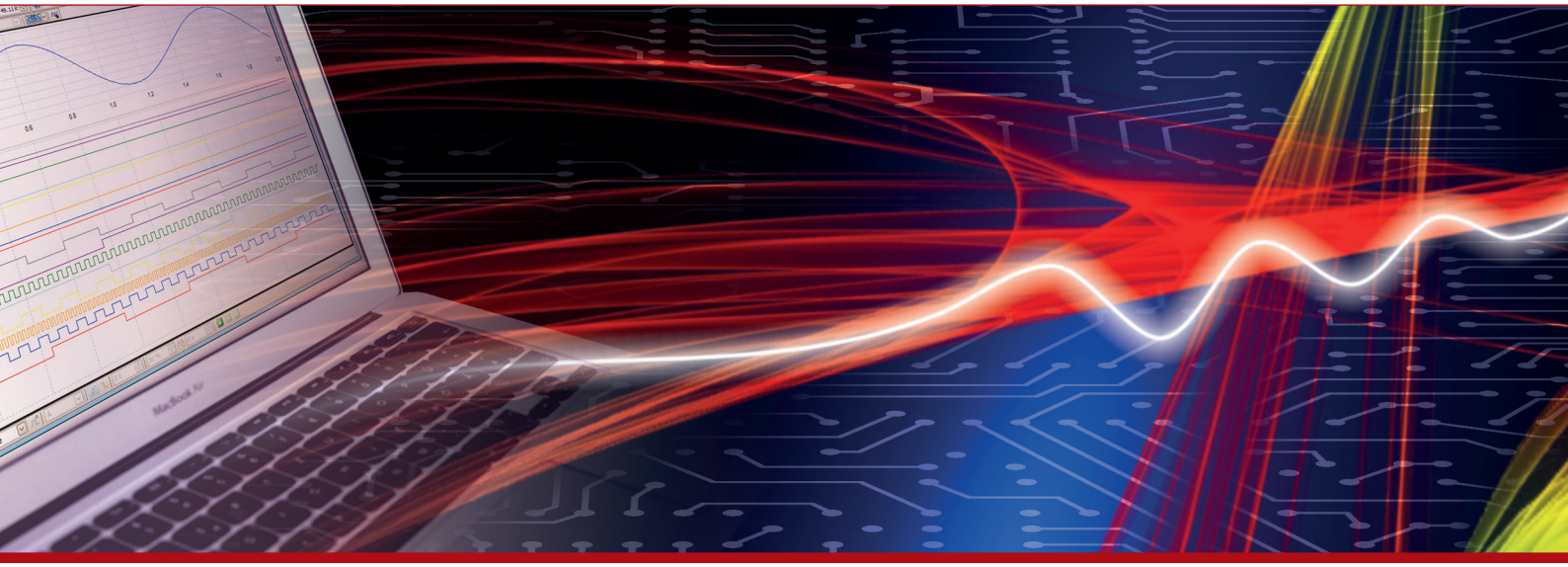
# Product Datasheet - Technical Specifications



More information in our Web-Shop at ▸ **www.meilhaus.com** and in our download section.

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## 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 |



B&K PRECISION
ELECTRONIC TEST INSTRUMENTS

## Designed to Make Your Work Easier

### Fully Protected

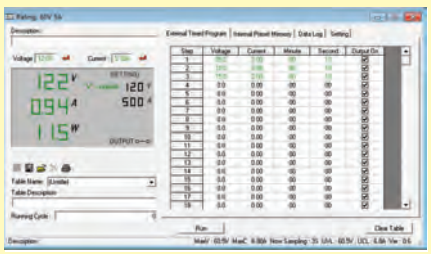
Have peace of mind knowing that these power supplies come with built-in OVP (overvoltage protection), OTP (overtemperature protection), and OLP (overload protection) circuitry. These protections help prevent serious damage to equipment in case of power supply failure

### 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.



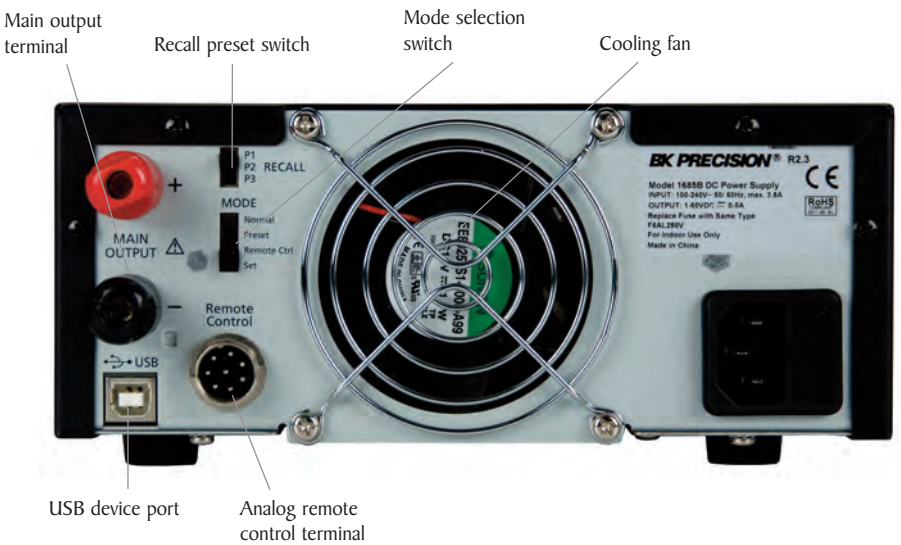
### PC Connectivity

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)<br>1.7 A (230 VAC) | 4.6 A (100 VAC)<br>2.1 A (230 VAC) | 4.6 A (100 VAC)<br>2.1 A (230 VAC) |
| Efficiency | 82% (100 VAC)<br>86% (230 VAC) | 82% (100 VAC)<br>86% (230 VAC) | 81% (100 VAC)<br>85% (230 VAC) |
| Switching Frequency | 100 – 120 kHz | | |
| Tracking Overvoltage Protections | 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 | O/P 1-5 V: set voltage +2 V<br>O/P 5-20 V: set voltage +3 V<br>O/P 20-36 V: set voltage +4 V | O/P 1-5 V: set voltage +2 V<br>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<br>Max. 99 min + 59 sec step time<br>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, application software CD, 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.