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INSTRUCTIONS

MODEL AVRL-ITT9B PULSE GENERATOR

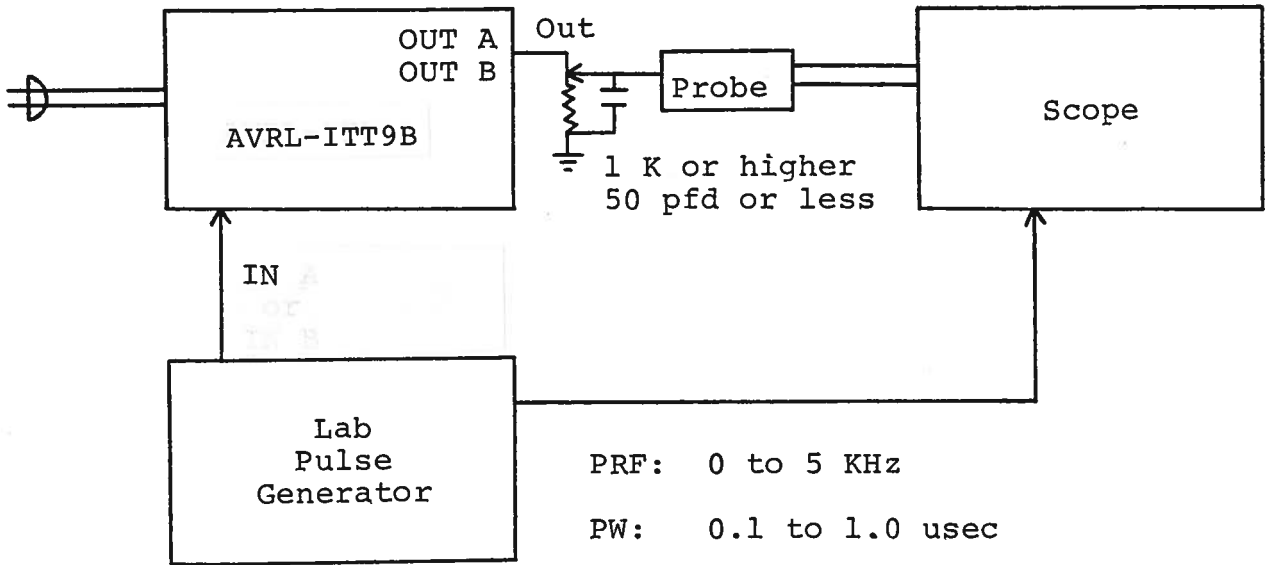
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WARRANTY

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.

TEST ARRANGEMENT

110V
50-60 Hz



PRF: 0 to 5 KHz

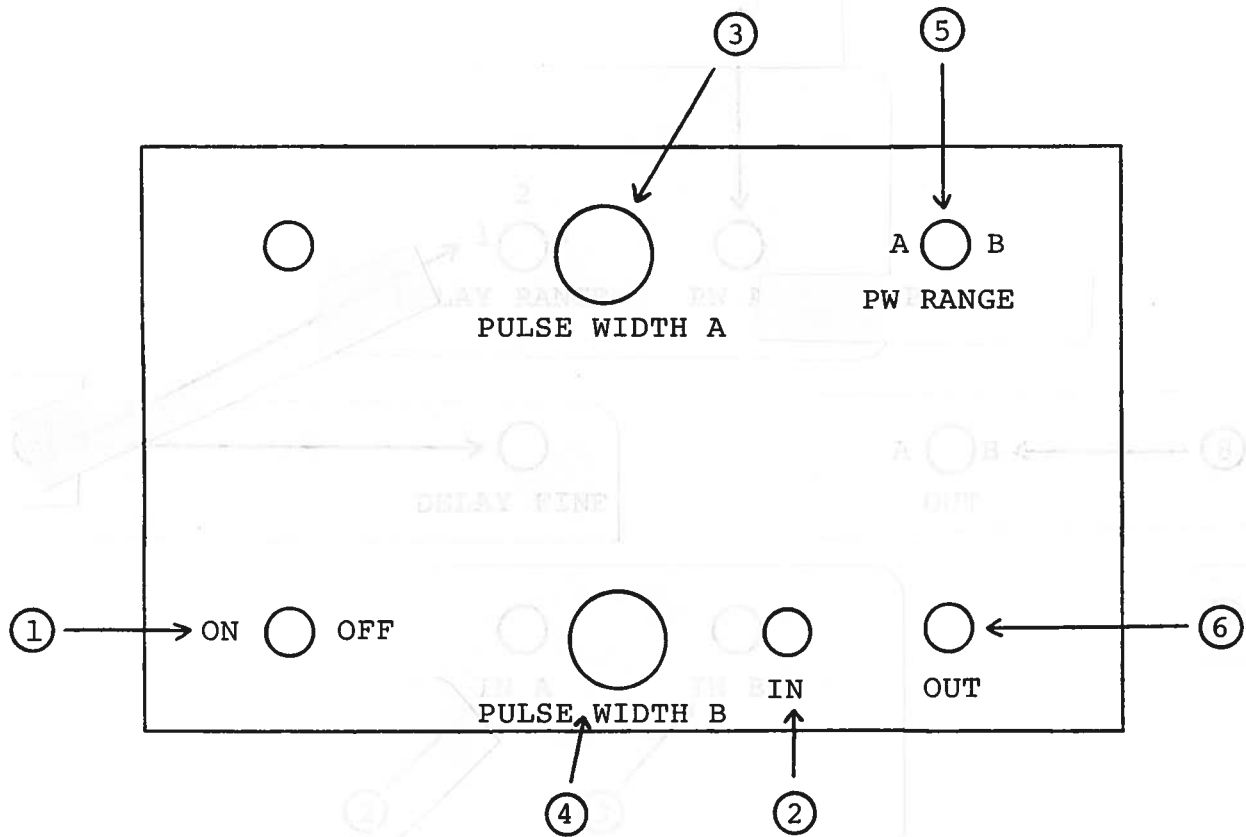
PW: 0.1 to 1.0 usec

AMP: +2 to +5V (TTL Levels)

Notes:

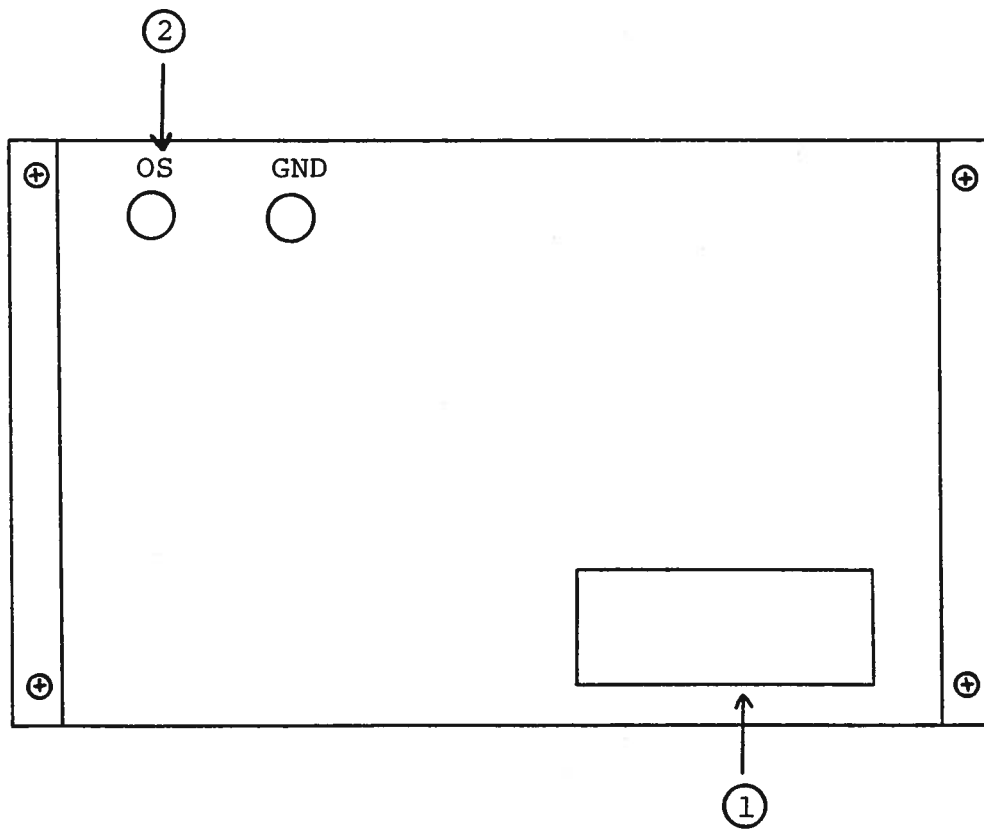
- 1) The equipment should be connected in the general fashion shown above. A scope with a bandwidth of at least 50 MHz should be used to view the outputs.
- 2) Both output amplitudes are fixed at -200 V. Care should be taken to insure that the scope and the load resistor can withstand this high voltage.
- 3) The output pulse width for RANGE A is variable from 20 nsec to 100 nsec. The output pulse width for RANGE B is variable from 100 nsec to 1.0 usec.
- 4) The output PRF is equal to the input PRF applied to the IN port. Note that both A and B outputs may fail if above PRF specifications and duty cycle are exceeded or if the load capacitance specification is exceeded.
- 5) The output switching elements (SL4 and 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 ± 100 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 A. Ten turn control used to vary output PW from 20 to 100 nsec (RANGE switch in A position).
- (4) PW B. Ten turn control used to vary pulse width from 100 nsec to 1.0 usec (RANGE switch in B position).
- (5) PW Range. Output pulse width range switch (A, 20 nsec to 100 nsec; B, 100 nsec to 1.0 usec).
- (6) 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.

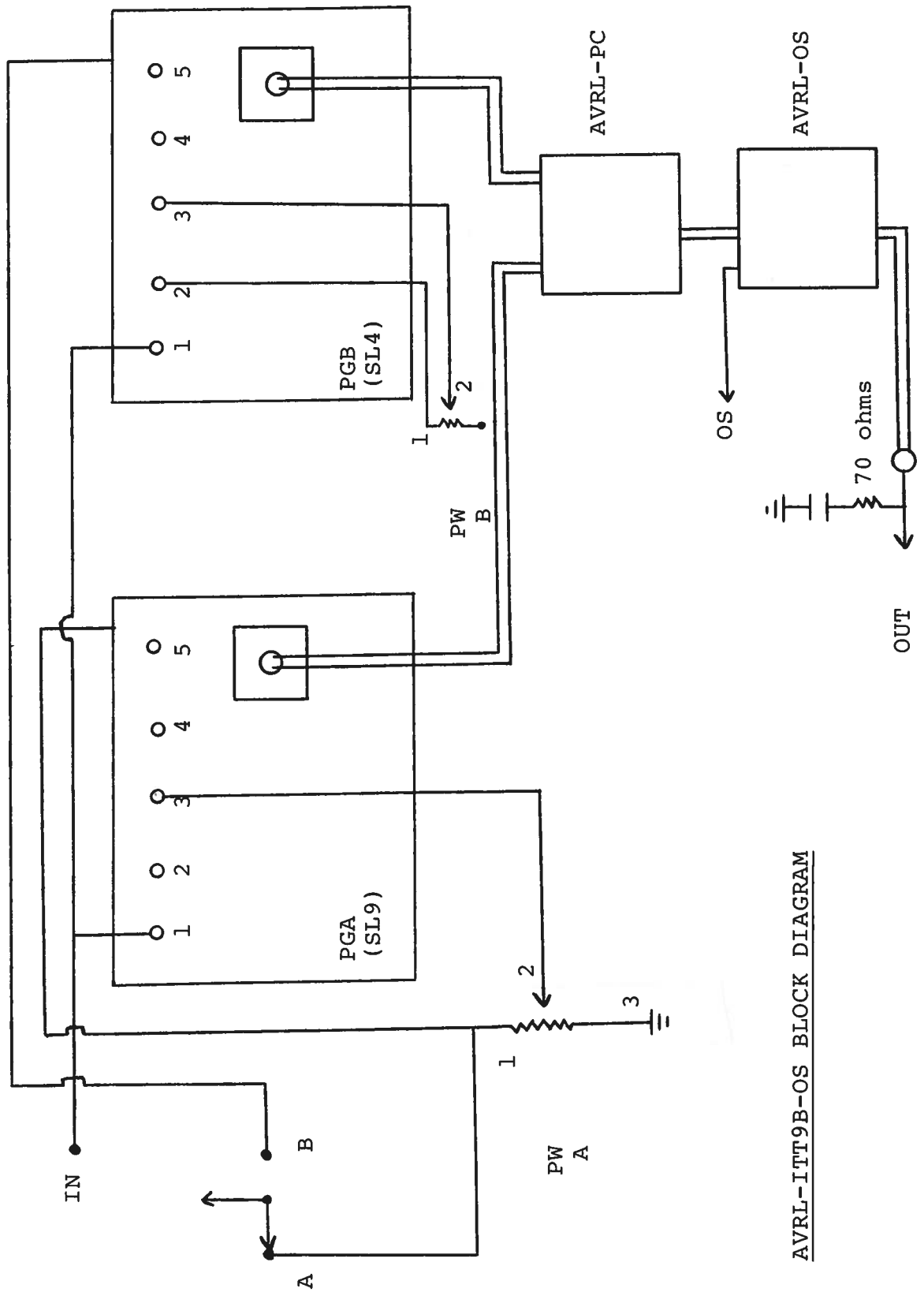
- (2) OFFSET. The output pulse may be offset by 0 to +100 volts by applying the required DC offset voltage to the OS terminal.

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-ITT9B-PGA)
 - c) B pulse generator module (AVRL-ITT9B-PGB)
 - d) Combiner module (AVRL-PC)
 - e) Offset module (AVRL-OS)
 - f) +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 or SL4 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 (or SL4) 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.

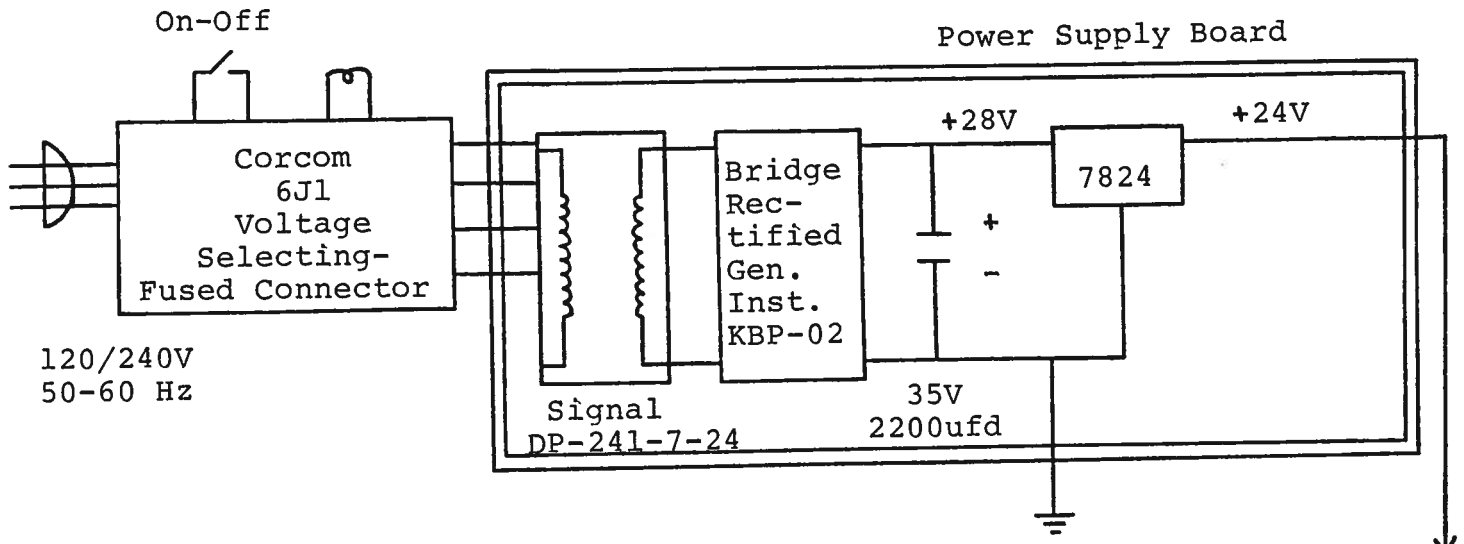


AVRL-I TT9B-OS BLOCK DIAGRAM

+24 VOLT POWER SUPPLY

The AVRL-ITT9B 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



Schroff

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