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INSTRUCTIONS

MODEL AVRL-ITT8B PULSE GENERATOR

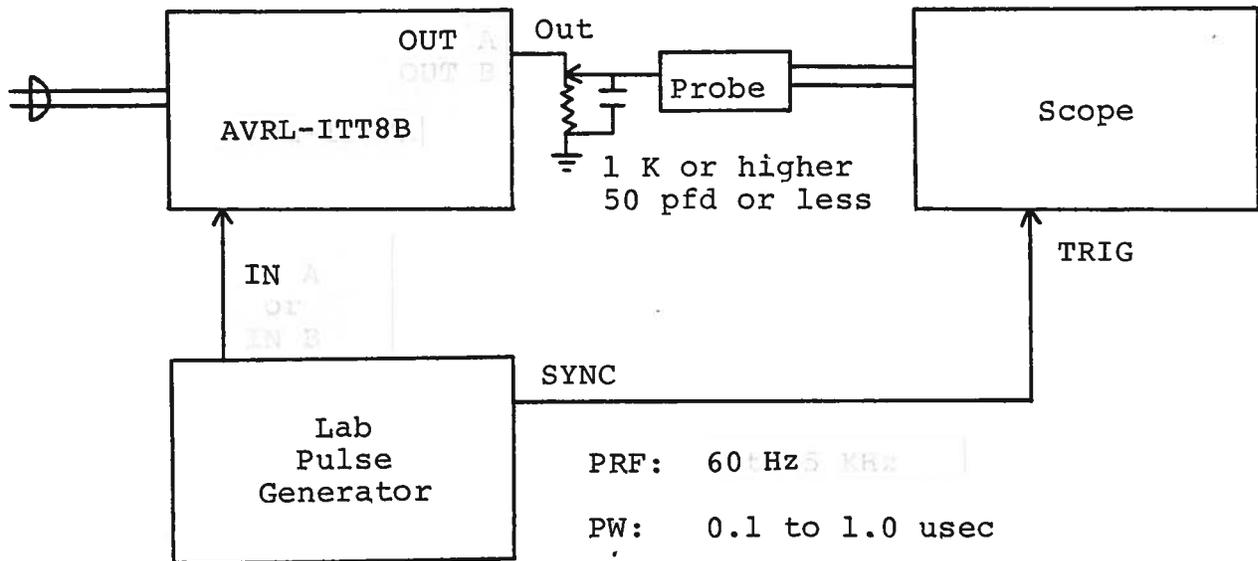
S.N. :

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.

TEST ARRANGEMENT

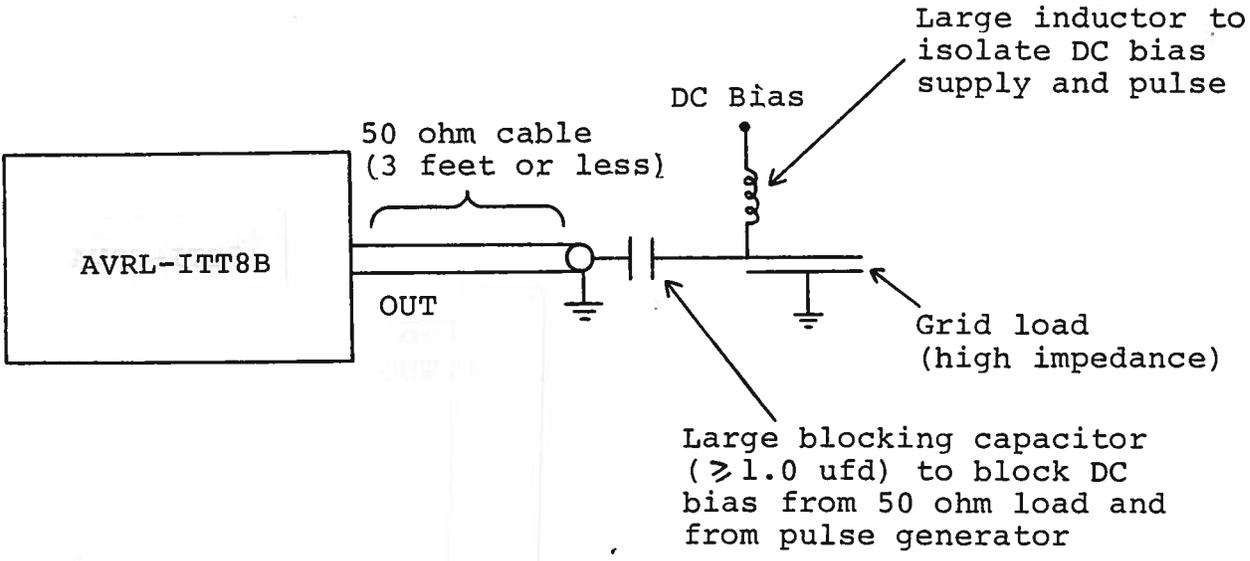
110V
50-60 Hz



PRF: 60 Hz 5 KHz
PW: 0.1 to 1.0 usec
AMP: +2 to +5V (TTL Levels)

Notes:

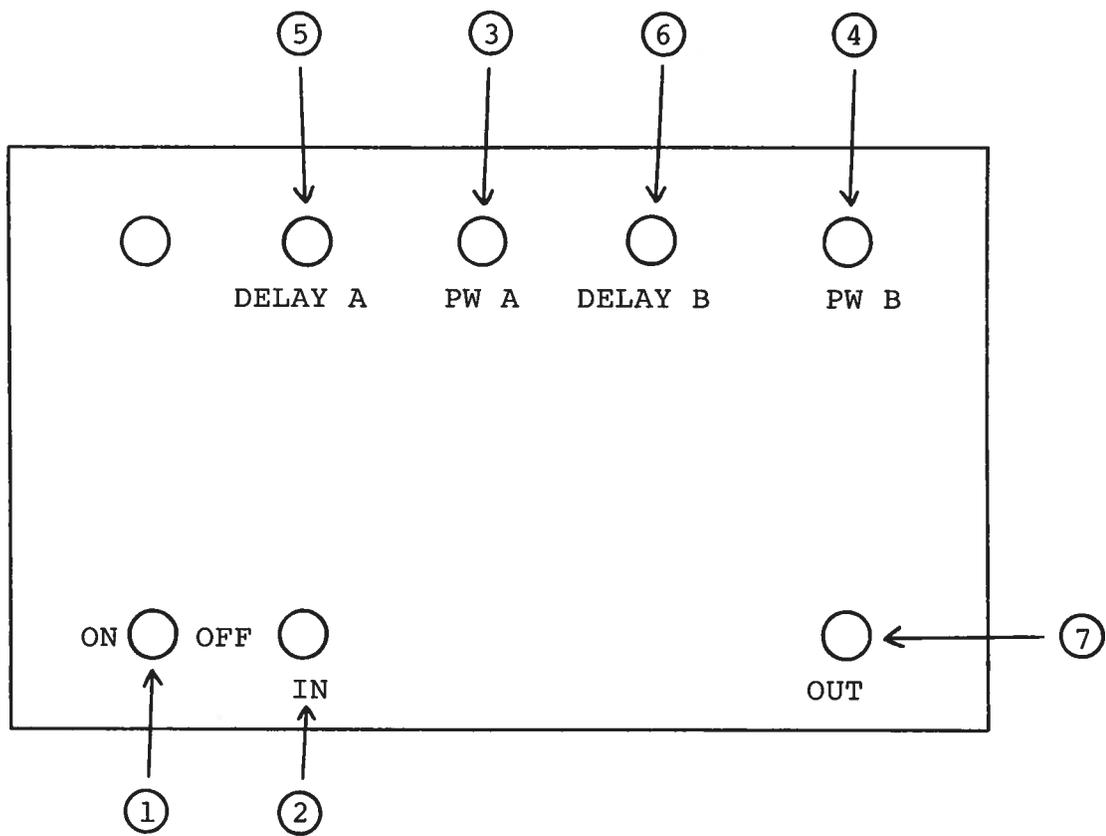
- 1) The equipment should be connected in the general fashion shown above. A scope with a bandwidth of at least 50 MHz should be used to view the outputs.
- 2) Both output amplitudes are fixed at -200 V. Care should be taken to insure that the scope and the load resistor can withstand this high voltage.
- 3) The output pulse width for output A is variable from 10 nsec to 100 nsec. The output pulse width for output B is also variable from 10 nsec to 100 nsec.
- 4) The output PRF is equal to the input PRF applied to the IN port. However, the pulse A output and pulse B outputs are inter-leaved. The output A appears 200 nsec to 2.2 usec after the input trigger pulse (depending on the DELAY A setting) and is repeated after an interval equal to twice the input trigger period. The output B appears 16.5 nsec + 0.2 usec to 16.5 nsec + 2.2 usec after the input trigger pulse (depending on the DELAY B setting) and is repeated after an interval equal to twice the input trigger period.
- 5) The unit is designed to operate directly into a high impedance load (1 K or higher). WARNING: Unit may fail if operated into a 50 ohm load. The following arrangement is recommended when the unit is used to pulse a biased high impedance load:



- 6) The output switching elements (SL9) will probably fail if the output of the unit is accidentally short-circuited or if the unit is operated at high output pulse width - high PRF combinations. The switching elements are easily replaced following the instructions given in the REPAIR Section.

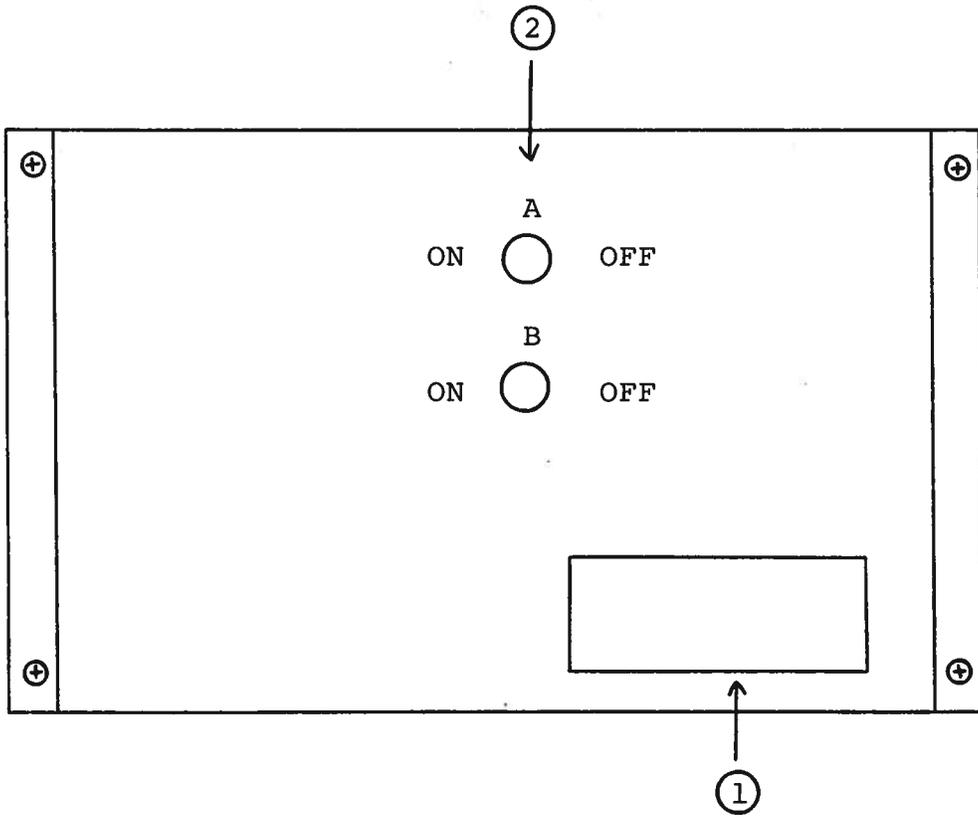
- 7) CAUTION: The instrument will be damaged if the load capacitance exceeds 50 pfd or if the load resistance is less than 1 K. Note that coaxial cables connected to the pulse generator output ports typically contribute 15 pfd per foot of length and so this capacitance must be included in the total.

FRONT PANEL CONTROLS



- (1) ON-OFF Switch. Applies prime power to all stages.
- (2) IN. Input trigger applied here (TTL levels 0.1 to 1.0 usec). Must be stable 60 Hz.
- (3) PW A. Ten turn control used to vary output PW (A) from 10 to 100 nsec.
- (4) PW B. Ten turn control used to vary output PW (B) from 10 nsec to 100 nsec.
- (5) DELAY A. Ten turn control varies delay of Pulse A relative to input trigger pulse from 200 nsec to 2.2 usec.
- (6) DELAY B. Ten turn control varies delay of Pulse B relative to input trigger pulse from 16.5 nsec + 0.2 usec to 16.5 nsec + 2.2 usec.
- (7) OUT Connector. BNC connectors used to connect output to high impedance load (1K or higher).

BACK PANEL CONTROLS



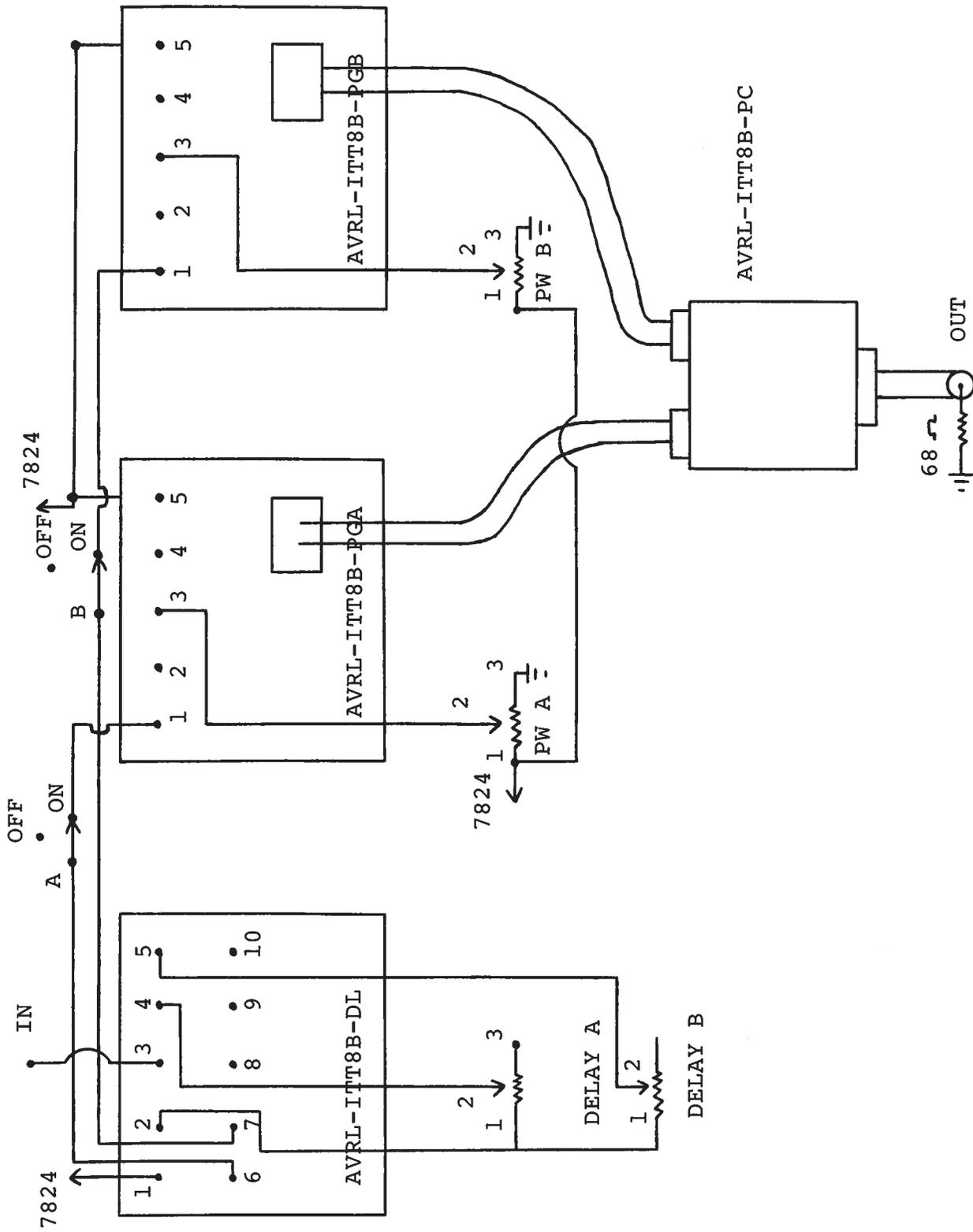
- (1) FUSED CONNECTOR, VOLTAGE SELECTOR. The detachable power cord is connected at this point. In addition, the removable cord is adjusted to select the desired input operating voltage. The unit also contains the main power fuse.
- (2) ON-OFF A, B Switch. Two position switch for turning off either the A pulse or B pulse.

REPAIR PROCEDURE

- 1) **WARNING:** Before attempting any repairs, note that potentials as high as 210 volts are employed in the chassis structure.
- 2) The pulse generator is constructed from the following subsystems or modules:
 - a) Metal chassis
 - b) A pulse generator module (AVRL-ITT8B-PGA)
 - c) B pulse generator module (AVRL-ITT8B-PGB)
 - d) Delay module (AVRL-ITT8B-D)
 - e) +24V power supply board

The modules are interconnected as shown in the following diagram.

- 3) If no output is provided by the A or B outputs then it is most likely that the SL9 switching elements in the output stages have been damaged and should be replaced using the following procedure:
 - i) Turn off prime power and remove cover plate on bottom of instrument (four 2-56 screws).
 - ii) By means of a screwdriver, briefly ground the tabs of the two SL9 transistors to discharge the bypass capacitors.
 - iii) Extract the old SL9 transistors from their socket by means of needle-nosed pliers.
 - iv) Install replacement SL9 transistors and install cover plate.

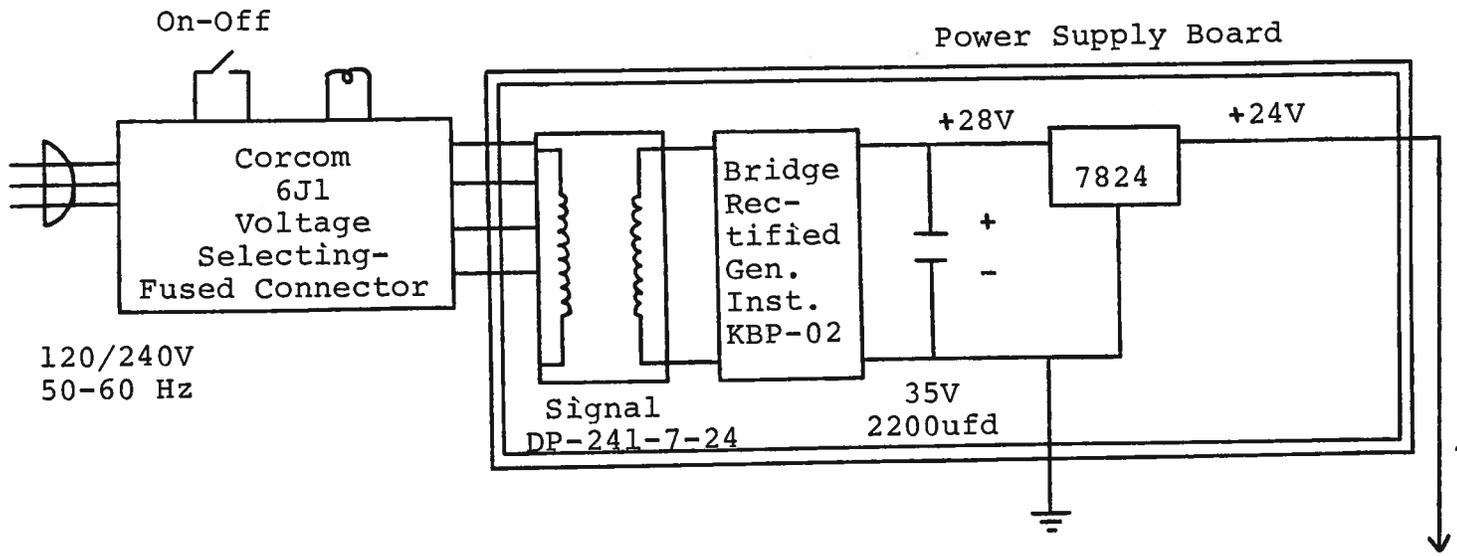


AVRL-IIT8B BLOCK DIAGRAM

+24 VOLT POWER SUPPLY

The AVRL-ITT8B consists of the three standard modules and a power supply board which supplies +24 volts (600 mA max) to the modules. In the event that the unit malfunctions, remove the instrument top cover, thereby exposing the modules. Measure the voltage at the +24 V pin of the PS module. If this voltage is substantially less than +24 volts, unsolder the line connecting the power supply board output and connect a 50 ohm 10 W load to the power supply output. The voltage across this load should be about +24 V DC. If this voltage is substantially less than 24 volts the power supply board is defective and should be repaired or replaced. If the voltage is near +24V then see instructions in preceding section.

POWER SUPPLY BOARD



Schröff

09.02.86