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SINCE 1975

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INSTRUCTIONS

MODEL AVB2-C-NASA2A-R5 MONOCYCLE GENERATOR

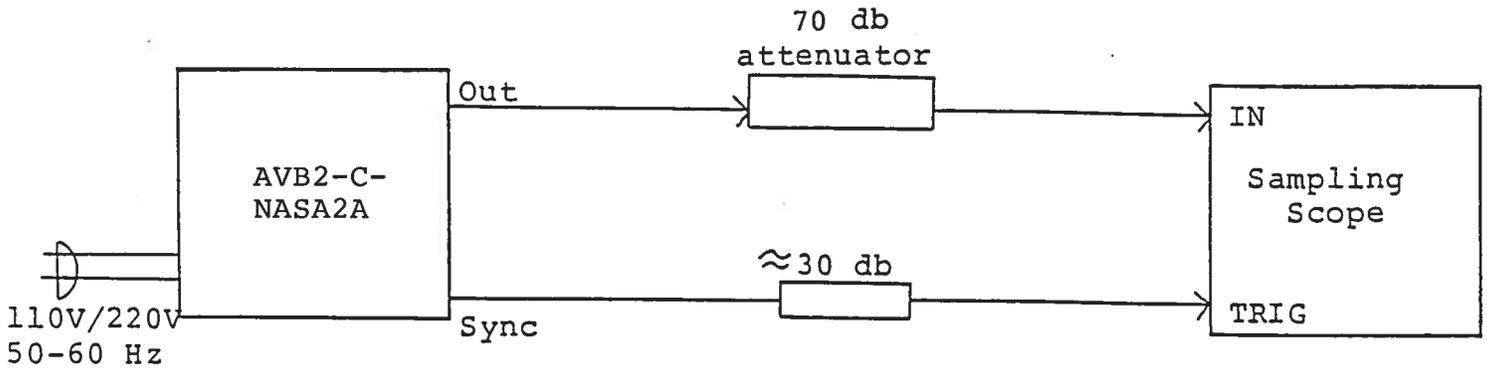
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WARRANTY

Avtech Electrosystems Ltd. warrants products of its manufacture to be free from defects in material and workmanship under conditions of normal use. If, within one year after delivery to the original owner, and after prepaid return by the original owner, this Avtech product is found to be defective, Avtech shall at its option repair or replace said defective item. This warranty does not apply to units which have been disassembled, modified or subjected to conditions exceeding the applicable specifications or ratings. This warranty is the extent of the obligation or liability assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

Fig. 1

PULSE GENERATOR TEST ARRANGEMENT



Notes:

- 1) The bandwidth capability of components and instruments used to display the pulse generator output signal (attenuators, cables, connectors, etc.) should exceed one gigahertz.
- 2) The use of 70 dB attenuator at the sampling scope vertical input channel will insure a peak input signal to the sampling scope of less than one Volt.
- 3) The sync output channel provides TTL level signals. To avoid overdriving the TRIG input channel of some sampling scopes, a 30 dB attenuator should be placed at the input to the sampling scope trigger channel.
- 4) To obtain a stable output display the PRF control on the front panel should be set mid-range while the PRF range switch may be in either range. The front panel TRIG toggle switch should be in the INT position. The front panel DELAY controls and the scope triggering controls are then adjusted to obtain a stable output. The scope may then be used to set the desired PRF by rotating the PRF control and by means of the PRF range switch.
- 5) MONITOR Output. The front panel monitor output provides an attenuated replica (40 dB down) of the output. The monitor output is designed to operate into a 50 Ohm load.
- 6) The output frequency is controlled by the PULSE WIDTH P PULSE WIDTH N and TPN one turn controls. To establish the desired operating frequency the following sequence is recommended:
 - a) Set TPN max clockwise.
 - b) Adjust PULSE WIDTH N control to attain desired pulse width for the negative-going swing (see Fig. 2).
 - c) Adjust PULSE WIDTH P control to attain desired pulse width for positive-going swing (see Fig. 2).
 - d) Rotate TPN counter-clockwise to reduce TPN to zero.
 - e) Some final iterative adjustments of the three controls may be necessary to fine-tune the output frequency.

- 7) The output amplitude is variable from 0 to 700 Volts with the HIGH-LOW switch in the LOW position and from 100 to 800 Volts with the HIGH-LOW switch in the HIGH position. Note that the spurious level may rise as the amplitude is decreased and so it may be necessary to use an external attenuator for low output amplitudes.
- 8) Note that the instrument requires a warm-up period of about 5 minutes before the PWP, PWN and TPN controls fully stabilize. Note also that at turn-on the negative pulse may not initially appear but will appear and stabilize during the warm-up period.
- 9) AVB2-C-NASA units with a serial number higher than 5600 are protected by an automatic overload protective circuit which controls the front panel overload light. If the unit is overloaded (by operating at an exceedingly high duty cycle or by operating into a short circuit), the protective circuit will turn the output of the instrument OFF and turn the indicator light ON. The light will stay ON (i.e. output OFF) for about 5 seconds after which the instrument will attempt to turn ON (i.e. light OFF) for about 1 second. If the overload condition persists, the instrument will turn OFF again (i.e. light ON) for another 5 seconds. If the overload condition has been removed, the instrument will turn on and resume normal operation. Overload conditions may be removed by:
 - 1) Reducing PRF (i.e. switch to a lower range)
 - 2) Reducing pulse width (i.e. switch to a lower range)
 - 3) Removing output load short circuit (if any)
- 10) The unit can be converted from 120 to 240V 50-60 Hz operation by adjusting the voltage selector card in the rear panel fused voltage selector-cable connector assembly.
- 11) For additional information:
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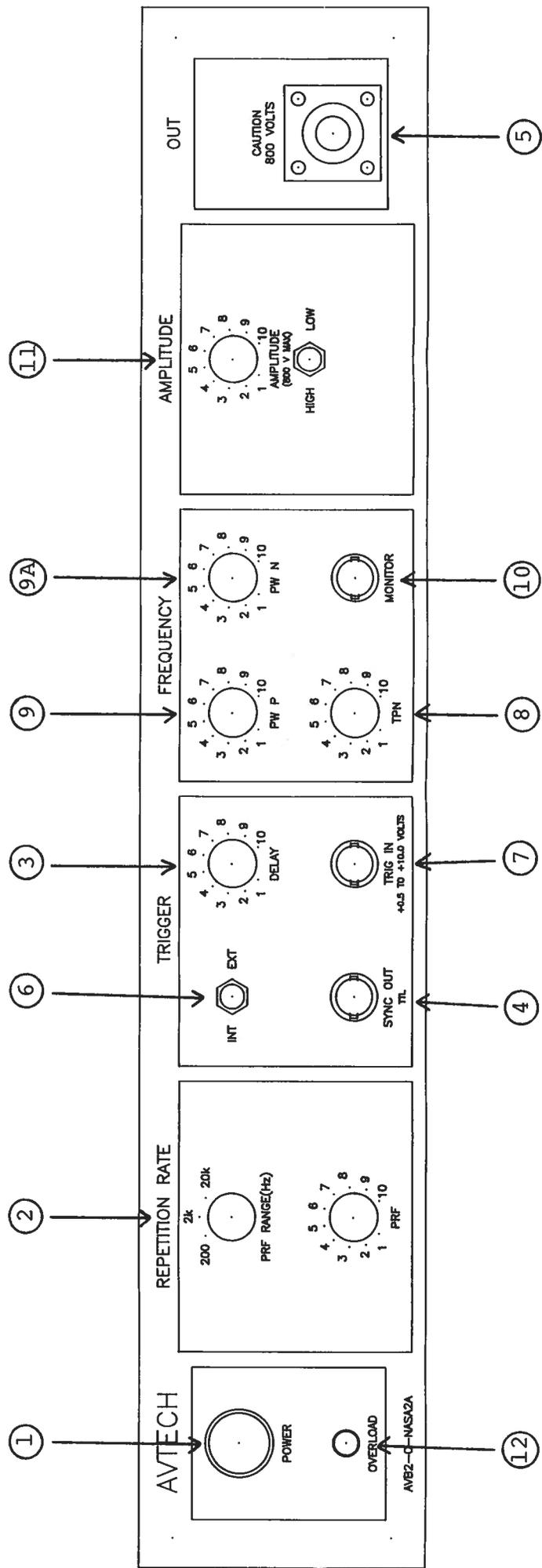


Fig. 2 FRONT PANEL CONTROLS

- (1) ON-OFF Switch. Applies basic prime power to all stages.
- (2) PRF Control. The PRF RANGE and PRF controls determine output PRF as follows:

	PRF MIN	PRF MAX
Range 1	20 Hz	200 Hz
Range 2	200 Hz	2 kHz
Range 3	2.0 kHz	20 kHz

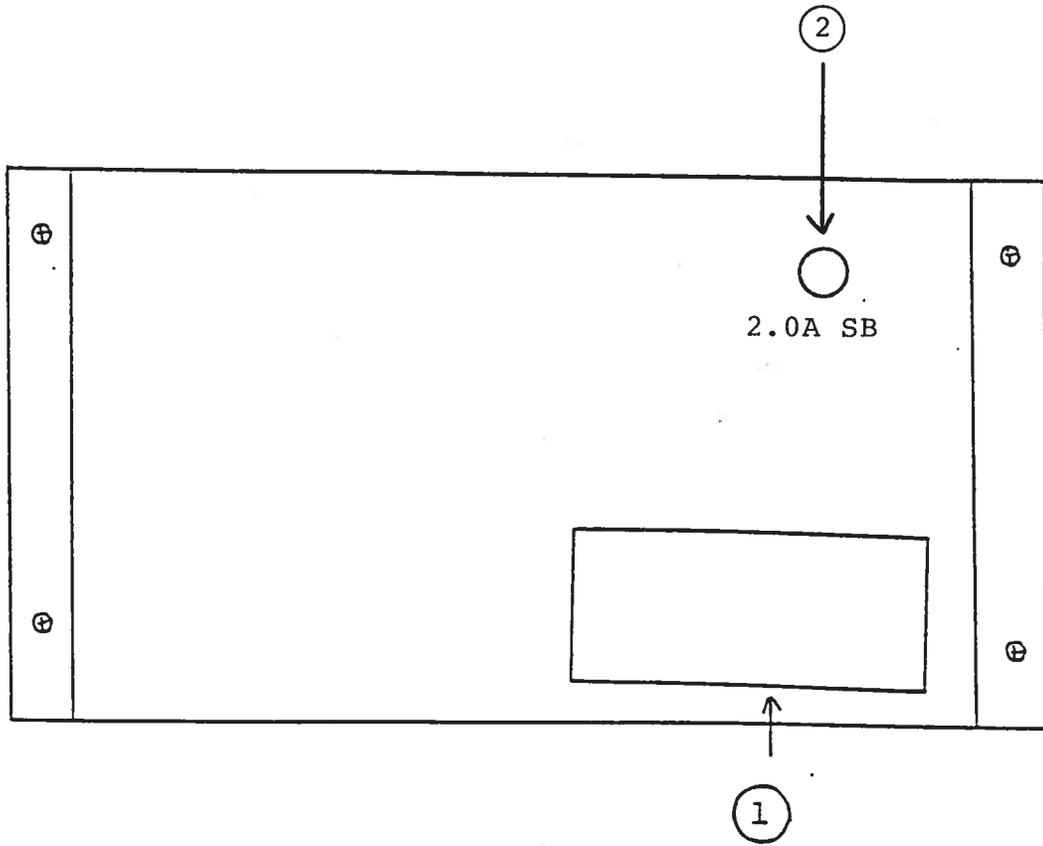
- (3) DELAY Controls. Controls the relative delay between the reference output pulse provided at the SYNC output (6) and the main output (5). This delay is variable over the range of 0 to at least 500 ns.
- (4) SYNC Output. This output precedes the main output (5) and is used to trigger the sampling scope time base. The output is a TTL level 100 ns (approx) pulse capable of driving a fifty Ohm load.
- (5) OUT. TYPE N connector applies output to 50 Ohm load.
- (6) EXT-INT Control. With this toggle switch in the INT position, the PRF of the AVB2 unit is controlled via an internal clock which in turn is controlled by the PRF controls. With the toggle switch in the EXT position, the AVB2 unit requires a 50 ns to 1.0 us +0.5 to +10 Volt pulse applied at the TRIG input in order to trigger the output stages. In addition, in this mode, the scope time base must be triggered by the external trigger source.
- (7) TRIG Input. The external trigger signal (+0.5 to +10.0V, PW \geq 50 ns) is applied at this point when the EXT-INT toggle switch is in the EXT position.
- (8) TPN. One turn pot controls time separation between positive and negative voltage swing.
- (9) PULSE WIDTH P, N. Controls width of positive-going voltage swing and the negative-going voltage swing.
- (9A)
- (10) MONITOR OUT. BNC connector provides attenuated (x100) coincident replica of output (to 50 Ohms).
- (11) AMP. Varies output amplitude to 50 Ohm load (LOW: 0 to 700 Volts; HIGH: 100 to 800 Volts).

(12) AVB2-C-NASA units with a serial number higher than 5600 are protected by an automatic overload protective circuit which controls the front panel overload light. If the unit is overloaded (by operating at an exceedingly high duty cycle or by operating into a short circuit), the protective circuit will turn the output of the instrument OFF and turn the indicator light ON. The light will stay ON (i.e. output OFF) for about 5 seconds after which the instrument will attempt to turn ON (i.e. light OFF) for about 1 second. If the overload condition persists, the instrument will turn OFF again (i.e. light ON) for another 5 seconds. If the overload condition has been removed, the instrument will turn on and resume normal operation. Overload conditions may be removed by:

- 1) Reducing PRF (i.e. switch to a lower range)
- 2) Reducing pulse width (i.e. switch to a lower range)
- 3) Removing output load short circuit (if any)

Fig. 4

BACK PANEL CONTROLS

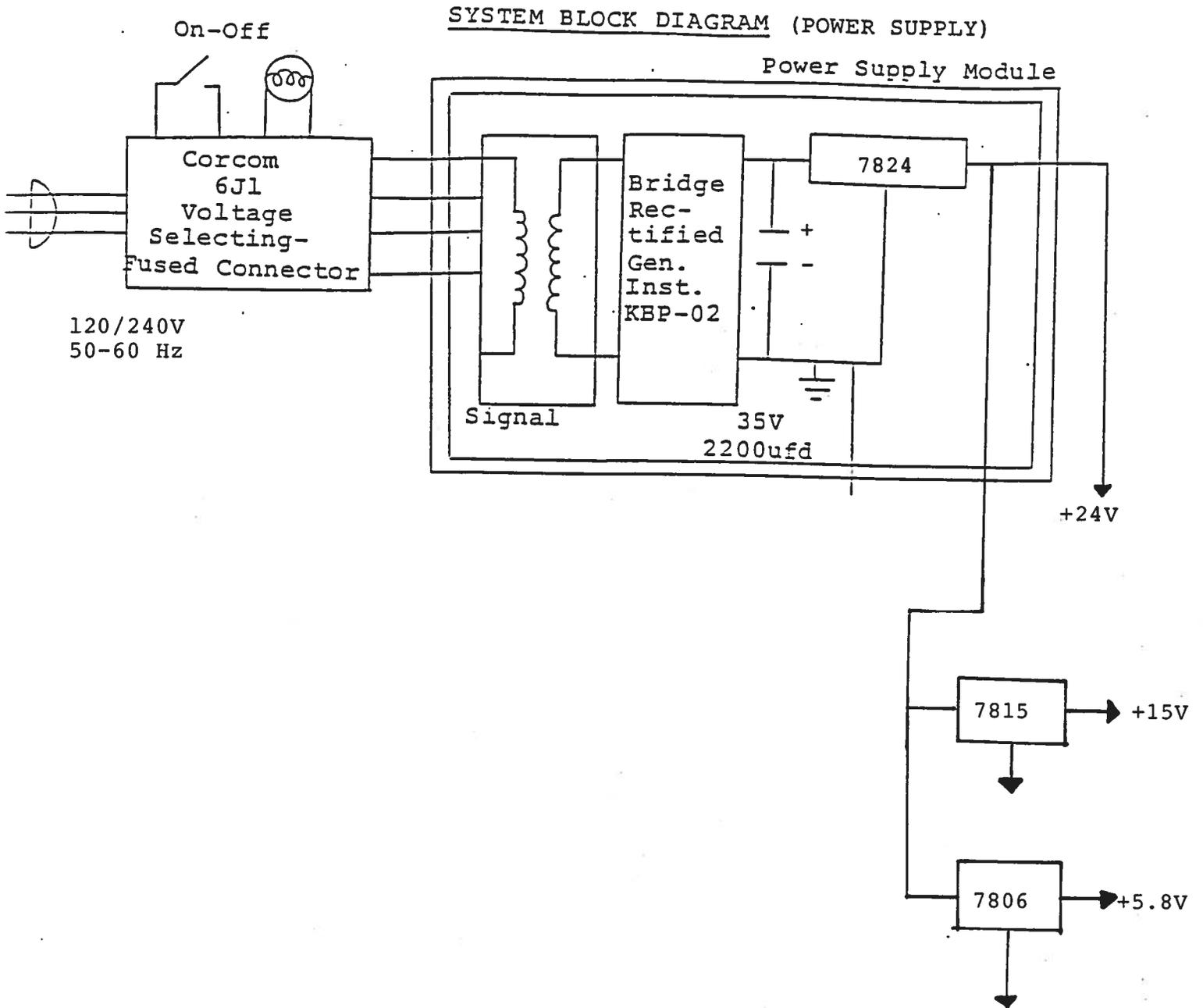


- (1) FUSED CONNECTOR, VOLTAGE SELECTOR. The detachable power cord is connected at this point. In addition, the removable cord is adjusted to select the desired input operating voltage. The unit also contains the main power fuse (0.5 A SB).
- (2) 2.0A SB. Fuse which protects the output stage if the output duty cycle rating is exceeded.

TOP COVER REMOVAL AND RACK MOUNTING

- 1) The interior of the instrument may be accessed by removing the four Phillips screws on the top panel. With the four screws removed, the top cover may be slid back (and off).
- 2) The -R5 rack mount kit may be installed after first removing the one Phillips screw on the side panel adjacent to the front handle.

Fig. 5



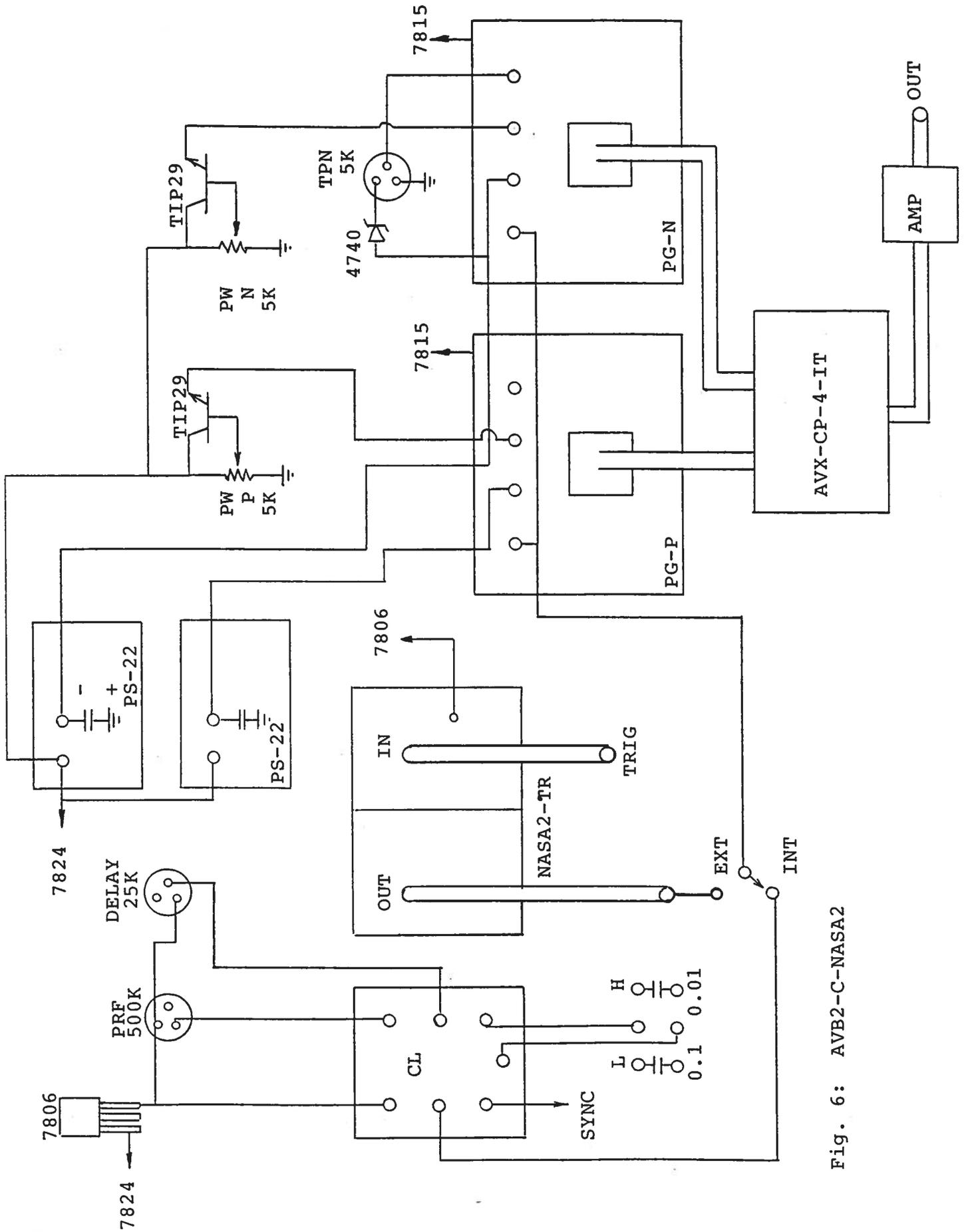


Fig. 6: AVB2-C-NASA2

Jan. 4/95

-M

Disk: AVA, AVB

Name: B2CNASA2