

All UltraVolt high-voltage power supplies (HVPSs) can be paralleled for purposes of raising the total output power/current or for redundant power systems. In applications raising the output power, the goal is often to get two 4.5in, 30W units in the space of one 18in unit, to get 450W to 500W from a pair of 250W units, or to get 60W when only 30W units are available. In applications for redundant power, the goal is independent operation of the HVPSs and connecting them into the system so a single-point failure is tolerated.

1. Increasing Output Power/Current

When a user requires an output current in excess of the maximum rating, it is possible to connect two or more units in parallel. This is accomplished by connecting the following pins together:

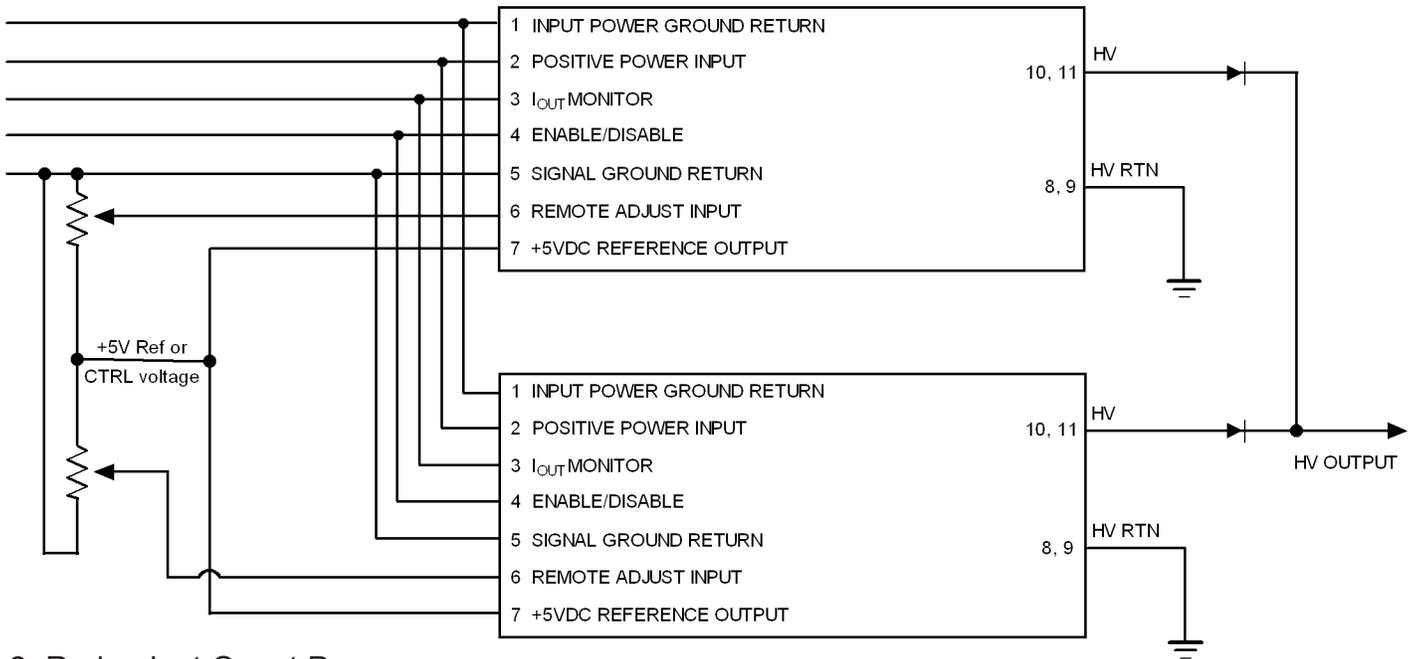
(“A” and “C” Series only)

Pin 1 to Pin 1	-	Input Power Ground Return
Pin 2 to Pin 2	-	Positive Power Input
Pin 3 to Pin 3	-	I_{out} Monitor
Pin 4 to Pin 4	-	Enable/Disable
Pin 5 to Pin 5	-	Signal Ground Return
Pin 7 to Pin 7	-	+5VDC Reference Output
Pins 8/9 to Pins 8/9	-	HV Ground Return
Pins 10/11 to Pins 10/11	-	HV Output

In applications requiring up to 85-90% of the total power/current capacity, a single control signal or control pot can be connected to both HVPSs, since trimming is not required.

In applications requiring 90-98% of the total output power/current capability, the trimming of the two supplies becomes more important. If a control signal is used, it should be connected to the top of the two trim pots. If no control signal is used, the two pots' high sides should be connected to the *+5VDC Reference Output* (pin 7) and the pots' low sides to the *Signal Ground Return* (pin 5). The adjustable pot wiper then becomes the source of remote-adjust voltage and is connected to pin 6 of each unit (see Fig. 1). Adjust each pot so the highest voltage used has less than a 1% error between the units' output voltages. This sets the units for proper current sharing.

Fig. 1 "A" and "C" Series only



2. Redundant Output Power

In cases where redundant output power is required, two or more units may be connected in parallel as described in section 1. However, there should be some additions to isolate the system even more effectively. The input power to each supply should have a fuse such as a slow-blow or PTC. The remote adjusts, enables, and +5V references should be used independently, joined through diodes or resistors. They should not be directly paralleled in a "true" redundant system.

Fig. 2 High Power "C" Series only

