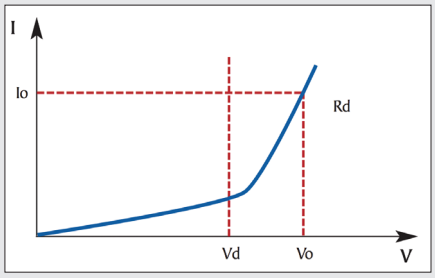
Battery test function



The built-in battery test function uses CC mode to calculate the battery capacity using a fixed current load discharge. Users can specify cut-off voltage level, capacity level and time stop conditions.

Input Ratings			Form Factor	Model
Power	Voltage	Current		
150 W	120 V	30 A	2U half-rack	8600
250 W	120 V	60 A		8601
200 W	500 V	15 A		8602
750 W	120 V	120 A	3U	8610
750 W	500 V	30 A		8612
1500 W	120 V	240 A		8614
1500 W	500 V	60 A		8616
3000 W	120 V	480 A		8620
2500 W	500 V	100 A		8622
4500 W	120 V	600 A	6U	8624
6000 W	120 V	720 A		8625

CR-LED mode



Use the load's unique CR-LED operating mode to test LED drivers. This function allows users to configure the LED's operating resistance and forward voltage to simulate the loading behavior of typical LEDs.

LCR & DC Resistance Meters

2800 Series DC Resistance Meters

The 2800 Series DC resistance meters feature high accuracy and resolution. The 2840 is economically priced to meet the need of applications where extended range and temperature correction are not required.

Applications

Both meters are ideally suited for measuring contact resistance of relays, switches, interconnects, PCB traces, bonds, and cables. The 2841 adds extended range, accuracy and temperature measurement for evaluating coils, motor windings, transformers, actuators and conductive materials.

Touch screen to zoom or enter values

Features & Benefits

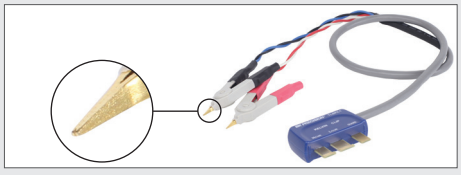
- Four-terminal Kelvin type test leads included
- Low power test mode to protect DUT
- Manual or Auto ranging
- User selectable speed options
- Zero correction
- High-speed bin-sorting with statistical functions
- Comparator with pass/fail alarm beeper function
- Memory for 30 groups of parameters
- Screen capture to USB drive
- AC input power line filtering to eliminate the influence of noise on the instrument
- Handler interface

Model	2840	2841
Measurement range	1 µΩ to 20 kΩ	0.1 µΩ to 110 MΩ
Best accuracy	0.05%	0.01%
Measurement resolution	1 µΩ	0.1 µΩ
Displayed measurements	1	1 or 2
Measurement functions*	R and LPR	R, R-T, T, LPR, LPR-T
Ranges	4 + Auto	11 + Auto
Temperature measurements (TC and ∆t)	--	√
Bins	3	10
Remote interface	RS232, USB (USBTMC)	LAN, RS232, USB (USBTMC)

* R – Resistance, LPR – Low Power Resistance, T - Temperature

880 100 kHz Dual Display Handheld LCR Meter

The 880 offers many features typically found only in bench LCR meters such as test frequencies up to 100 kHz, selectable test signal levels, and 4-terminal measurement capabilities to help minimize measurement errors and improve measurement accuracy.



Kelvin clip test leads (TL8KC1)

SMD tweezer (TL8SM)

Standard accessories include an AC adapter with rechargeable 9 V battery, mini USB cable, shorting plate, banana-to-alligator test leads, Kelvin clip test leads, and additional tweezer accessory for convenient measurement of SMD components.

Key Specifications	
Measurements	L, C, R, G, X, Z, Y, B, G, θ, Q, D, DCR
Basic accuracy	0.1%
Test frequency	100 Hz, 120 Hz, 1 kHz, 10 kHz, 100 kHz
Backlit display	√
Auto detect mode	√
Tolerance mode	1%, 5%, 10%, 20%
Measurement rate	4 readings/sec (fast) 1.5 readings/sec (slow)

Features & Benefits

- 40,000 counts resolution on primary and 10,000 counts resolution on secondary display
- Automatic calculation of secondary parameters D, Q, θ, ESR and DCR
- Data Hold and Min/Max/Average recording
- USB (Virtual COM) interface and SCPI compliant commands for remote communication

894 & 895 Performance LCR Meters

The 894 and 895 are high accuracy and high precision bench LCR meters capable of measuring inductance, capacitance, and resistance with a basic accuracy of 0.05% over a frequency of up to 1 MHz. These meters feature a vivid 4.3-inch TFT LCD with five convenient display modes, auto level control (ALC), cable length compensation (1/2/4 m), and bin sorting comparator. For accurate measurements, these performance LCR meters provide Open, Short, and Load corrections.

USB host port
Connect your USB flash drive to conveniently save data logs, settings, and screenshots.

Intuitive user interface
Easily change test parameters using the menu-driven front panel keypad.

Pass/Fail LED indicators

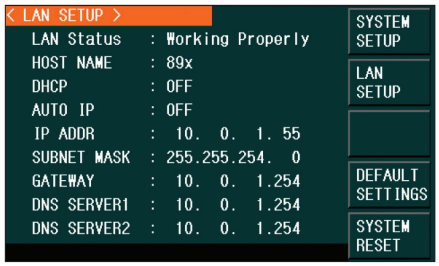
Model 895

4.3-inch TFT color display

Variable test signals
The instrument provides settable voltage levels from 5 mVrms to 2 Vrms to evaluate your DUT.

Zoom display mode
With a touch of a button, users can enlarge the display for easy viewing from a distance. The voltage and current across the DUT are also monitored in this display mode.

Remote PC control

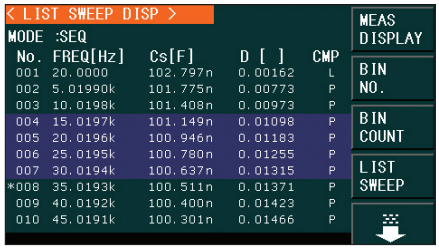


Integrate your LCR meter into an automated test system and control it from a PC using SCPI commands via the RS232, USB, LAN, or GPIB interface.

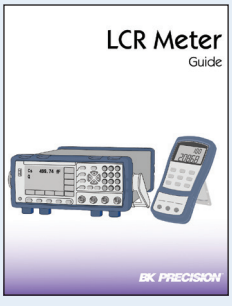
BIN comparator

Use the BIN comparator function to sort components in up to 10 bin locations.

List sweep



Use the built-in sweep function to conveniently display, analyze and store primary and secondary parameters of a component at up to 201 frequencies.



LCR Meter Guide

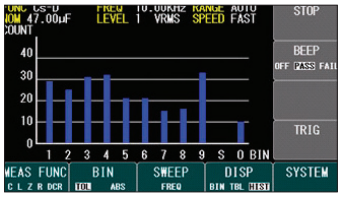
Introduction to the benefits of LCR meters and the theory behind the measurements, plus related terms and example applications.

For guides and applications, visit: **bkprecision.com/product-applications**

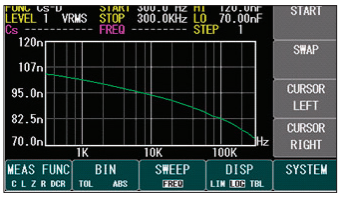
LCR Meters and Signal Generators

891 Bench LCR Meter

The 891 is a compact, precise, and versatile LCR meter capable of measuring inductors, capacitors and resistors at DC or from 20 Hz to 300 kHz, at both low and high impedance ranges. A large color display with all important parameters and measurement visible on one screen makes this meter easy to operate. The outstanding performance of the 891 makes it an invaluable tool for production, quality control, and R&D.



Quickly sort components with 9 primary BINs, 1 secondary BIN, and 1 out BIN



Linear and logarithmic sweep function to characterize components up to 300 kHz

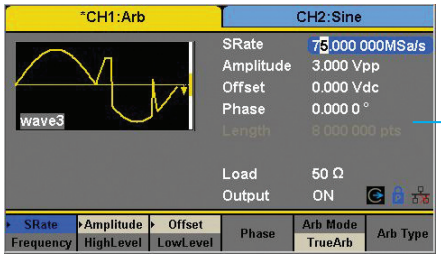
Model		891	894	895
Measurement parameters		L, C, R, G, X, Z, θ, Q, D, DCR	L, C, R, G, X, Z, Y, B, G, θ, Q, D, DCR	
Basic accuracy		0.1%	0.05%	
DCR measurement range		0.1 Ω to 20 MΩ	0.01 Ω to 100 MΩ	
Test signal	Frequency range	20 Hz to 300 kHz	20 Hz to 500 kHz	20 Hz to 1 MHz
	Frequency accuracy	0.1%	0.01%	
	AC level range	0.5 Vrms and 1 Vrms (fixed)	5 mVrms to 2 Vrms / 50 µArms to 20 mArms (adjustable)	
	DC bias	-	±5V / ±50 mA	
	Output impedance	100 Ω (typical)	30 Ω, 50 Ω, or 100 Ω	
Selectable measurement speeds		200 ms (Fast), 800 ms (Slow)	13 ms (Fast), 90 ms (Med), 370 ms (Slow)	
Auto level control (ALC)		-	√	
Cable length compensation		-	√	
Handler interface		-	√	
Remote interface		USB (Virtual COM), GPIB, and LAN	RS232, USB (USBTMC), LAN, and GPIB (895 Only)	
Dimensions		258 x 113 x 381 mm	369 x 108 x 408 mm	
Weight		3.4 kg	5 kg	

4060B Series Dual Channel Function/Arbitrary Waveform Generators

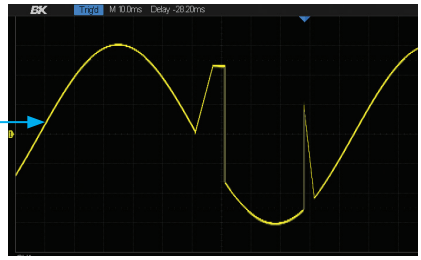
The 4060B Series Dual Channel Function/ Arbitrary Waveform Generators are capable of producing precise sine, square, triangle, pulse, and arbitrary waveforms. The intuitive touchscreen display simplifies control of many features including extensive waveform modulation schemes, linear/logarithmic sweep, burst mode, and variable DC offset.

Dual architecture operation

The 4060B Series arbitrary waveform generator (AWG) architecture can be toggled between conventional DDS or true arbitrary mode. All models are capable of generating 16-bit waveforms up to 300 MSa/s in DDS or 75 MSa/s in true arbitrary mode.



Custom true arbitrary waveform at 75 MSa/s, 8 Mpts

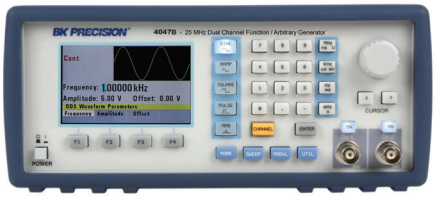


True arbitrary mode oscilloscope view

Shown in the oscilloscope view above, the 8 million point arbitrary waveform is accurately reproduced with high signal fidelity.

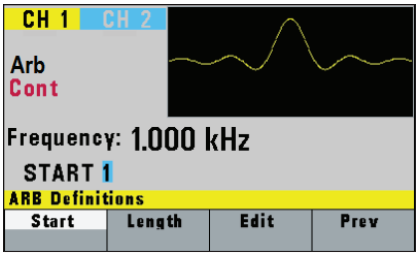
Dual Channel Function/Arbitrary Waveform Generators

4047B



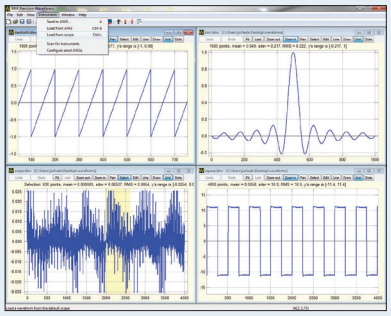
The 4047B is a versatile dual channel 20 MHz function generator with arbitrary waveform capability. It features a true point-by-point AWG (arbitrary waveform generator) architecture to produce accurate and precise arbitrary waveforms combined with a DDS architecture offering easy-to-use conventional function generator capabilities.

Front panel arbitrary waveform generation



From the front panel, waveforms can be defined from scratch by entering data point-by-point or by loading and modifying predefined waveforms.

Waveform editing software

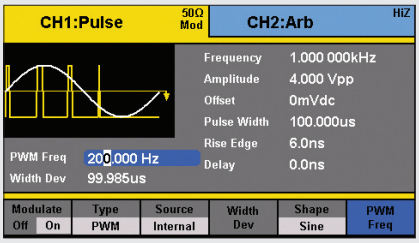


Use WaveXpress to easily generate, edit, and upload custom arbitrary waveforms to the generator via the remote interface. Generate waveforms in the software by importing a text file or define via freehand, point draw, and waveform math functions.

4050B Series

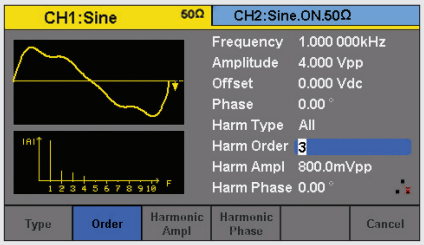
The 4050B Series dual channel function/arbitrary waveform generators are capable of providing stable and precise sine, square, triangle, pulse, and arbitrary waveforms up to 60 MHz, using a DDS-based architecture.

Wide variety of modulation schemes



These instruments are capable of many different types of modulation for various applications.

Harmonics generator function



Generate up to 10 harmonics with independent amplitude and phase settings.

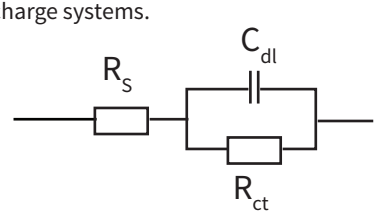
Common Features

- Two fully independent channels with individual output On/Off buttons
- Synchronize the phase of both channels with the push of a button
- Low-jitter square wave generation for simulating reliable clock signals, generating triggers, or validating serial data buses
- Linear and logarithmic sweep
- Variable DC offset
- Adjustable duty cycle
- Internal/external triggering
- Gate and burst mode
- Built-in frequency counter

Model	4047B	4050B Series	4060B Series
Maximum sine frequency	20 MHz	10 MHz to 60 MHz	40 MHz to 120 MHz
Amplitude	0 to 10 Vpp into 50 ohms for entire frequency range	0 to 10 Vpp into 50 Ω, ≤ 10 MHz 0 to 5 Vpp into 50 Ω, >10 MHz	0 to 10 Vpp into 50 Ω, ≤ 20 MHz 0 to 5 Vpp into 50 Ω, > 20 MHz
Modulation	AM, FM, FSK, PM, PWM	AM, DSB-AM, FM, PM, ASK, FSK, PSK, PWM	
Vertical resolution	14 bit		16 bit
AWG architecture	True point-by-point AWG	DDS-based AWG	True-point-by-point and DDS-based AWG
Sample rate	125 MSa/s	150 MSa/s	DDS mode: 300 MSa/s True arbitrary mode: 75 MSa/s
Arbitrary waveform length	16 kpts		8 Mpts
Built-in arbitrary waveforms	9	196	
Dedicated waveform keys	√	-	
Channel tracking	-	√	
Harmonics generator	-	√	
Ext 10 MHz reference I/O	-	√	
Remote interface	USB (Virtual COM)	LAN, USB device (USBTMC), USB host interface	

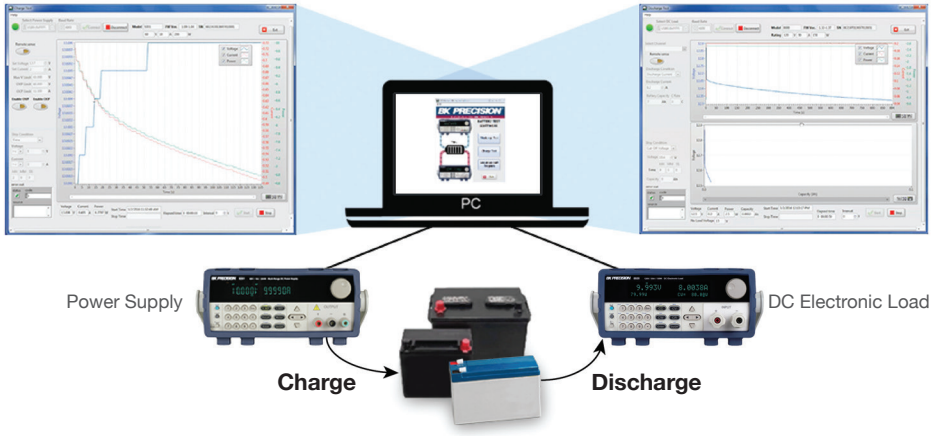
Battery Test Solutions

B&K Precision offers a wide array of internal resistance/impedance based battery test solutions including handheld and benchtop units for field environments, labs, quality control, and production use, as well as frequency response analyzers for complex AC impedance data analysis and charge/discharge systems.



Model of simplified Randles cell

Battery charge/discharge solution with sequencing and data logging



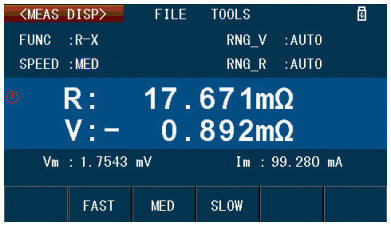
Model	9200/9115 & 8600/8500B	603B	BA6010 & BA6011	BA8100
Test method	**Charge / Discharge** Charge and discharge battery while logging results	**DC Resistance** Measure open and loaded battery voltage and calculate internal DC resistance	**AC Impedance** Uses a 1 kHz fixed frequency AC signal to calculate battery impedance	**EIS (electrochemical impedance spectroscopy)** Stimulate the battery with a low-level sinusoidal AC current at a particular frequency and then measure both the stimulating AC current and the resultant AC voltage. Repeat for various frequencies.
Result	V/I plots with calculated amp-hours (Ah)	Displays remaining capacity of lead-acid battery in % Internal battery resistance	Real-time display of voltage, impedance, phase angle and capacitance	Real-time display of voltage, current and impedance. Generates Nyquist and Bode plots to identify specific battery model elements.
Advantages	Measures actual capacity of a battery directly	Quick, easy and repeatable measurement, records battery measurements	Fast measurement speed. Ability to measure battery capacitance.	Provides large amount of data and detailed information about individual battery model elements
Disadvantages	Time consuming	Not suitable fo batteries over a 100 A	Individual battery model elements seen as one impedance value	Requires complex data analysis

BA6010 Series Battery Analyzers

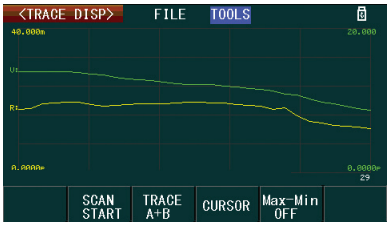
The BA6010 Series Battery Analyzers use a 1 kHz AC constant current source to measure the battery's impedance expressed by 11 different measurement functions. With a basic voltage and impedance accuracy of 0.1% and micro-ohm resolution, these instruments are well-suited for analyzing a wide range of battery types and configurations in the lab, quality control and manufacturing environments.

Features & Benefits

- 4.3-inch color LCD display
- Graphing display of voltage and resistance with on-screen measurement tools
- 4-wire test fixture with monitoring for Hi drive open, Low drive open, and both open
- Compare and sort using 10 bins with statistical evaluations
- Δ% mode for quickly determining the percent difference between batteries
- Pass/Fail indicator with audible tone
- 50 measurements per sec
- Handler interface
- Internal and external file storage



Dual Display



Data logging

Model	Input Voltage	Input Range	Measurement Functions	Test Signal	Basic Accuracy Impedance	Impedance Resolution	Voltage Resolution	Remote Interface
BA6010	100 µV to 60 V	6 V / 60 V	R, R-V, V, R-Q, L-Q, L-R, R-X, C-D, Z-Q, Z-R and R-C	Sine wave (1 kHz ±0.2 Hz)	0.1%	1 µΩ	1 µV	RS232, USB, and GPIB
BA6011	100 µV to 300 V	30 V / 300 V						

BA8100 EIS Battery Analyzer

Swept frequency technology

The BA8100 uses a swept frequency method called EIS (Electrochemical Impedance Spectroscopy). EIS is an accepted technology for evaluating the internal electrochemical and electrical properties of the battery under test. EIS battery analysis can be performed on individual cells or strings with a combined voltage up to 80 V and current up to 3 A. Sweeping the stimulus frequency provides a graphical plot of the battery's response revealing a composite view of the battery's internal properties. Select specific frequencies to evaluate interconnections, deterioration of plates, electrodes, or electrolyte.

Applications

The BA8100 brings EIS technology out of the research lab and into the industrial market with a price-performance ratio perfectly suited for incoming inspection, battery second use (B2U), battery stack service, and manufacturing.

Features & Benefits

- Fixed or swept frequency measurements range (0.05 kHz to 10 kHz)
- Simple 4-wire connection to the battery for accurate measurements
- Perform battery cell or string test up to 80 V
- Measurements of resistance R, reactance X, impedance Z, phase angle θ
- Simultaneous V/I measurement to ensure
- exact phase and impedance information
- LAN, USB, and RS232 interface

Model		BA8100
Impedance Z		±(0.5% of reading + 5 μΩ)
Voltage		0.5 V to 80 V
Current		0.5 A to 3 A DC
Power		200 W maximum
Frequency	Range	0.05 kHz to 10 kHz
	Resolution	0.01 Hz

603B Handheld Battery Capacity Analyzer

with record storage

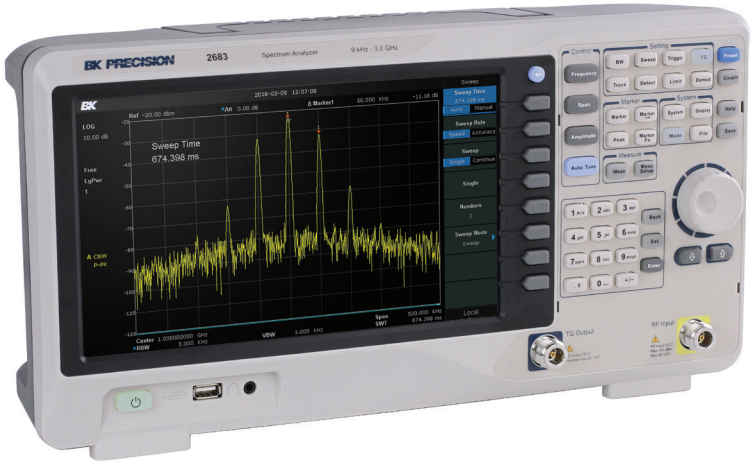
The 603B handheld battery capacity analyzer tests 6 and 12 volt sealed lead acid batteries with capacities up to 100 ampere hour (Ah). Test results include voltage, state of charge, and internal resistance. This analyzer also features a built-in USB port and internal memory to store battery information, test configuration, and measurement results for up to 50 batteries.

Model	603B
Supported SLA battery voltages	6 V & 12 V
Ah range	up to 100 Ah
No load (open circuit) voltage accuracy	0.2% ±10 mV
Internal resistance	✓
Load voltage	✓
Record mode for storing test configurations and results	✓

- Test 6 and 12 volt batteries up to 100 Ah
- Test both open and loaded battery voltage
- Powered by the battery under test (no need to replace battery)
- Fast test cycle time for quick sorting of batteries
- Measurements are stored to internal memory
- Pre-load up to 50 test configurations from the computer via USB
- Export record data to a CSV file for further analysis
- Twist-lock test leads can be changed in seconds

Spectrum Analyzers and Oscilloscopes

2680 Series Spectrum Analyzers



Features & Benefits

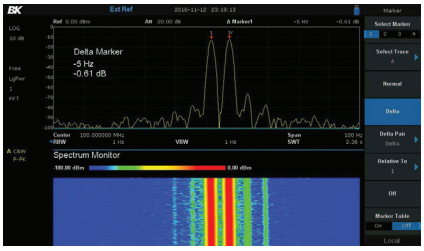
- 10.1-inch wide-screen (1024 x 600) color display
- Preamplifier
- USB host port to store and recall tracking generator

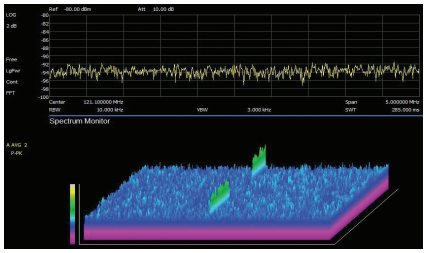
The 2680 series of spectrum analyzers are lightweight and compact, making them ideal for either bench or field applications. The widescreen color display and built in tools allows the user to visualize the waveform and make precision measurements for applications in 2 way radio, site surveying, EMI pre-compliance and more.

Models	2682	2683
Frequency Range	9 kHz to 2.1 GHz	9 kHz to 3.2 GHz
Tracking Generator	√	√
Preamplifier	√	√
1 Hz RBW	√	√
-161 dBm / Hz DANL	√	√

Extended Measurements

- Channel power
- Adjacent channel power
- Occupied bandwidth
- Total power
- Third-order-intercept
- 2D and 3D spectrum monitor

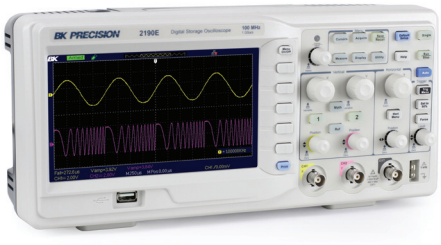




Optional Upgrades

- Reflection measurement
- EMI pre-compliance

2190E 100 MHz Economy Digital Storage Oscilloscope

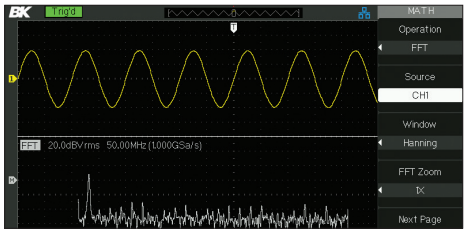


Features & Benefits

- FFT plus four additional math functions
- Versatile triggering capabilities including pulse width, line-selectable video, slope, and alternating trigger
- Advanced tools include digital filter with adjustable limits, pass/fail testing, and waveform recorder mode
- 12 different language user interfaces and context sensitive help

The 2190E oscilloscope combines performance and value all in one portable solution. With a large, high-resolution display, standard LAN and USBTMC-compatible USB interface, advanced triggering capabilities, and extensive features such as digital filtering, waveform recorder and 32 automatic measurements, this oscilloscope offers powerful tools in a small affordable package.

Powerful measurement functions

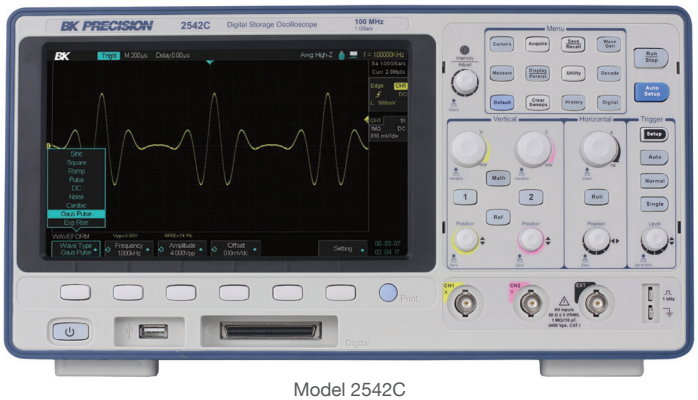


Display and measure the input signal's frequency spectrum. Select one of the 4 FFT windows: Rectangular, Hanning, Hamming and Blackman. Use cursors to measure the spectral component's magnitude and frequency.

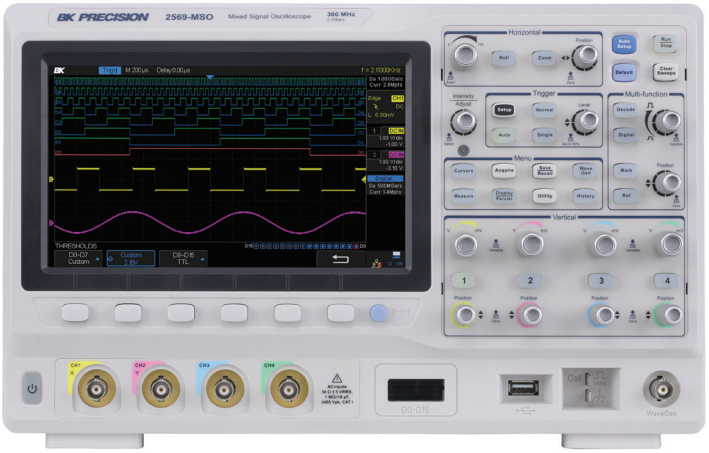
Key Specifications

Bandwidth	100 MHz
Sample rate	1 GSa/s
Memory	40 kpts
Display	7-inch widescreen color LCD with 800 x 480 resolution

2540C & 2560 Series Digital Storage/Mixed Signal Oscilloscopes



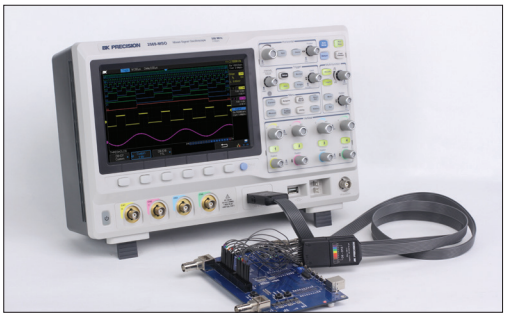
Model 2542C



Model 2569-MSO

The B&K Precision 2540C Series and 2560 Series offer 2- and 4-channel digital storage oscilloscopes (DSO) and mixed signal oscilloscopes (MSO) with bandwidth up to 300 MHz, sample rate up to 2 GSa/s, and deep memory up to 140 Mpts. Maximize productivity using extensive features such as digital filtering, waveform recorder, pass/fail limit testing, and automatic measurements.

In addition, these instruments provide a large 8-inch color display with 256 levels of intensity grading, which allow these units to capture and display more details of a signal for analysis.



16-channel logic probe and logic analyzer function included with MSO models.

	2540C Series			2560 Series					
DSO Model	**2540C**	**2542C**	**2544C**	**2563**	**2565**	**2566**	**2567**	**2568**	**2569**
MSO Model	**2540C-MSO**	**2542C-MSO**	**2544C-MSO**	**2563-MSO**	**2565-MSO**	**2566-MSO**	**2567-MSO**	**2568-MSO**	**2569-MSO**
Channels	2	2	2	4	4	2	4	2	4
Bandwidth	70 MHz	100 MHz	200 MHz	70 MHz	100 MHz	200 MHz	200 MHz	300 MHz	300 MHz
Sample rate	1 GSa/s			2 GSa/s (half-channel interleaved)(1), 1 GSa/s (per channel)					
Max record length	14 Mpts			140 Mpts					
Waveform update rate	60,000 wfms/s			140,000 wfms/s					
Trigger types	Edge, Slope, Pulse, Video, Window, Interval, DropOut, Runt, Pattern								
Waveform math and analysis functions	37 Automatic Measurements, Statistics, Gating, History, Reference, FFT, Addition, Subtraction, Multiplication, Division, Integration, Differential, Square Root								
PC connectivity	Standard LAN (supports SCPI) and USB device port (USBTMC compliant)								
Available Upgrades									
16-channel digital logic probe*	√			√					
Logic analyzer*	√			√					
Serial bus decode and analysis package**	√			√					
25 MHz function/arbitrary waveform generator	Standard			√					

*Standard on MSO model. **Supporting I2C, SPI, UART, RS232, CAN, and LIN Protocols.

(1) On 4-Ch models, Ch1 and Ch2 are interleaved. Half channel operation means that only Ch1 or Ch2 and/or Ch3 or Ch4 is active.

About B&K Precision

For more than 60 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. Our B&K Brasil office supports our expanding customer base in Brazil and other South American countries. The independent service center in Singapore services customers in Singapore, Malaysia, Vietnam, and Indonesia.

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

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