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INSTRUCTIONS

MODEL AVI-C-PN-OT-TRLA PULSE GENERATOR

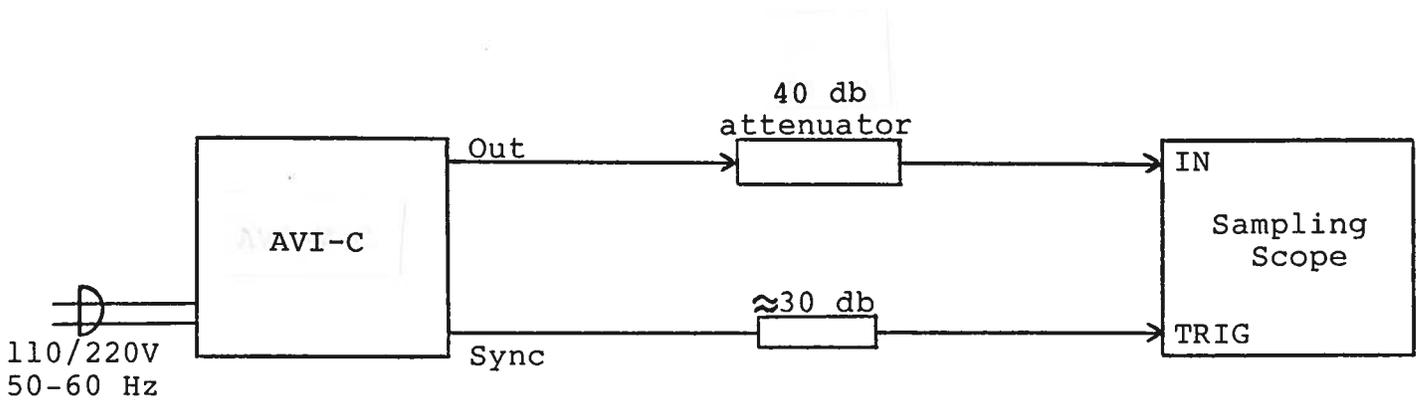
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WARRANTY

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

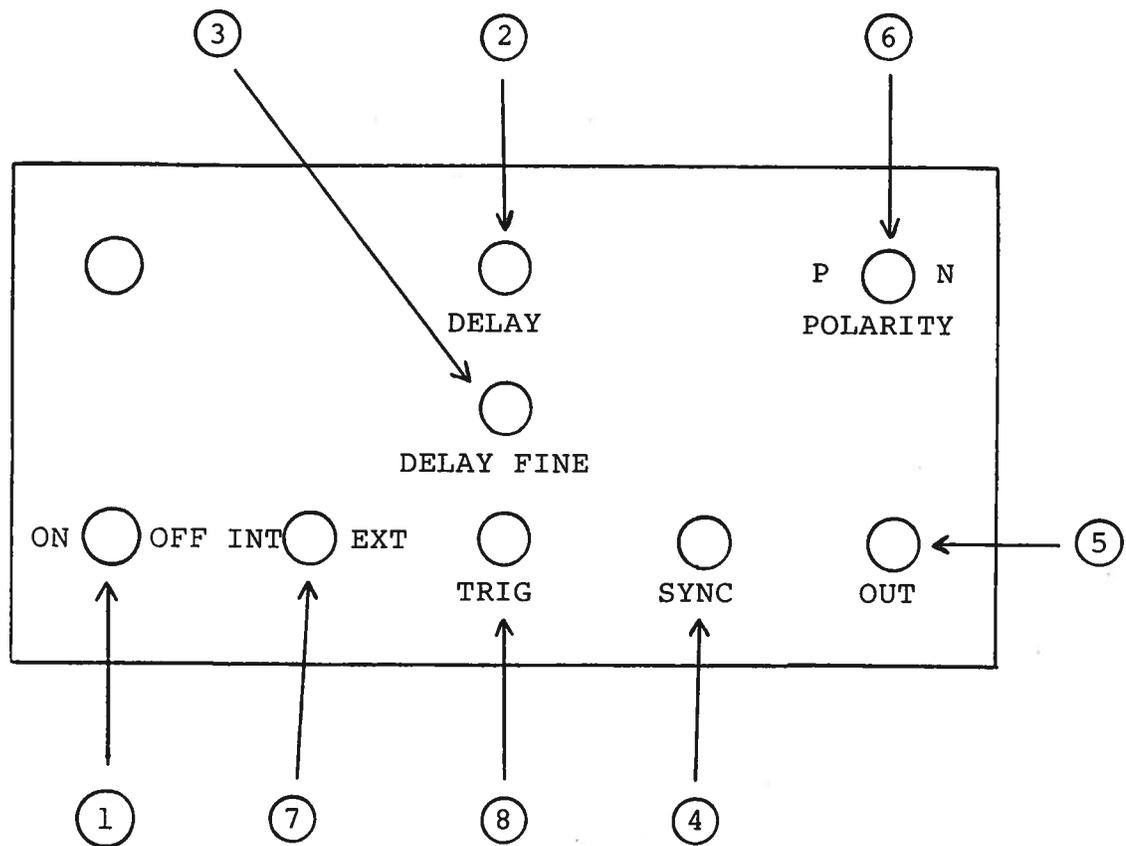


Notes:

- 1) The bandwidth capability of components and instruments used to display the pulse generator output signal (attenuators, cables, connectors, etc.) should exceed five gigahertz.
- 2) The use of 40 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 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.
- 5) The output polarity is controlled by the front panel polarity switch.
- 6) An external clock may be used to control the output PRF of the AVI unit by setting the front panel TRIG toggle switch in the EXT position and applying a 0.2 usec (approx.) TTL level pulse to the TRIG connector input. For operation in this mode, the scope time base must also be triggered by the external clock rather than from the SYNC output. The propagation delay time in the externally triggered mode is about 300 nsec.

Fig. 2

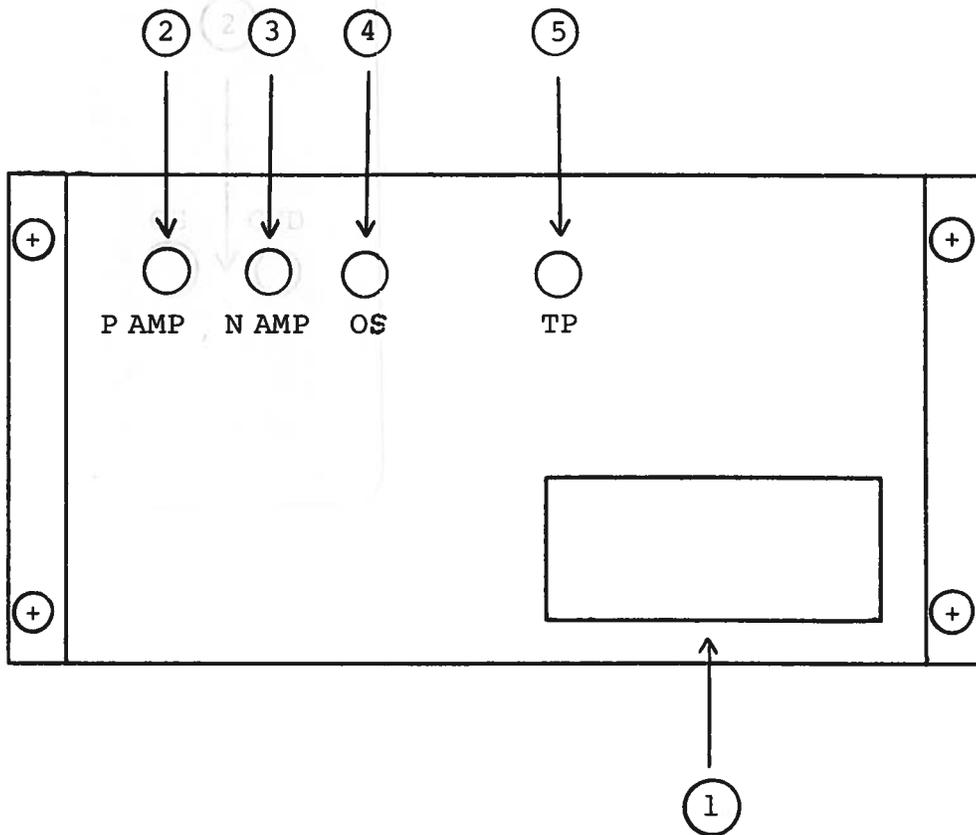
FRONT PANEL CONTROLS



- (1) ON-OFF Switch. Applies basic prime power to all stages.
- (2) DELAY Control. Controls the relative delay between the reference output pulse provided at the SYNC output (4) the main output (5). This delay is variable over the range of 0 to at least 500 nsec.
- (3) DELAY FINE Control. This control varies DELAY but is about 10 times less sensitive than the main DELAY control.
- (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 nsec (approx.) pulse capable of driving a fifty ohm load.
- (5) OUT Connector. SMA connector provides output to a fifty ohm load.
- (6) POLARITY. Two position switch controls polarity of output pulse.
- (7) EXT-INT Control. With this toggle switch in the INT position, the PRF of the AVI unit is controlled via an internal clock set at 10 KHz. With the toggle switch in the EXT position, the AVI unit requires a 0.2 usec TTL level 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.
- (8) TRIG Input. The external trigger signal is applied at this input when the EXT-INT toggle switch is in the EXT position.

Fig. 3

BACK PANEL CONTROLS

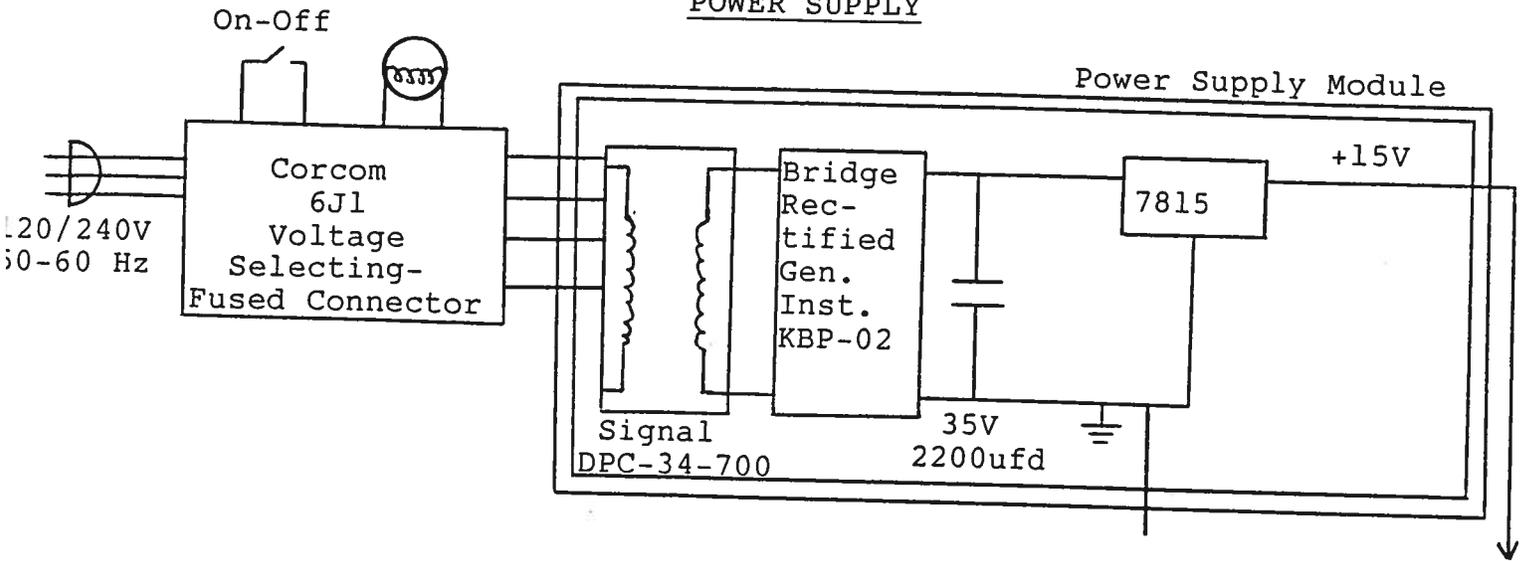


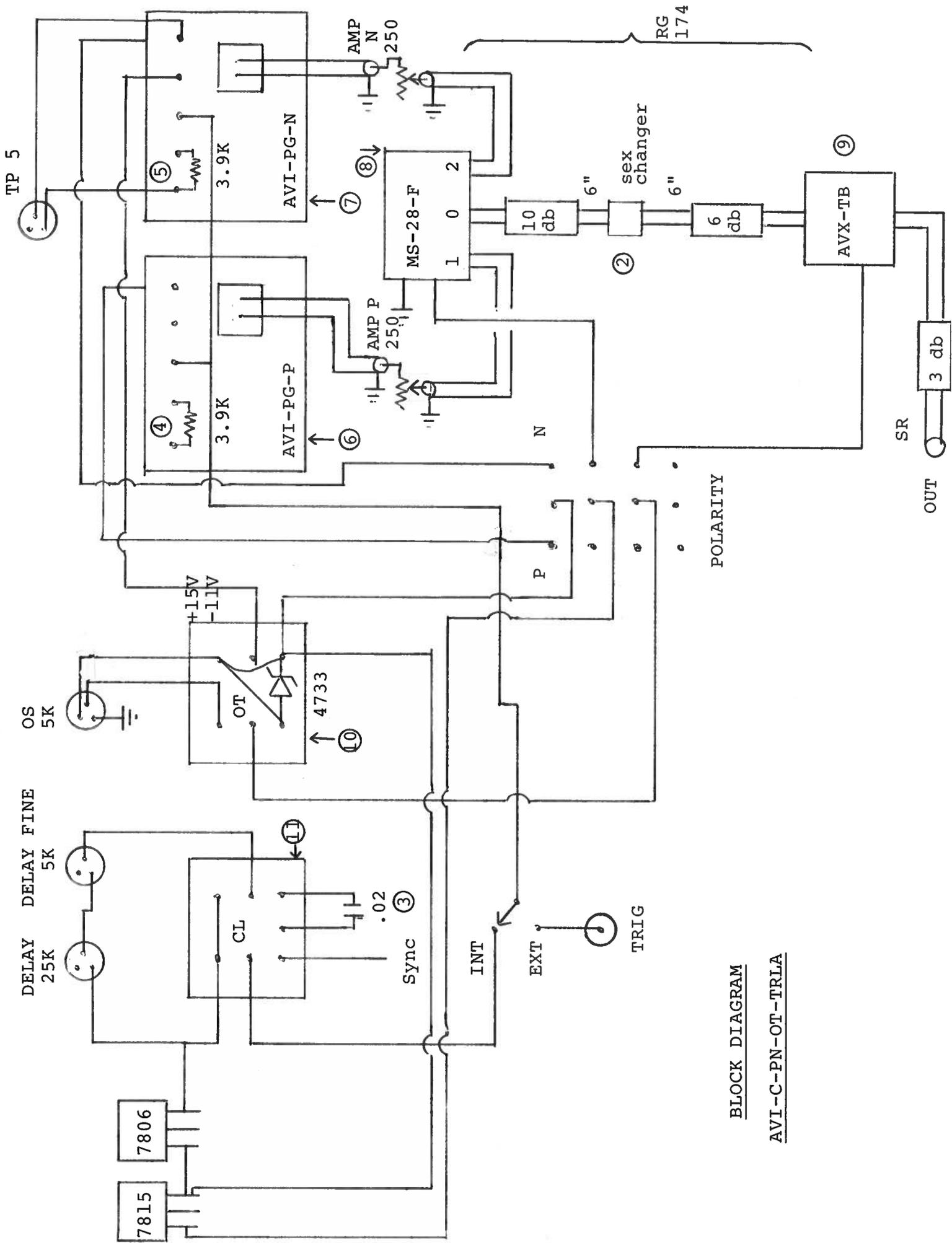
- (1) FUSED CONNECTOR, VOLTAGE SELECTOR. The detachable power cord is connected at this point. In addition, the removable cord is adjusted to select the desired input operating voltage. The unit also contains the main power fuse.
- (2) AMP_P. One turn control varies output amplitude of AVI-PG-P module from about +10 volts to about +45 volts. Should normally be set near max clockwise.
- (3) AMP_N. One turn control varies output amplitude of AVI-PG-N module from about -10 volts to about +45 volts. Should normally be set near max clockwise.
- (4) DS. One turn control varies output of AVI-OT module from about 0 to +7 volts. Should normally be near max clockwise.
- (5) TP. One turn control varies relative delay between 300 psec edges of N and P waveforms. Clockwise rotation delays 300 psec edge of N waveform. Will shift about 10 nsec.

Fig. 4

SYSTEM BLOCK DIAGRAM

POWER SUPPLY





BLOCK DIAGRAM

AVI-C-PN-OT-TR1A

Notes:

- 1) To remove top cover plate remove the 4 Phillips screws on the instrument back panel. Top cover plate may then be slid off.
- 2) Insert rise time filter at this point.
- 3) 0.02 ufd capacitor controls frequency of clock. May be increased as high as 20 KHz (0.01 ufd).
- 4) Controls output pulse width of AVI-PG-P. Resistor of about 450 ohms will provide about 10 nsec.
- 5) Controls output pulse width of AVI-PG-N. Resistor of about 470 ohms will provide about 10 nsec.
- 6) AVI-PG-P. Generates +45 volt 100 nsec wide pulse with 300 psec rise time.
- 7) AVI-PG-N. Generates -45 volt 100 nsec wide pulse with 300 psec rise time.
- 8) COAX RELAY. Selects positive or negative output pulse.
- 9) AVX-T-B. Bias insertion unit.
- 10) AVI-DT. Supplies 0 to +7 volts DC to AVX-T-B.
- 11) AVI-CL. 10 KHz clock triggers AVI-PG modules and provides SYNC output.

Schroff 12.22.88