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INSTRUCTIONS

MODEL AVRL-ITT9A-0S PULSE GENERATOR

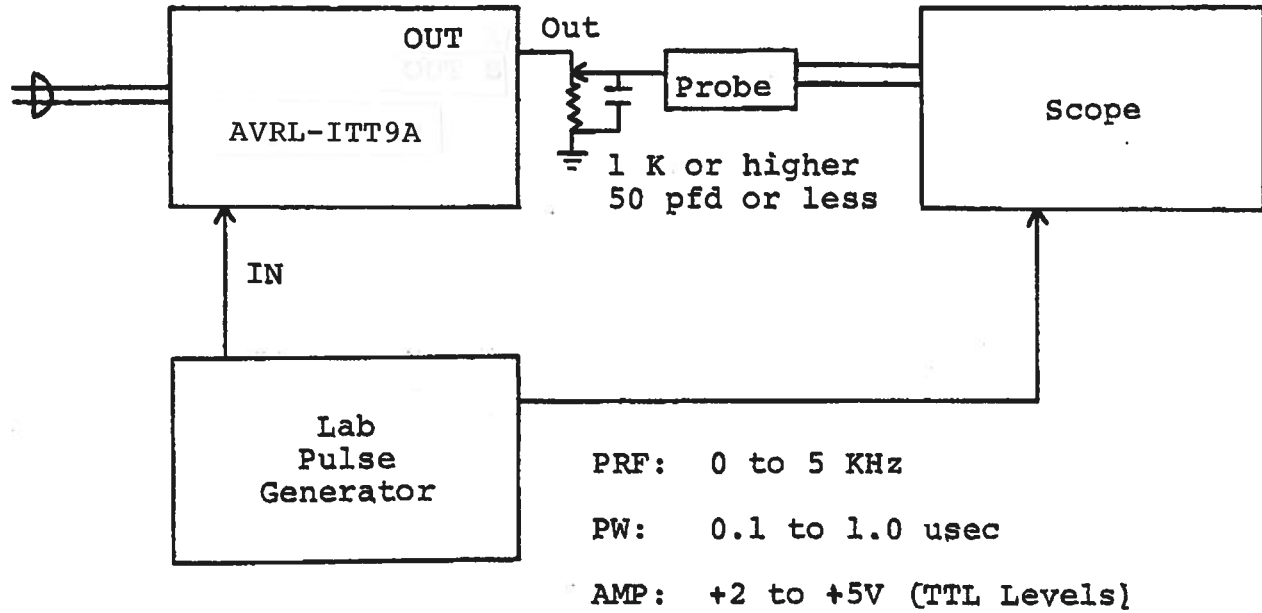
S.N.:

### 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

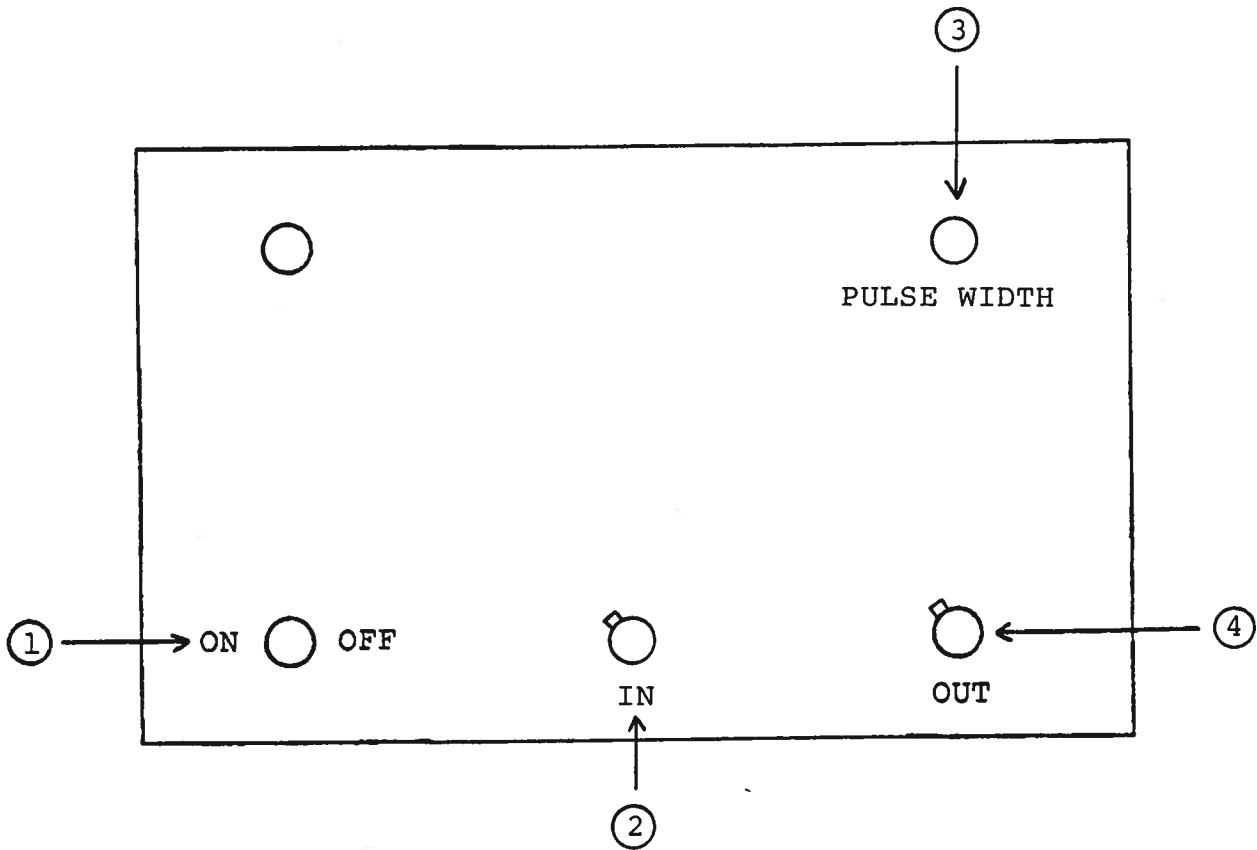
110V  
50-60 Hz



Notes:

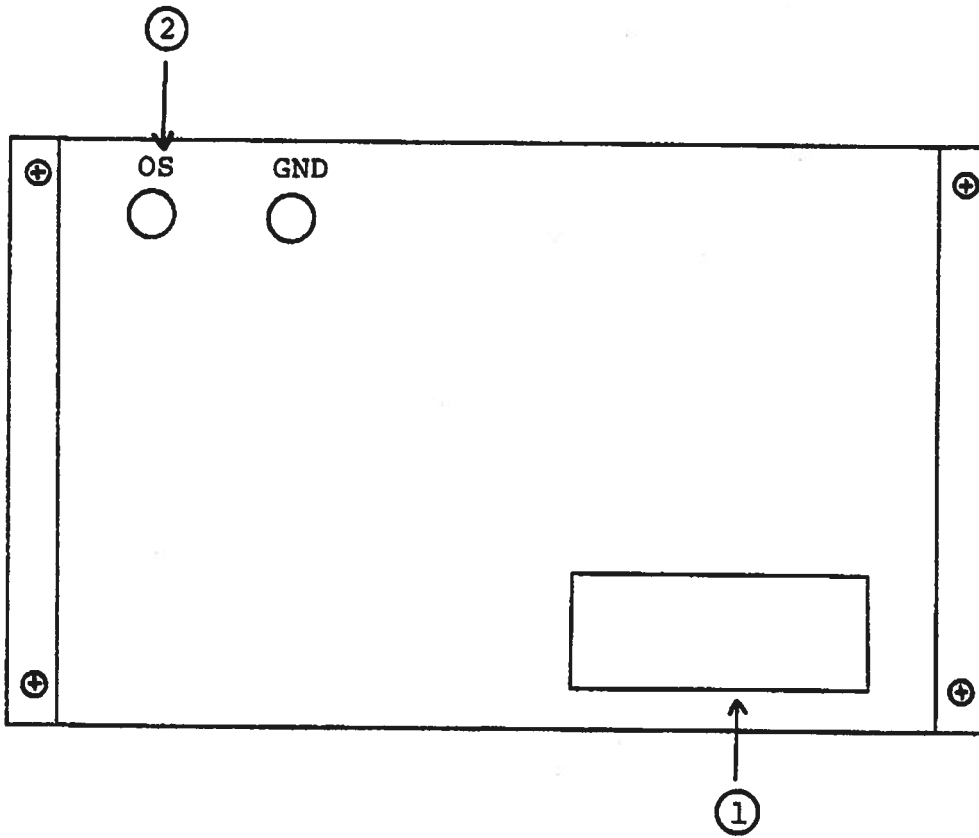
- 1) The equipment should be connected in the general fashion shown above. A scope with a bandwidth of at least 50 MHz should be used to view the outputs.
- 2) The output amplitude is fixed at -200 V. Care should be taken to insure that the scope and the load resistor can withstand this high voltage.
- 3) The output pulse width is variable from 20 nsec to 100 nsec.
- 4) The output PRF is equal to the input PRF applied to the IN port.
- 5) 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.
- 6) 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.
- 7) The output pulse may be offset by 0 to  $\pm 50$  volts by applying the required DC offset voltage to the rear panel OS terminals.

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).
- (3) PW. Ten turn control used to vary output PW from 20 to 100 nsec.
- (4) OUT Connector. BNC connector used to connect output to high impedance load.

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) OFFSET. The output pulse may be offset by 0 to  $\pm 50$  volts by applying the required DC offset voltage to the OS terminal.

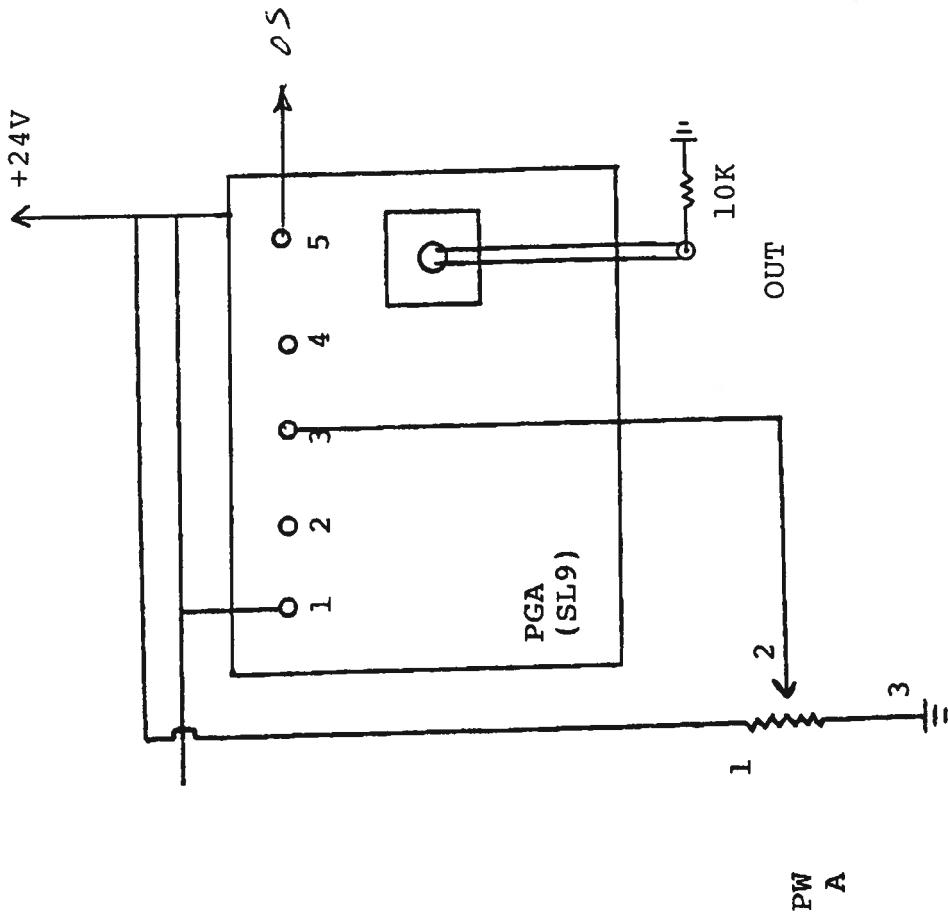


## REPAIR PROCEDURE

- 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-ITT9A-PGA)
  - c) +24V power supply board

The modules are interconnected as shown in the following diagram.

- 3) If no output is provided then it is most likely that the SL9 switching elements in the output stage 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 transistors from their socket by means of needle-nosed pliers.
  - iv) Install replacement transistors and install cover plate.

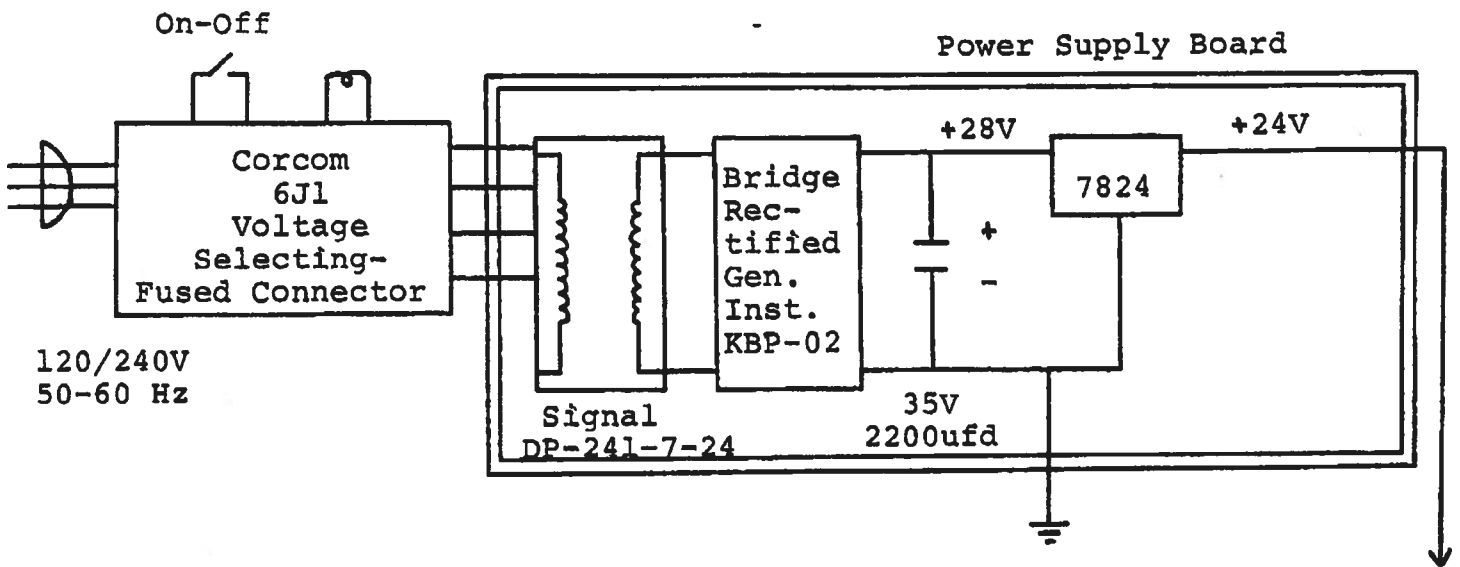


AVRL-I TT9A-0S BLOCK DIAGRAM

## +24 VOLT POWER SUPPLY

The AVRL-ITT9A consists of module and a power supply board which supplies +24 volts (600 mA max) to the module. 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



Schroff

02.15.88