

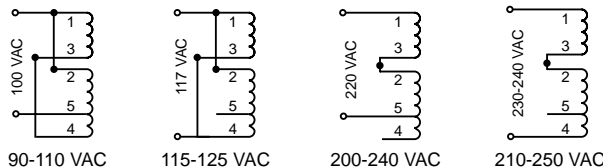
Linear DC Power Supplies: Operation and Application Notes

AC Input Wiring and Fusing

The universal transformer allows four input voltage ranges - 100/117/220/230-240 VAC $\pm 10\%$. All standard models are factory wired for 117V operation. Before operation at a specific line voltage, the proper input jumpers must be installed. Adequate input fusing is also recommended. For jumpering scheme and fusing requirements, refer to the unit ID label or the table below.

Input (VAC)	100	117	220	230-240
Jumper	1 - 2 3 - 4	1 - 2 3 - 4	2 - 3	2 - 3
Apply AC	1 - 5	1 - 4	1 - 5	1 - 4
Fuse	See unit ID label. Recommended 150% of output current			

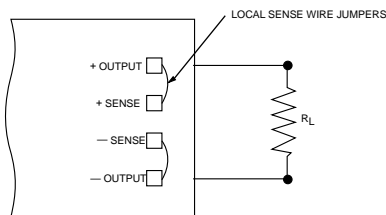
Jumpering Example: For operation at 117VAC, jumper 1-2 and 3-4; and apply AC input to 1 - 4.



DC OUTPUT WIRING

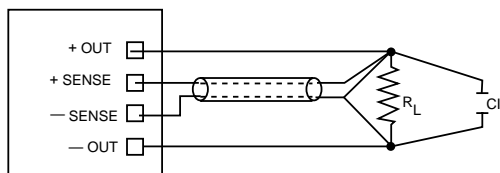
Local Sense

When load leads are not too long and remote regulation is not required, simply connect the load to the output terminals marked +Vo or +Out and -Vo or -Out. **Load leads must never be connected to the sense terminals.** Open sense lead protection is built-in and strapping the sense leads to the output leads is not needed, but is recommended.



Remote Sense

All models above 30 watts are provided with remote sense feature to compensate the load line drop and to permit a remote point of regulation. The figure below shows proper wiring for a power supply with remote sensing.

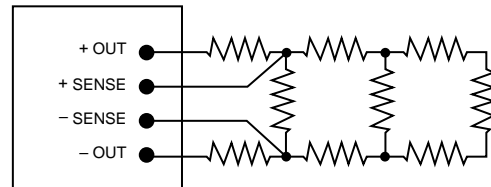


The remote sense can compensate a line drop of up to 0.25V. The load leads must be sized so that the line drop does not exceed 0.25V - the lesser the better. To provide noise immunity, it is recommended to use twisted pair or shielded pair for sense leads. A small AC decoupling capacitor (0.1 to 10 microfarad) across the sense terminals will also enhance the noise immunity. In some applications, the power supply output tends to oscillate due to the phase shift caused by the line resistance and inductance. The addition of capacitor C1 will reduce output impedance and provide stability. The recommended value of C1 is 100 microfarads per ampere or 50 microfarads per foot of lead wire.

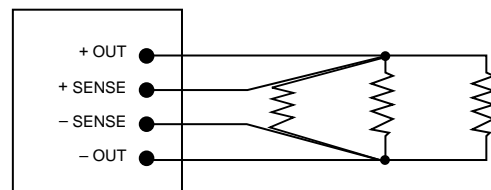
Grounding

The grounding, if not done right, can have a significant effect on the over all system performance. A single point grounding system should be employed, whenever possible, to eliminate ground loops and to improve regulation.

UNDESIRABLE



RECOMMENDED



Thermal Considerations

In normal operation the chassis gets hot due to the heat generated in the regulator. An unrestricted mounting area is recommended. Moving air is desirable in confined areas. The chassis may be mounted on other heat dissipating surfaces to improve cooling.

Overshooting Protection (OVP) Adjustment

The overshooting is fixed on +5V outputs and is factory set at $6.2 \pm 0.4V$. On all other outputs, a separate universal OVP module should be used. Single output units normally have their OVP adjusted at 1 to 2 volts or 10 to 20% (whichever is greater) above the nominal output voltage. For dual output units, the same criteria applies above the sum of the two voltages. Adjust OVP as follows:

- Adjust OVP adj. potentiometer fully clockwise
- Apply AC input voltage
- Adjust output voltage to the desired overshooting trip point
- Turn the OVP adj. potentiometer counterclockwise until output voltage is crowbarred to approximately 1 volt
- Switch the AC input off and adjust the output voltage down. Reapply AC input voltage and adjust the output up to verify the set point.

Overload Adjustment

The overload is factory set at 110 to 120% and should not require any adjustment. If this has been changed or require recalibration, it can be accomplished as follows:

- Adjust OL adj. potentiometer fully clockwise
- Apply AC input voltage
- Adjust output to the lowest voltage of the specified voltage range
- Adjust the load current to 110 to 120% of rated output current
- Slowly turn the OL adj. potentiometer counterclockwise until the voltage starts decreasing