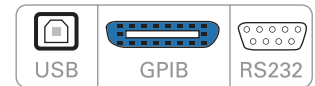


## Programmable Triple Output DC Power Supplies 9130B Series



The 9130B Series 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.

The front panel keys and rotary knob with convenient cursors let users quickly set voltage and current values. Up to 36 different instrument settings can be saved and recalled. The power-on state of the outputs can also be configured.

For remote control, the standard USB (USBTMC-compliant), RS232, and GPIB interfaces

supporting SCPI commands can be used to remotely control the power supplies via a PC. Alternatively, users can control the power supply, execute test sequences or log measurements using the provided PC software application. This software also integrates with Data Dashboard for LabVIEW apps enabling iOS, Android, or Windows 8 compatible tablets or smartphones to remotely monitor select measurement indicators.

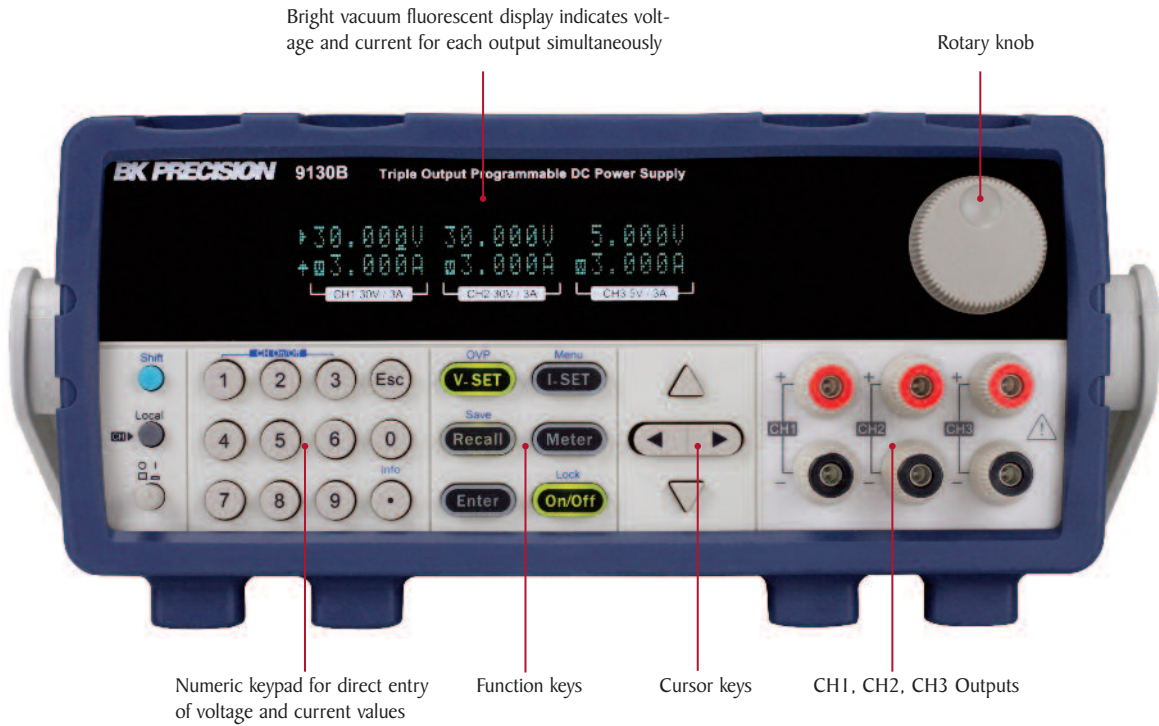
These power supplies are suitable for a wide range of applications including production testing, telecommunications, R&D, electronic service, and labs.

### Features

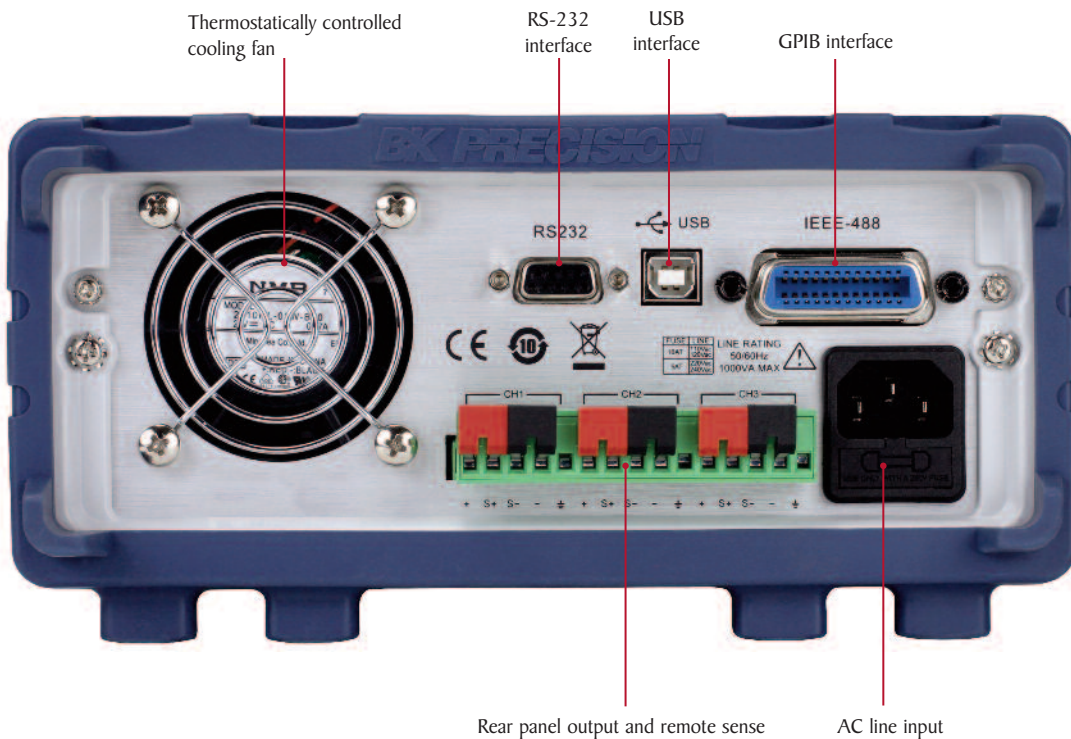
- Three independent and electrically isolated outputs
- Displays voltage and current settings for all three channels simultaneously
- Low noise, linear regulation
- High programming and readback resolution of 1 mV / 1 mA
- Series and parallel modes combine channels to increase the output voltage or current
- Tracking mode allows users to set up channels to maintain a programmed ratio
- Fully programmable channels with Output On/Off control
- Store and recall up to 36 instrument settings
- Remote sense
- Timer-controlled output function adjustable from 0.1 – 99999.9 s
- Standard USB (USBTMC-compliant), RS232, and GPIB interfaces supporting SCPI commands for remote control
- NI certified LabVIEW driver and softpanel for remote control, test sequence generation, and datalogging available
- Overvoltage (OVP) and overtemperature (OTP) protection including keylock function
- Compact 19" half-rack form factor allows for side-by-side rack mounting of two units

| Model   | 9130B                                 | 9131B                                 | 9132B                                 |
|---------|---------------------------------------|---------------------------------------|---------------------------------------|
| Voltage | 0 - 30 V (Ch1 & Ch2)<br>0 - 5 V (Ch3) | 0 - 30 V (Ch1 & Ch2)<br>0 - 5 V (Ch3) | 0 - 60 V (Ch1 & Ch2)<br>0 - 5 V (Ch3) |
| Current | 0-3 A (Ch1, Ch2 & Ch3)                | 0-6 A (Ch1 & Ch2)<br>0 - 3 A (Ch3)    | 0-3 A (Ch1, Ch2 & Ch3)                |

## Front panel



## Rear panel



## Flexible operation

### Combined series mode

|   |         |        |        |
|---|---------|--------|--------|
| ⌘ | 120.00V | Series | 5.000V |
|   | 3.000A  | CH1+2  | 3.000A |

Ch1 and Ch2 in Series mode

Channels 1 and 2 can be wired in series to increase the voltage. Selecting Series Combined Mode provides convenient metering of the channels connected in series.

### Combined parallel mode

|   |        |      |      |
|---|--------|------|------|
| ⌘ | 5.000V | Para | Para |
|   | 9.000A | ALL  | ALL  |

All Channels in Parallel mode

Channels 1 and 2, 2 and 3, or All channels can be wired in parallel to increase the current. Selecting Parallel Combined Mode provides convenient metering of the channels connected in parallel.

### Tracking mode

|   |         |         |     |
|---|---------|---------|-----|
| ⌘ | Track   |         |     |
|   | CH1+CH2 | CH2+CH3 | ALL |

Tracking mode options

|   |         |         |        |
|---|---------|---------|--------|
| ⌘ | 60.000V | 20.000V | 5.000V |
| ⌘ | 3.000A  | 1.000A  | 3.000A |

Ch1 and Ch2 in Tracking mode

Tracking mode can be used to simplify adjustments across multiple channels by maintaining a user-defined ratio between outputs. Tracking mode can be set on channels 1 and 2, and 3, or All channels.

## Remote control and programming

### Test system integration

These power supplies offer standard USB, RS-232, and GPIB interfaces to facilitate test system development and integration. The 9130B Series supports SCPI-compliant protocols and come with LabVIEW™ drivers.

### Application software

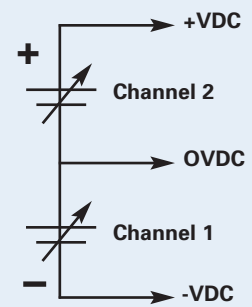


PC software is provided for front panel emulation, generating and executing test sequences or logging measurement data without the need to write source code.

- Remote monitoring on iOS, Android, or Windows 8 compatible tablets or smartphones via NI Data Dashboard for LabVIEW apps.
- Log voltage, current, and power values of each channel as well as timestamp, CV/CC mode, and output status.
- Quickly develop a custom dashboard with indicators, charts, or gauges to monitor your power supply.
- Create an unlimited number of external list files to be executed from PC memory. Save and recall list files to/from the PC.

### 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.

## Specifications

| Models                                                                                        |          | 9130B                                                                       | 9131B                                                                      | 9132B                           |
|-----------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------|
| <b>Output Rating</b>                                                                          |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          | 0-30 V (Ch1 & Ch2), 0-5 V (Ch3)                                             | 0-30 V (Ch1 & Ch2), 0-5 V (Ch3)                                            | 0-60 V (Ch1 & Ch2), 0-5 V (Ch3) |
| Current                                                                                       |          | 0-3 A (Ch1, Ch2), 0-3 A (Ch3)                                               | 0-6 A (Ch1, Ch2), 0-3 A (Ch3)                                              | 0-3 A (Ch1, Ch2), 0-3 A (Ch3)   |
| Power                                                                                         |          | 195 W                                                                       | 375 W                                                                      | 375 W                           |
| <b>Load Regulation</b>                                                                        |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | $\leq 0.01\% + 3 \text{ mV}$                                               |                                 |
| Current                                                                                       |          |                                                                             | $\leq 0.1\% + 3 \text{ mA}$                                                |                                 |
| <b>Line Regulation</b>                                                                        |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | $\leq 0.01\% + 3 \text{ mV}$                                               |                                 |
| Current                                                                                       |          |                                                                             | $\leq 0.1\% + 3 \text{ mA}$                                                |                                 |
| <b>Ripple &amp; Noise</b>                                                                     |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          | $\leq 1 \text{ mVrms}$                                                      | $\leq 1 \text{ mVrms}$                                                     | $\leq 1 \text{ mVrms}$          |
| Current                                                                                       |          | $\leq 3 \text{ mArms}$                                                      | $\leq 5 \text{ mArms}$ (Ch1 & Ch2), $\leq 4 \text{ mArms}$ (Ch3)           | $\leq 4 \text{ mArms}$          |
| <b>Temperature Coefficient (0 °C to 40 °C) <math>\pm</math> (% output + offset) (typical)</b> |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | $\leq 0.03\% + 10 \text{ mV}$                                              |                                 |
| Current                                                                                       |          |                                                                             | $\leq 0.1\% + 5 \text{ mA}$                                                |                                 |
| <b>Programming Resolution</b>                                                                 |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | 1 mV                                                                       |                                 |
| Current                                                                                       |          |                                                                             | 1 mA                                                                       |                                 |
| <b>Readback Resolution</b>                                                                    |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | 1 mV                                                                       |                                 |
| Current                                                                                       |          |                                                                             | 1 mA                                                                       |                                 |
| <b>Programming Accuracy <math>\pm</math> (% output + offset)</b>                              |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | $\leq 0.03\% + 10 \text{ mV}$                                              |                                 |
| Current                                                                                       |          | $\leq 0.1\% + 5 \text{ mA}$                                                 | $\leq 0.1\% + 8 \text{ mA}$ (Ch1 & Ch2), $\leq 0.1\% + 5 \text{ mA}$ (Ch3) | $\leq 0.1\% + 5 \text{ mA}$     |
| <b>Readback Accuracy <math>\pm</math> (% output + offset)</b>                                 |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | $\leq 0.03\% + 10 \text{ mV}$                                              |                                 |
| Current                                                                                       |          | $\leq 0.1\% + 5 \text{ mA}$                                                 | $\leq 0.1\% + 8 \text{ mA}$ (Ch1 & Ch2), $\leq 0.1\% + 5 \text{ mA}$ (Ch3) | $\leq 0.1\% + 5 \text{ mA}$     |
| <b>Series Accuracy (combined mode)</b>                                                        |          |                                                                             |                                                                            |                                 |
| Current                                                                                       |          |                                                                             | $\leq 0.05\% + 10 \text{ mA}$                                              |                                 |
| <b>Parallel Accuracy (combined mode)</b>                                                      |          |                                                                             |                                                                            |                                 |
| Voltage                                                                                       |          |                                                                             | $\leq 0.02\% + 5 \text{ mV}$                                               |                                 |
| Current                                                                                       |          |                                                                             | $\leq 0.1\% + 20 \text{ mA}$                                               |                                 |
| <b>General</b>                                                                                |          |                                                                             |                                                                            |                                 |
| Transient Response Time <sup>1</sup>                                                          | Ch1, Ch2 | $\leq 180 \mu\text{s}$                                                      | $\leq 120 \mu\text{s}$                                                     | $\leq 90 \mu\text{s}$           |
|                                                                                               | Ch3      | $\leq 160 \mu\text{s}$                                                      | $\leq 200 \mu\text{s}$                                                     | $\leq 80 \mu\text{s}$           |
| Rising Time at Full Load / No Load                                                            | Ch1, Ch2 | $\leq 100 \text{ ms}$                                                       | $\leq 100 \text{ ms}$                                                      | $\leq 100 \text{ ms}$           |
|                                                                                               | Ch3      | $\leq 20 \text{ ms}$                                                        | $\leq 100 \text{ ms}$                                                      | $\leq 100 \text{ ms}$           |
| Falling Time at Full Load                                                                     | Ch1, Ch2 | $\leq 2.4 \text{ ms}$                                                       | $\leq 1.5 \text{ ms}$                                                      | $\leq 5 \text{ ms}$             |
|                                                                                               | Ch3      | $\leq 1 \text{ ms}$                                                         | $\leq 1.5 \text{ ms}$                                                      | $\leq 4.5 \text{ ms}$           |
| Falling Time at No Load                                                                       | Ch1, Ch2 | $\leq 4 \text{ s}$                                                          | $\leq 1 \text{ s}$                                                         | $\leq 5 \text{ s}$              |
|                                                                                               | Ch3      | $\leq 300 \text{ ms}$                                                       | $\leq 1 \text{ s}$                                                         | $\leq 150 \text{ ms}$           |
| Memory                                                                                        |          | 4 memory groups with 9 locations in each group                              |                                                                            |                                 |
| Timer                                                                                         |          | 0.1 - 99999.9 seconds                                                       |                                                                            |                                 |
| Remote Interface                                                                              |          | USB (USBTMC-compliant), GPIB, RS-232                                        |                                                                            |                                 |
| AC Input                                                                                      |          | 110/220 VAC (+/- 10%), 47 Hz - 63 Hz                                        |                                                                            |                                 |
| Operating Temperature                                                                         |          | 32 °F to 104 °F (0 °C to 40 °C), relative humidity up to 80%                |                                                                            |                                 |
| Storage Temperature                                                                           |          | -4 °F to 158 °F (-20 °C to 70 °C)                                           |                                                                            |                                 |
| Dimensions (W x H x D)                                                                        |          | 8.45" x 3.47" x 13.96" (214.5 x 88.2 x 354.6 mm)                            | 8.45" x 3.47" x 17.52" (214.5 x 88.2 x 445 mm)                             |                                 |
| Weight                                                                                        |          | 16.98 lbs. (7.7 kg)                                                         | 33.07 lbs. (15 kg)                                                         |                                 |
| <b>Three-Year Warranty</b>                                                                    |          |                                                                             |                                                                            |                                 |
| Standard Accessories                                                                          |          | Power cord, instruction manual, test report, and certificate of calibration |                                                                            |                                 |
| Optional Accessories                                                                          |          | IT-E151 rack mount kit                                                      |                                                                            |                                 |

<sup>1</sup> Following a change in output current from 10% to 100% load with output recovery to within 15 mV.

Note: All specifications apply to the unit after a temperature stabilization time of 15 minutes over an ambient temperature range of 23 °C  $\pm$  5 °C.