9770 series power supplies, power connector kit, FR-7 chassis

The 9770 series power supplies are available with the following dc voltage ratings:

Unregulated, +and- 18v (9770-U)
Regulated, +and- 12v (9770R-12)
Regulated, +and-15v (9770R-15).

These three versions all use the same printed circuit board with some minor variations. A 12vac 1A wall-mount transformer is provided as the power source for each of the kits. The basic circuit is a voltage doubler so there are +18 and -18v outputs under 350mA each. This circuit is modified with voltage regulators for 12v regulated outputs at about 300mA each or for 15v at about 80mA each.

There are six, four-circuit power connection points (+)(G)(SG)(-) on the boards where power cables can be wired or 0.1" spacing headers used for connection. The G circuit is the circuit-common/ground for the power supply filter circuits, LED circuits etc, and the SG is the audio or signal ground.

There are the parts available from Mouser for making power supply connector cables. These cable items are included in the FracRak accessory modules for the 9710, 9720 and 9730 modules with instructions for the assemblies in the kit manuals.

Four Pin Header

http://www.mouser.com/search/refine.aspx?Ntt=538-22-23-2041%09

Four Pin Terminal Housing

http://www.mouser.com/search/refine.aspx?Ntt=538-22-01-3047

Terminals

http://www.mouser.com/search/refine.aspx?Ntt=538-08-50-0114

The power supply kits can mount in a FracRak and not occupy any of the ten single spaces using a power wing panel, FR-PWP. Links for this and it fitted to a FR-7 FracRak are copied below:

FR-PWP

http://www.paia.com/proddetail.asp?prod=FR%2DPWP&cat=44 <http://www.paia.com/proddetail.asp?prod=FR%2DPWP&cat=44>

FR-7 (shown with options for FR-PWP and a 9770 series supply mounted inside)

http://www.paia.com/proddetail.asp?prod=FR%2D7

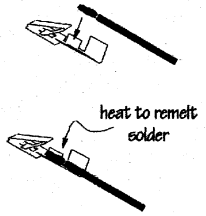
POWER CABLE AND CONNECTOR

If you have the 9710frm accessory kit, locate the power connector housing and pins. You will be connecting wires to the pins and will need to be able to hold the pin steady while soldering. Using an old-fashioned wooden clothes pin as a vise is a good choice, but try to find one these days. A pair of needle-nose pliers with a rubber band around the handle to hold the jaws closed works but too heavy a rubber band can apply too much pressure and crush the pin.

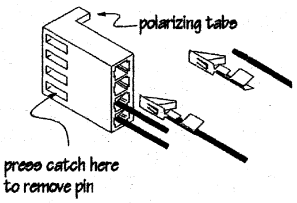
Proceed with assembly of the power connector as follows:

( ) Prepare the four 16" lengths of stranded insulated wire supplied with the 9710frm kit by stripping 1/4" of insulation from one end of each wire only. Twist and tin the exposed wire strands then clip off the tinned end so that a 1/8" stub remains.

( ) Solder one of the power connector pins to the end of each wire. Steady the pin as discussed above and lay the tinned end of the wire in the "trough" of the pin as shown in the illustration. Solder the connection by holding the soldering iron against the wire and pin until the solder remelts. You should not need to add more solder. Allow the joint to cool and test it by wiggling the wire to make sure the joint is firm. Do not wrap the "wings" of the pin around the wire.

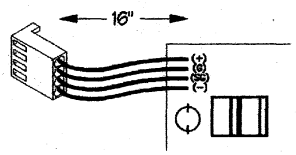


( ) Slide the power pins into the connector body. Note the orientation of the pin as shown in the illustration. Slide the pin in until the catch on the back of the pin engages the slot in the connector body and you feel the "snap" as it locks in place. Give the wire another good tug to test the solder joint and that the pin is latched in place.



If the wire comes loose, don't panic. The pins can be released from the connector by using a knife blade or small tool to reach through the slots in the connector body to press down the catch.

( ) Prepare the free ends of the wires by stripping 1/4" of insulation from the end and twisting the exposed wire strands tightly. Do not tin these wires. Push each wire though the "+", "G", "SG" and "-" holes in the board as shown in the illustration (note the polarizing tabs on the connector body) and check to make sure there are no stray wire strands before soldering in place. Clip off any excess on the solder side of the board.



Use the 3 nylon wire ties to group the four wires together by placing one in the middle and the other two halfway to either end. Cinch the ties tight and clip off the excess.

( ) Turn the control shafts of all the potentiometers fully Counter ClockWise and mount each knob in turn by placing it on the shaft and aligning the pointer with CCW end of the panel graphic. Tighten the set screw slightly and rotate the control back and forth to see that its range of rotation is centered with respect to the panel graphic. Loosen the screw and realign the knob as needed and fully tighten when done.

Locate the power connector header. If there is an unused connector location on the power supply, this is the best place to mount the header. Because of the 9700 series star grounding system it is also acceptable to chain power from one module to the next as shown in the illustration. ***Be very careful that the Signal Ground (SG) and power Ground (G) lines are not interchanged between modules.*** Note the orientation of the locking tab shown in the illustrations.

( ) Push the header's 4 pins through the board but solder only one. Make sure the base is flush with the board before soldering the remaining three pins.