



Keithley DC Load SOP

Standard Operating Procedures for the Keithley brand of DC Loads.

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Step 1 — Layout



- Here is the layout for the front panel:
- Power on/off switch
- Navigation Control
- Function Keys
- Numeric Keypad, Esc Key, Combination Buttons
- Navigation Arrow Keys, Enter, Trigger, On/Off Button
- Input Terminals

Step 2 — Main Button Functions



- The **Shift** key allows access to secondary functions (similar to how shift works on an ordinary computer)
- The **Local** key sets the instrument back to local usage (Used if the instrument is connected to a remote device to switch back to inputs directly from the device)
- The **Recall** key loads previously stored instrument settings
- The **CC** key sets the load to Constant Current (CC) mode and configures the current value
- The **CV** key sets the load to Constant Voltage (CV) mode and configures the voltage value
- The **CR** key sets the load to Constant Resistance (CR) mode and configures the resistance value
- The **CP** key sets the load to Constant Power (CP) mode and configures the power value

Step 3 — Constant Current Operation Mode (CC)



- Under CC mode, the electronic load consumes constant current regardless of whether the input voltage changes or not.
- You can set the constant current by one of the following ways:
 - Turn the navigation control to set the constant current.
 - Use numeric keys to input the current value and press **Enter** to confirm the setting.
 - Use the arrow keys to adjust the value.
- The voltage and current limits and the maximum current change speed can be changed by pressing **Shift + CV** when in CC mode. They have a maximum of 120V, 60A, and 5A/μS.

Step 4 — Constant voltage Operation Mode (CV)



- Under CV mode, the load consumes sufficient current to maintain the input voltage at the constant setting voltage
- You can change the constant voltage by one of the following ways:
 - Turn the navigation control to set the constant voltage
 - Use numeric keys to input the voltage value and press **Enter** to confirm the setting
 - Use the arrow keys to adjust the value

⚠ The voltage and current limits can be changed by pressing **Shift + CV** when in CV mode. They have a maximum of 120V and 66A, but **do not** set the current limit above 60A

Step 5 — Constant Resistance Operation Mode (CR)



- You can set the constant resistance by one of the following ways:
 - Turn the navigation control to set the constant resistance.
 - Use numeric keys to input the value and press **Enter** to confirm the setting.
 - Use the arrow keys to adjust the value.
- The voltage and resistance limits can be changed by pressing **Shift + CV** when in CR mode. They have a maximum of 120V and 7500Ω.
- ① The DC load's internal resistance is roughly 20Ω

Step 6 — Constant Power Operation Mode (CP)



- You can set the constant power by one of the following ways:
 - Turn the navigation control to set the constant power.
 - Use numeric keys to input the value and press **Enter** to confirm the setting.
 - Use the arrow keys to adjust the value.
- The voltage and power limits can be changed by pressing **Shift + CV** when in CR mode. They have a maximum of 120V and 250W.

Step 7 — Additional Functions



- You can control the input of the electronic load by pressing **On/Off** on the front panel. If the **On/Off** key is lit up, the input is on, and the OFF indicator on the display will disappear. If the **On/Off** key is off, the **OFF** indicator on the display will appear.
- You can press **Shift + On/Off** to lock the keypad and the display. All keys with the exception of the **On/Off**, **Shift + 7** (Info), up and down arrow keys, and **Esc** will be disabled. Press **Shift + On/Off** again to unlock the DC load.
- The electronic load can also analog a short circuit. Press **Shift + 1** to switch to short circuit mode. The short circuit mode does not influence the existing settings. In the short circuit mode, the current value is determined by the operation mode and the current range.