

Data Sheet

Single Output Programmable DC Power Supplies

Models 9120A, 9121A, 9122A, 9123A & 9124

B&K Precision® models 9120A, 9121A, 9122A, 9123A 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 needs 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 time.

- Excellent display resolution
- Low ripple and low noise
- Outstanding temperature stability
- Fast transient response time ($< 150 \mu s$)
- 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

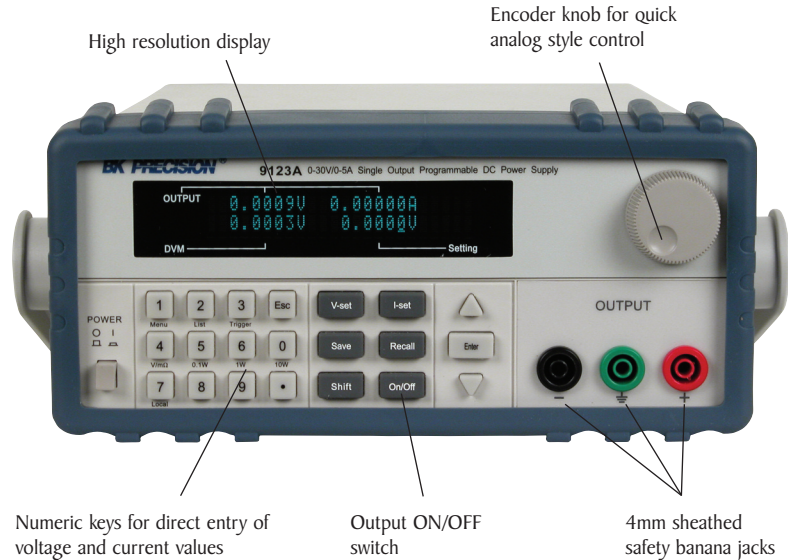
Front Panel Operation

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.



9124

| Models | 9120A | 9121A | 9122A | 9123A | 9124 |
|----------------|-------|-------|--------|-------|--------|
| Output Voltage | 0-32V | 0-20V | 0-60V | 0-30V | 0-72V |
| Output Current | 0-3A | 0-5A | 0-2.5A | 0-5A | 0-1.2A |



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Remote Interface

The power supplies can be remotely controlled from any PC through a USB (virtual com) interface, allowing the user to program and monitor all parameters through easy to use SCPI commands. The power supplies come with a USB to TTL serial converter. Additionally, model 9123A can be controlled via GPIB interface and includes a GPIB to TTL conversion adapter cable.

Extra Features

The 9120 series' 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 5 1/2 digit DVM and high resolution milliohm meter supporting 4 wire measurements.

Specifications

| | models | | | | |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| | 9120A | 9121A | 9122A | 9123A | 9124 |
| Output Ratings (0 °C~40 °C) | 0 ~32V 0~3A | 0 ~20V 0~5A | 0 ~60V 0~2.5A | 0 ~30V 0~5A | 0~72V 0~1.2A |
| Load Regulation ±(%of output+offset) | <0.01%+2mV <0.05%+1mA | | <0.01%+2mV <0.05%+0.5mA | <0.01%+2mV <0.05%+1.5mA | <0.01%+2mV <0.05%+0.3mA |
| Line Regulation ±(%of output+offset) | <0.01%+1mV <0.05%+0.1mA | | <0.01%+2mV ≤0.05%+0.05mA | <0.01%+1mV ≤0.05%+0.1mA | <0.01%+1mV ≤0.05%+0.05mA |
| Programming resolution | 0.5mV 0.1mA | | 1mV 0.1mA | 0.5mV 0.1mA | 2mV 0.02mA |
| Readback/ Meter resolution | 0.1mV 0.01mA | 0.1mV 0.05mA | 0.5mV 0.05mA | 0.1mV 0.05mA | 0.5mV 0.01mA |
| Front panel setting resolution | 0.5mV 0.1mA | | 1mV 0.1mA | 0.5mV 0.1mA | 2mV 0.02mA |
| Programming accuracy, 12months (25 °C ± 5 °C) ±(%of output+offset) | <0.03%+3mV <0.05%+2mA | | ≤0.03%+6mV ≤0.05%+1.5mA | ≤0.03%+3mV ≤0.05%+2.5mA | ≤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%+6mV ≤0.05%+1.5mA | ≤0.02%+2.5mV ≤0.05%+2.5mA | ≤0.02%+5mV ≤0.05%+1mA |
| Ripple & Noise (20Hz ~20MHz) | ≤4mVp-p ≤3mA _{rms} | ≤3mVp-p ≤3mA _{rms} | ≤5mVp-p ≤3mA _{rms} | ≤4mVp-p ≤4mA _{rms} | ≤5mVp-p ≤3mA _{rms} |
| Temperature coefficient, (0 °C~40 °C) ±(% of output+offset) | <0.02%+3mV <0.05%+2mA | | ≤0.02%+6mV <0.05%+1mA | ≤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%+6mV ≤0.05%+1mA | ≤0.02%+3mV ≤0.05%+2mA | ≤0.02%+5mV ≤0.05%+0.5mA |
| Transient Response | < 150 μs for output to recover to within 75 mV following a change from 100 mA to 1 A | | | | |
| DVM Accuracy | 0~12V range: 0.02%+2mV 0~40V range: 0.02%+3mV | | | | |
| DVM Resolution | 0~12V range: 0.1mV 0~40V range: 1mV | | | | |
| Miliohm Meter Accuracy | 0.1% (for Voltage and Current ≥10% of full scale) 0.3% (for Voltage and Current ≥3% of full scale) | | | | |
| 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 | | | | |
| AC Input | 115V/220VAC ± 10%, 47 to 63Hz | | | | |
| Weight | 19.8 lbs, (9 kg) | | 21.2 lbs, (9.6 kg) | | 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) | | | | |

Three-Year Warranty

Standard Accessories: User manual, power line cord, USB to TTL serial converter IT-E132B, and software installation disk. Model 9123A also includes IT-E135 GPIB to TTL conversion adapter cable.
 Optional Accessories: IT-E151 rack mount kit.



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

