Data Sheet

Switching DC Power Supplies

Models 1685B, 1687B & 1688B



B&K Precision models 1685B, 1687B, and 1688B are laboratory grade switching mode DC power supplies with high current output in a small, lightweight form factor. These power supplies provide various configurations of output voltage and current, and feature rotary encoder control knobs, which make setting voltage and current levels fast and precise. Its dual action push button allows the user to easily set both coarse and fine, voltage and current levels.

In addition to its constant voltage (CV) and constant current (CC) modes, these high efficiency DC power supplies offer preset and remote control modes. Save up to three different presets of voltage and current values for quick recall. For remote control, an analog remote control terminal is accessible on the rear, or use the USB interface to communicate with the power supply via PC software or remote commands.

These features make the 1685B Series suitable for a wide range of applications including production testing, telecommunications, R&D, electronic field service, and university labs.

Features and Benefits

- Automatic CV/CC crossover operation
- 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
- PC software for remote control and external timed programming
- Analog remote control function
- USB interface
- Front panel auxiliary output
- Overvoltage, overtemperature, and overload protection

Outputs / Model	1685B	1687B	1688B
Variable Output Voltage	1 - 60 V	1 - 36 V	1 - 18 V
Variable Output Current	0 - 5 A	0 - 10 A	0 - 20 A

Technical data subject to change
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B&K PRECISION
ELECTRONIC TEST INSTRUMENTS

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.



PC Connectivity

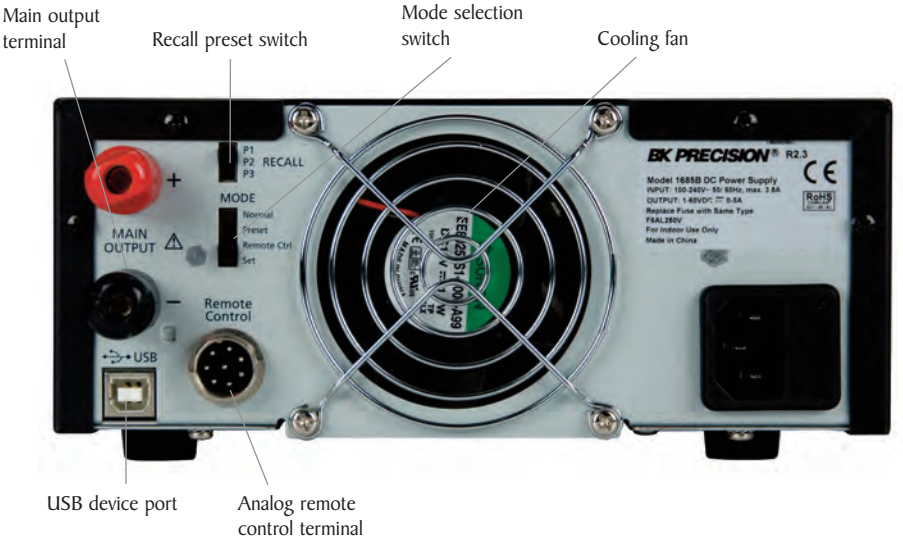
Control your instrument through remote control PC software or use programming commands to communicate with your instrument.

Flexibility & Performance

Front Panel



Rear Panel



Specifications

Models	1685B	1687B	1688B
Output			
Variable Output Voltage	1 – 60 V	1 – 36 V	1 – 18 V
Variable Output Current	0 – 5 A	0 – 10 A	0 – 20 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)	≤ 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		
Current Ripple & Noise (rms)	≤ 30 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			
Input Voltage	100-240 VAC 50/60 Hz		
Full Load Input Current	3.7 A (100 VAC) 1.7 A (230 VAC)	4.6 A (100 VAC) 2.1 A (230 VAC)	4.6 A (100 VAC) 2.1 A (230 VAC)
Efficiency	82% (100 VAC) 86% (230 VAC)	82% (100 VAC) 86% (230 VAC)	81% (100 VAC) 85% (230 VAC)
Switching Frequency	100 – 120 kHz		
Tracking Overvoltage Protections	O/P 1-5 V: set voltage +2 V O/P 5-20 V: set voltage +3 V O/P 20-60 V: set voltage +4 V	O/P 1-5 V: set voltage +2 V O/P 5-20 V: set voltage +3 V O/P 20-36 V: set voltage +4 V	O/P 1-5 V: set voltage +2 V O/P 5-18 V: set voltage +3 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, Overvoltage, Overtemperature		
Special Features	3 User-Defined Voltage and Current Presets, Analog Remote Control		
External Timed Programming	Max. 20 voltage and current steps Max. 99 min + 59 sec step time Max. 999 running cycles		
General			
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 (WxHxD)	7.9" x 3.5" x 8.2" (200 x 90 x 208 mm)		
Weight	5.2 lbs (2.4 kg)		
			Two Year Warranty
Supplied accessories	Power cord, instruction manual, USB cable, 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.