

ARC-80: Large Power Supply

The large power supply converts input AC power that can range between 110 and 240 Volts and 50-60 Hz to the DC voltages required by the controller. It contains an input AC filtering circuit, eight switcher modules, and a filter circuit for reducing the ripple produced by the switcher modules. A push-button switch resets the DSP on the controller's timing board, dumping the application code and turning the analog power off at the power control board. The enclosure is made of machined aluminum sheets plated a gold color. It is normally connected to the controller housing via a shielded power cable 0.5 to 5 meters in length, with heavy metal circular connectors at each end. It supplies about twice the current as the small ARC-81 power supply, and does not include a shutter driving circuit.

The available voltages and corresponding pinouts for all the functions are as follows:

+5 V digital	10 Amps	pin A
+6.5 V analog	10 Amps	pin P
-6.5 V analog	10 Amps	pin 2
+16.5 V analog	2.5 Amps	pin J
-16.5 V analog	2.5 Amps	pin D
+12 V fan supply	3.0 Amps	pin s H, X
+36 Volt analog	1.0 Amps	pin M
DSP reset		pin f
Power supply grounds		many, see schematic

Size: 12.25 x 8.25 x 5.25 inches = 31.1 x 21.0 x 13.3 mm
Weight: 16 lbs = 7.2 kg.

There is a +12 volt fan inside the power supply, with inlet and outlet holes to allow good air circulation. The inlet holes have filters and filter holders. The filters should be cleaned or replaced when they get dirty so they don't inhibit good airflow.

Most of the switcher modules have small plastic potentiometers used for adjusting the output voltages. They are accessible once the panel with the long ventilation slot is removed. This can be useful if there are long cable runs to the controller, especially for those lines that have heavy current flows. Additionally, the Astec switcher modules have a remote sense capability that adjusts their output voltage within a volt or so to match the voltage sensed at the load, which is at the power control board. This accounts for many of the wires in the cable that appear to all go to ground.