

ARIES System 300 Music Synthesizer  
Module AR 326  
Output and Power Assembly Instructions

The previous pages were written as a general guide, to familiarize the builder with the components. Here, now, are the specific assembly instructions for building your Output and Power module. It is recommended that you do the following before you proceed:

Find a place where you can work through completion, without disturbing your set-up.  
Use adequate lighting.  
Wash your hands before starting. This removes contaminating oils and perspiration and makes assembly more comfortable.  
As you proceed, check off each step with a pencil.

**NOTE!**

The AR 326 Output and Power Module is slightly different in construction from the other ARIES modules. Instead of a frame and regular sized circuit board, two smaller circuit boards and a terminal strip will be mounted on the inside right hand panel of the synthesizer case. PLEASE FOLLOW INSTRUCTIONS CAREFULLY.

- ( ) 1. Preparation  
Unpack the parts carefully and place in a large box or tray so they won't get lost.

Find the two circuit boards and lay one aside. Assemble one board completely before you begin assembly of the other one.

Lay the circuit board down on a sheet of white paper. PLACE METAL SIDE DOWN! Turn board so that wire terminals are to the left.

Lay the assembly drawing down near the board.

Have the following tools nearby:

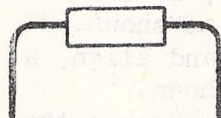
Pencil tip soldering iron, hot and tinned (solder coated)  
Solder--Use only thin rosin core solder!  
Small diagonal wire cutters  
Small wire strippers  
Small long nose pliers  
Regular pliers  
Flat blade screw driver

- ( ) 2. Resistors  
Carefully install all 10 resistors on the circuit board. (R1 through R10)

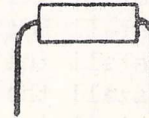
To avoid breaking the resistors leads, bend the leads at least 1/16 of an inch away from the body of the resistor.

For example:

Correct



Incorrect



- ( ) 3. Capacitors  
Install all three capacitors on the circuit board. (C1 through C3)
- ( ) 4. Diodes  
Install all four diodes on the circuit board. (D1 through D4)  
Be careful to observe correct polarity as indicated on the assembly drawing.
- ( ) 5. Transistors  
Carefully install all three transistors. (Q1 through Q3) Double check to insure proper installation.
- ( ) 6. Integrated Circuit Amplifier  
Install the Integrated Circuit Amplifier on the circuit board.
- ( ) 7. Terminal Connections  
Solder an 8 inch piece of wire to each of the seven terminals on the circuit board. Wires are indicated by arrows on the assembly drawing.

Assemble both circuit boards before proceeding.

#### BOARD AND TERMINAL MOUNTING INSTRUCTIONS --

Please refer to module assembly drawing. (page 4)

**Also--please see note on bottom of page 3 \*\*\***

- ( ) 1. Unpack the bag of hardware & front panel.
- ( ) 2. Take the terminal strip and attach R11 between pins 1 and 2, and R12 between pins 4 and 5 as shown on the module assembly drawing.  
Also install R13 and R14, as shown at upper right corner of module assembly drawing.
- ( ) 3. With the wood screw provided, mount the terminal strip to the inside right hand panel of the synthesizer case in the approximate center of the panel.
- ( ) 4. Run insulated wires from pins 1, 3, and 5, of the terminal strip to the appropriate power supply connections on the edge connector, pins A, M, and Z, as shown on the module assembly drawing.
- ( ) 5. Using four small wood screws and four 1/4 inch stand off washers, mount a circuit board to the side panel about one inch from the top and two inches from the front edge of the case.
- ( ) 6. Mount the other circuit board about 1/2 inch below the top one.
- ( ) 7. Connect the power supply wires from each board to the appropriate pins on the terminal strip.

The terminal strip and boards are now mounted. Unconnected wires will later be wired to the front panel.

#### FRONT PANEL ASSEMBLY INSTRUCTIONS --

Refer to panel wiring diagram and module assembly drawing. (page 5)

- ( ) 1. Take two 100K log potentiometers and bend the tabs, if any, out flat. Insert the shafts through the panel from behind. Align as shown on the wiring diagram and secure with the nuts. **BE CAREFUL NOT TO SCRATCH THE PANEL**
- ( ) 2. Install all 14 mini-phone jacks, as shown.
- ( ) 3. Install both RCA output jacks, as shown.
- ( ) 4. Install the stereo output jack and align, as shown.
- ( ) 5. Install the ON/OFF switch, as shown.
- ( ) 6. Install the pilot light. Insert through the front panel and flat retaining clamp. Slide the clamp up the shaft of the light to the front panel until the light is securely held in place.

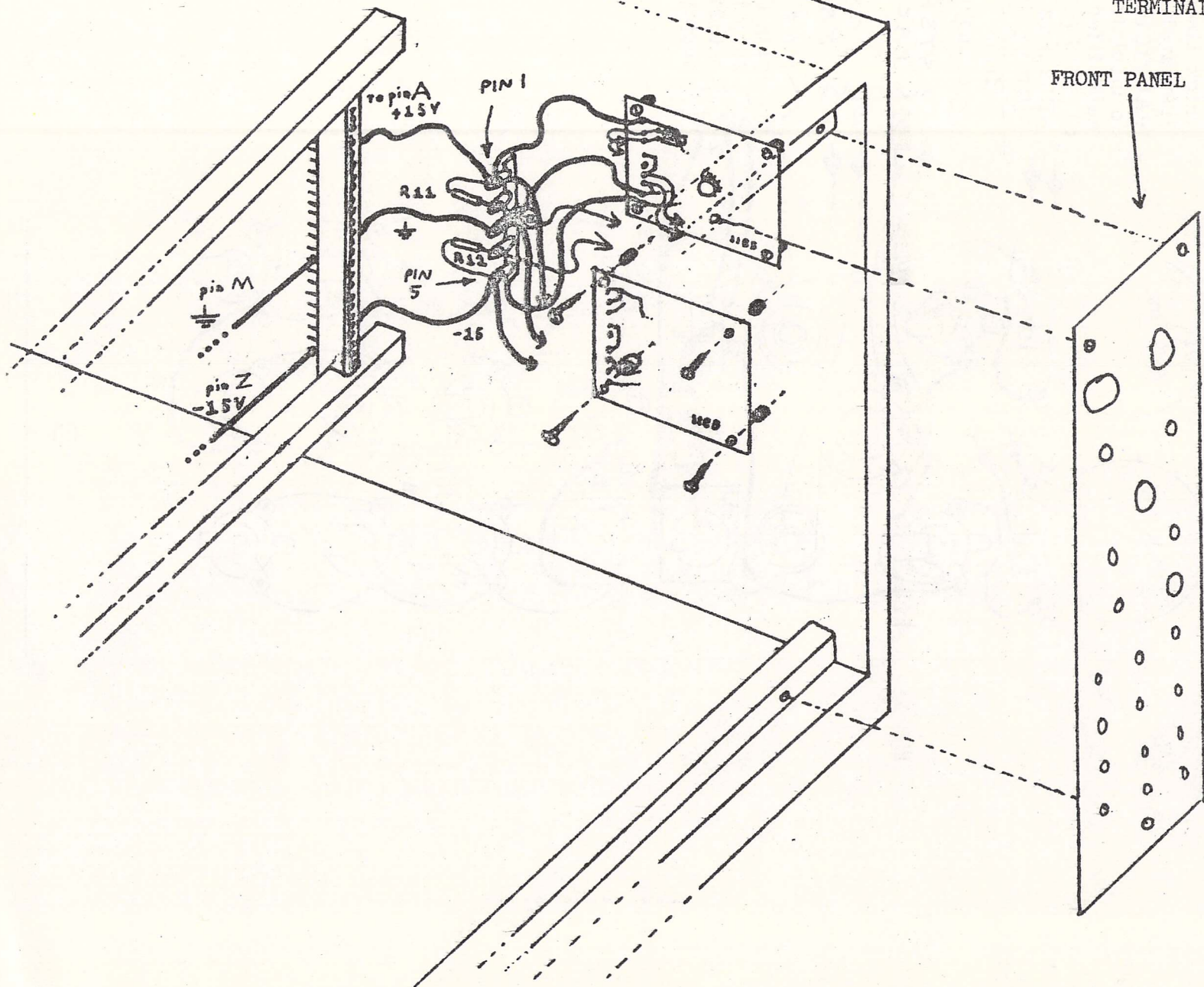
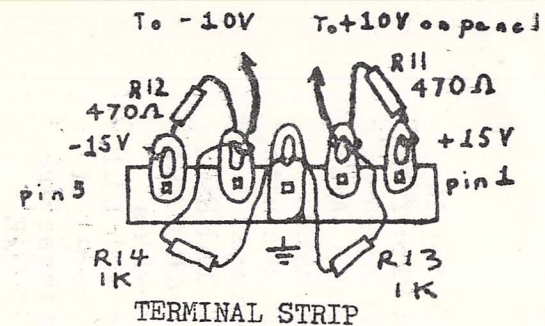
- ( ) 7. Run a wire connecting the tips of each set of four jacks labelled PATCH as shown.
- ( ) 8. Run a wire connecting the grounds of all 14 mini-phone jacks, both RCA output jacks, the stereo output jack and pin 1 of P1 (channel 1), as shown.
- ( ) 9. Cut three pieces of INSULATED 18 GAUGE hookup wire, two pieces 12" long, the third 7 1/2" long. Strip 1/4" of insulation from each end of each wire.
- ( ) 10. Connect one 12" piece between pin 1 of S1 and pin 2 of P1. (P1 is the four pin plug supplied as part of the AR322 Power Supply.)
- ( ) 11. Connect the other 12" piece between pin 2 of S1 and pin 4 of P1.
- ( ) 12. Using solder, splice the 7 1/2" piece of wire so as to extend one of the two leads of the pilot lamp PL1. Carefully insulate the splice with electrical tape.
- ( ) 13. Clip the other pilot lamp lead leaving 1" of wire. Strip 1/4" of insulation from the end. Shorten the two leads of R15 to 3/8". Using solder, splice the shortened pilot lamp lead to one end of the resistor and insulate the splice carefully with electrical tape. Solder the other end of R15 to pin 2 of S1.
- ( ) 14. Using electrical tape, insulate the connections at S1. REMEMBER: THESE CONNECTIONS WILL BE AT LINE VOLTAGE!  
Bundle the three wires leading to P1 into a single cable.
- ( ) 13. Run wires from the +10V and -10V terminals on the terminal strip (pins 2 and 4) to the appropriate jacks on the front panel, as labelled on the panel wiring diagram.
- ( ) 14. Wire the remaining wires on the circuit boards to the appropriate points on the front panel. Wire one circuit board at a time to avoid confusion.
- ( ) 15. Plug the Jones plug into the receptacle on the power supply.
- ( ) 16. With the screws supplied, Mount the front panel to the synthesizer case.

YOUR AR 326 OUTPUT AND POWER MODULE IS NOW READY TO USE.

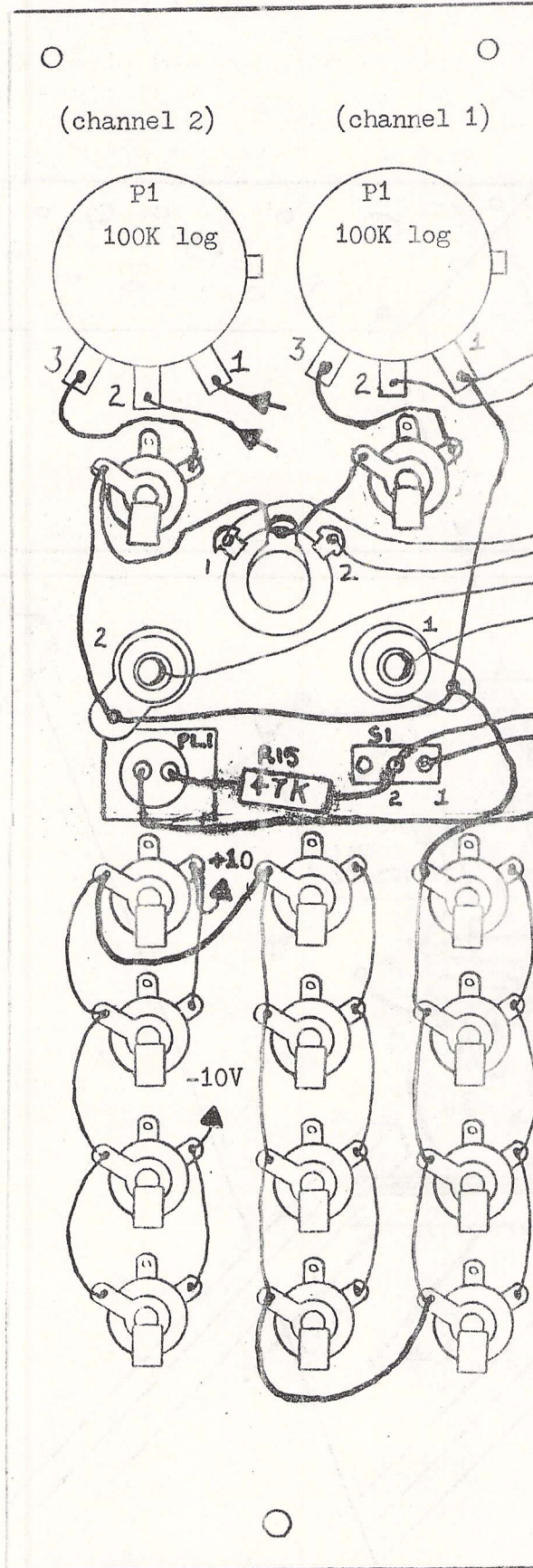
\*\*\* A note about connecting the 5 volt supply:

You will notice that the parts list calls for a 6-point solder terminal, whereas the instructions (on page 2) and the diagram (page 4) only refer to a 5-point terminal. The extra terminal point can be used for the +5v supply to allow for modules of your own design which require +5v. Use pin "N" (the one BELOW ground pin "M") on the edge connector if you wish to bus the 5v as in instruction 4 of the Board & Terminal Mounting Instructions (page 2).

AR 326 MODULE ASSEMBLY DRAWING



AR 326 OUTPUT AND POWER MODULE PANEL WIRING DIAGRAM --- rear view



Arrows pointing in indicate a wire from the circuit board or terminal strip. All wires with arrows and ground bus with thick lines must be insulated. TAKE PARTICULAR CARE to insulate wires associated with PL1, S1, R15 (and P1 of AR322) as these are HIGH VOLTAGE.

from  
 ↙ channel # (board #)

1 } STEREO PHONE  
 2 } JACK

2 } RCA OUTPUT  
 1 } JACK

↙ pin # on 4-pin  
 plug (P1 as  
 supplied with  
 AR322 Power  
 supply.