

Powering the 9700K MIDI2CV8

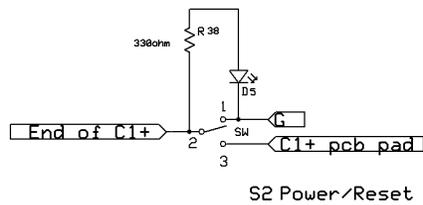
A 12vac wall-mount transformer is the normal power source. It wires through the power-on/reset switch and is used for the on-board +5v, and dual polarity +and- 12vdc power supplies. It is important to match the transformer current (mA or A) rating to the application for the 9700K. As a stand-alone unit the minimum current rating of the transformer should be 300mA. As a P9700S system module in which the other modules tap power at the four-circuit connector/wiring points at the pcb rear, the minimum current rating should be 1000mA (1A) so the voltage available at the tap is at about +and- 16vdc. This higher power transformer can be used with a stand-alone 9700K, but in this instance the resistors at R51 and R52 which link the 9700K analog circuits to the tap, should be substituted with 330ohm resistors to keep the resulting dc voltages at about 12v.

Regulated, Dual Polarity 12-15vdc Supplies may be used to power the 9700K instead of the wall-mount transformer; however, it should be considered that the current required on the positive dc supply will be significantly higher than on the negative dc supply (about +150mA and -30mA) since the onboard +5v supply used for the uC, EPROM firmware, etc. is obtained from the V+ circuit. If you have an external dc supply that also has a +5v output, the 7805 voltage regulator can be removed and this supply connected at the regulator output (pin 3) point and this will lower the V+ current requirement to about 30mA. Also, for external dc operation, the panel-mounted, dual-function Power/Reset switch which normally operates the wall-mount ac needs a modification to its wiring so it retains a reset function and the attached power indication LED shines when the board is powered. Since it is the power-on condition that works to reset the 9700K, and a reset must occur for a 'read' of the mode and channel select DIP switch sections, it is important the external dc voltages have a fast rise time so a sufficient reset pulse occurs. The following changes to the existing panel switch enable a manual reset. Otherwise, the external supply may be referenced for power-on indication and the power-on reset function and the panel switch/LED circuits may be omitted.

An external dc supply is connected or wired at the four-circuit dc power supply points at the rear edge of the board, V-, G, SG, and V+. If the external supply does not have separate power and signal ground circuits, then connect the 0v/ground/circuit-common of the external supply to either of the G or SG points and leave the other vacant (they tie together at a single point on the 9700K).

To modify the 12vac power switch so it both a) operates voltage to the reset circuit, retaining the panel-operated reset function, and b) lights the panel LED with voltage from the external dc power source, substitute a 330ohm for the 4700ohm LED resistor and wire the assembly as follows:

- () Free the plus end of the capacitor C1 from the board. Wires will connect to this lead and to the board where it had been attached. Connect and solder the former C1 point on the board to terminal 3 of the switch.
- () Connect both a 330ohm resistor and a wire to reach the free plus end of C1 to terminal 2 of the switch and solder the terminal. Solder the wire to C1 and insulate this joint.
- () Connect both the cathode (flat) leg of the LED and a wire to reach wiring point G to terminal 1 of the switch and solder the terminal. Solder the wire to point G.
- () Complete the operation by joining the 330ohm and LED anode and soldering this link.



Reference 9700K assy. manual figs. 1b and 5.

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| 9700K Power/Resetswitch mod | | |
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A recent update (about 08/2008) to the MIDI2CV8 circuit is to detach pin 7 of IC13 from the negative dc supply and jumper this over to ground at pin 8. Then it is much less likely that this part will run warm to hot when the dc supplies are a bit higher than normal. We have been modifying the boards by cutting the circuit trace to pin 7 and using some thin bare wire to link pins 7 and 8. You may make this change, but do be sure the negative circuit has been opened before joining pins 7 and 8. --sl

