

Data Sheet

High Power Switching DC Power Supplies  
Models 1900, 1901 & 1902



Full-Featured DC Power Supplies to Meet Your High Power Needs

B&K Precision models 1900, 1901, and 1902 are laboratory grade switching DC power supplies with high current output in a small, lightweight form factor. The 1900 Series provide various configurations of high output voltage or high output current and feature rotary encoder control knobs, which make setting voltage and current fast and precise. Its dual action push button allows the user to set both coarse and fine, voltage and current levels.

In addition to constant voltage (CV) and constant current (CC) modes, the high efficiency DC power supply offers a unique solution with

its preset and remote control modes. Save up to three different presets of voltage and current values for quick recall. The analog remote control function allows the output power, voltage, and current to be adjusted without touching the front panel of the power supply. A remote sensing terminal (model 1900 only) is also available to compensate for voltage drop across load leads.

These features make the 1900, 1901, and 1902 suitable for a wide range of applications requiring high current including production testing, telecommunications, R&D, service, and university labs.

Features and Benefits

- Automatic CV (Constant Voltage)/CC (Constant Current) crossover operation
- Up to 60 A output current
- Lightweight and compact
- Rotary encoder control for precise voltage and current setting
- Save up to 3 user-defined voltage and current presets for quick recall
- Analog remote control function
- Remote sensing terminal (model 1900 only)
- Overvoltage, overtemperature, and overload protection
- Flexible operating modes: Front panel (normal), Preset, or Remote Control
- Front panel 5 amp auxiliary output

| Outputs/Model           | 1900     | 1901     | 1902     |
|-------------------------|----------|----------|----------|
| Variable Output Voltage | 1 - 16 V | 1 - 32 V | 1 - 60 V |
| Variable Output Current | 0 - 60 A | 0 - 30 A | 0 - 15 A |

## Designed to Make Your Work Easier

### Fully Protected

Have peace of mind knowing that these power supplies come with built-in OVP (overvoltage protection), OTP (overtemperature protection), and OLP (overload protection) circuitry. These protections help prevent serious damage to equipment in case of power supply failure.

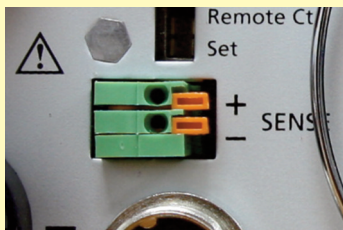
### Custom Presets

Quickly use common voltage and current settings with a flip of the Recall preset switch. Up to three different presets can be set and recalled.



### Analog Remote Control Capability

Use the included connector to wire up to an external variable DC voltage source or variable resistor to remotely control the power supply's output voltage and current or to turn the output on/off.



### Remote Sense (Model 1900 only)

Improve regulation of the power supply's output voltage at the load by using the remote sense terminals to compensate for voltage drop across load leads.

## Flexibility & Performance



## Specifications

| Models                                   | 1900                                                                                              | 1901                                                                                         | 1902                                                                                         |
|------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| Output                                   |                                                                                                   |                                                                                              |                                                                                              |
| Variable Output Voltage                  | 1 – 16 V                                                                                          | 1 – 32 V                                                                                     | 1 – 60 V                                                                                     |
| Variable Output Current                  | 0 – 60 A                                                                                          | 0 – 30 A                                                                                     | 0 – 15 A                                                                                     |
| Auxiliary Output Current                 | 5 A                                                                                               |                                                                                              |                                                                                              |
| Voltage Regulation                       |                                                                                                   |                                                                                              |                                                                                              |
| Load (0-100% Load)                       | ≤ 50 mV                                                                                           |                                                                                              |                                                                                              |
| Line (90-132 VAC, 170-264 VAC Variation) | ≤ 20 mV                                                                                           |                                                                                              |                                                                                              |
| Current Regulation                       |                                                                                                   |                                                                                              |                                                                                              |
| Load (10-90% Rated Voltage)              | ≤ 200 mA                                                                                          | ≤ 150 mA                                                                                     | ≤ 100 mA                                                                                     |
| Line (90-132 VAC, 170-264 VAC Variation) | ≤ 50 mA                                                                                           |                                                                                              |                                                                                              |
| Ripple & Noise                           |                                                                                                   |                                                                                              |                                                                                              |
| Ripple & Noise Voltage (rms)             | ≤ 5 mV                                                                                            |                                                                                              |                                                                                              |
| Ripple & Noise Voltage (peak-peak)       | ≤ 50 mV                                                                                           | ≤ 50 mV                                                                                      | ≤ 100 mV                                                                                     |
| Current Ripple & Noise (rms)             | ≤ 100 mA                                                                                          | ≤ 50 mA (110 VAC)<br>≤ 40 mA (230 VAC)                                                       | ≤ 15 mA                                                                                      |
| Meter Type & Accuracy                    |                                                                                                   |                                                                                              |                                                                                              |
| Voltage Meter                            | 3-Digit LED Display ± 0.2% + 3 counts                                                             |                                                                                              |                                                                                              |
| Current Meter                            | 3-Digit LED Display ± 0.2% + 3 counts                                                             |                                                                                              |                                                                                              |
| Other                                    |                                                                                                   |                                                                                              |                                                                                              |
| AC Input                                 | 100 - 120 VAC 60 Hz, 220 - 240 VAC 50 Hz*                                                         |                                                                                              |                                                                                              |
| Full Load Input Current                  | 9.4 A (110 VAC)<br>4.7 A (230 VAC)                                                                | 9.0 A (110 VAC)<br>4.5 A (230 VAC)                                                           | 9.3 A (110 VAC)<br>4.5 A (230 VAC)                                                           |
| Efficiency                               | 84% (110 VAC)<br>85% (230 VAC)                                                                    | 87% (110 VAC)<br>86% (230 VAC)                                                               | 87% (110 VAC)<br>88% (230 VAC)                                                               |
| Switching Frequency                      | 65 – 85 kHz                                                                                       | 75 – 95 kHz                                                                                  | 65 – 85 kHz                                                                                  |
| Tracking Overvoltage Protections         | O/P 1-5 V: set voltage +2 V<br>O/P 5-16 V: set voltage +3 V                                       | O/P 1-5 V: set voltage +2 V<br>O/P 5-20 V: set voltage +3 V<br>O/P 20-32 V: set voltage +4 V | O/P 1-5 V: set voltage +2 V<br>O/P 5-20 V: set voltage +3 V<br>O/P 20-60 V: set voltage +4 V |
| Transient Response Time (50-100% Load)   | 1.5 ms                                                                                            |                                                                                              |                                                                                              |
| Power Factor Correction                  | > 0.95 at optimal load                                                                            |                                                                                              |                                                                                              |
| Cooling Method                           | Thermostatically controlled fan from zero to full speed                                           |                                                                                              |                                                                                              |
| Protections                              | Overload, Short Circuit by Constant Current, Overvoltage, Overtemperature                         |                                                                                              |                                                                                              |
| Special Features                         | 3 User-Defined Voltage and Current Presets, Analog Remote Control, Remote Sense (model 1900 only) |                                                                                              |                                                                                              |
| Operating Temperature                    | 32 °F to 104 °F (0 °C to 40 °C), ≤ 80% R.H.                                                       |                                                                                              |                                                                                              |
| Storage Temperature                      | 5 °F to 158 °F (-15 °C to 70 °C), ≤ 85% R.H.                                                      |                                                                                              |                                                                                              |
| Dimensions (W x H x D)                   | 7.9" x 3.5" x 10.8" (200 x 90 x 275 mm)                                                           |                                                                                              |                                                                                              |
| Weight                                   | 7 lbs (3.2 kg)                                                                                    |                                                                                              |                                                                                              |
| Two-Year Warranty                        |                                                                                                   |                                                                                              |                                                                                              |
| Included Accessories                     | Power cord, instruction manual, remote control connector                                          |                                                                                              |                                                                                              |

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.

\*Special order instructions: For 230 V version, request model 1900-220 V, 1901-220 V, or 1902-220 V.