AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
ENGINEERING . MANUFACTURING

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BOX 5120 STN. "F"
OTTAWA, ONTARIO
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(613) 226-5772
TELEX 053-4591

INSTRUCTIONS

Model AVO-5D-PS-GE1 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 dissembled, 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.

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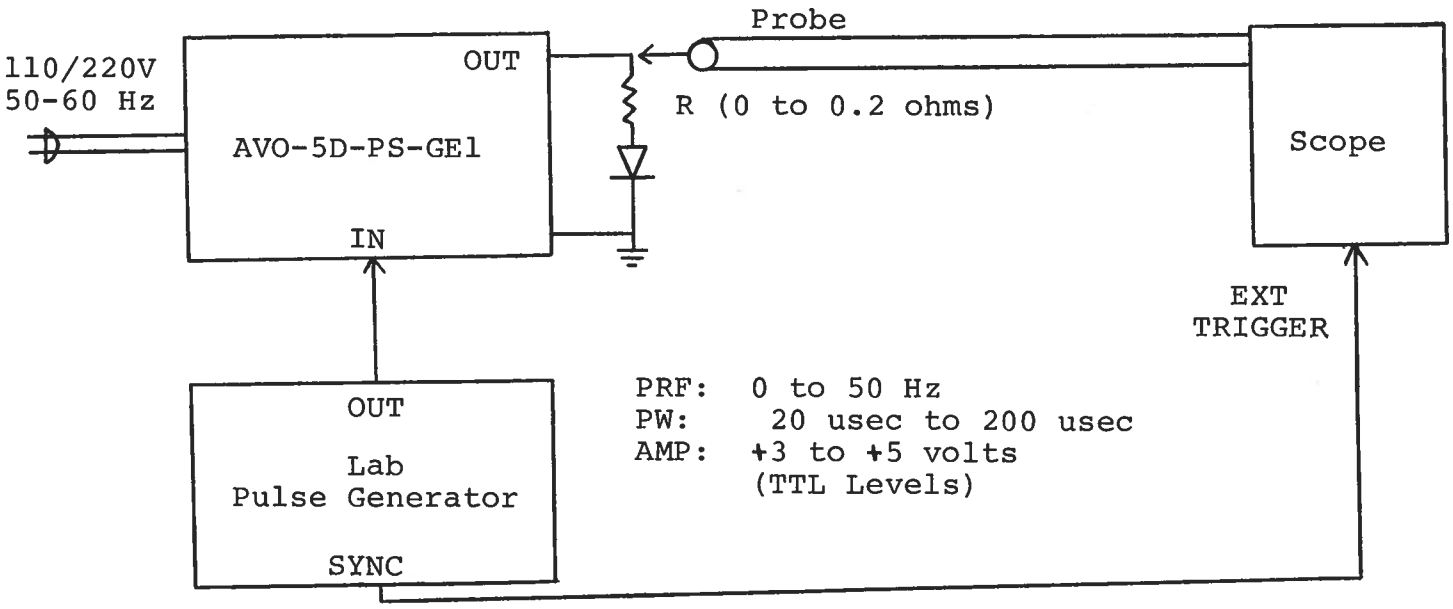
Fig. 1 PULSE GENERATOR TEST ARRANGEMENT



GENERAL OPERATING INSTRUCTIONS

1) The equipment should be connected in the general fashion shown above.

2) The unit is a pulsed voltage source which is designed to provide up to 40 Amps to a load voltage in the range of 0 to 10 volts. The output current is determined by the AMP pot setting and by the total series resistance of the load. If the series resistance of the diode load is exceptionally lower (≤0.1 ohm) it may be convenient to add additional series resistance (0 to 0.2 ohms) so that the load current varies from 0 to 40 Amps as the AMP pot is varied over its full range.

3) To voltage control the output amplitude, remove the jumper wire between banana plugs A and B on the back panel and apply 0 to +10V to connector B ($R_{IN} \geq 10K$).

4) The output pulse width is equal to the input trigger pulse width.

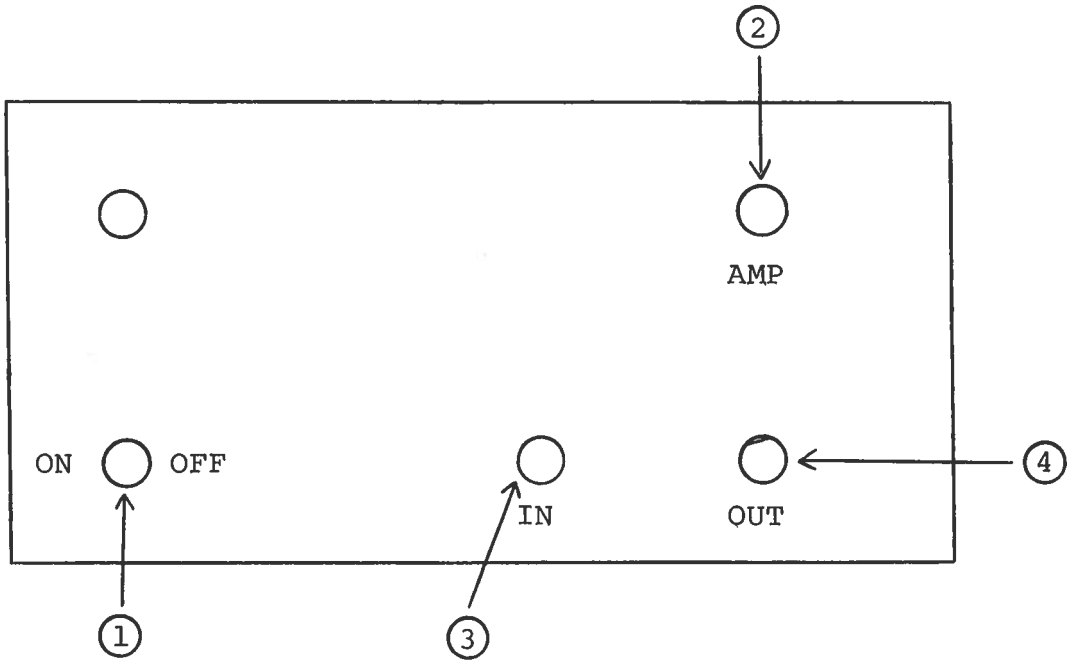
CAUTION:

A) The output switching elements in the unit may fail if the PRF exceeds 50 Hz or if the PW exceeds 200 usec. The switching elements are easily field-replaceable following the procedure given in the Repair Section.

B) The unit will deliver up to 4 watts average power (and 400 watts peak power) to the load and so the diode and any series resistance must be capable of dissipating this power.

C) The load should be connected directly to the output BNC connector without the use of additional 50 ohm cables or long leads as these will further degrade the rise time.

Fig. 2 FRONT PANEL CONTROLS



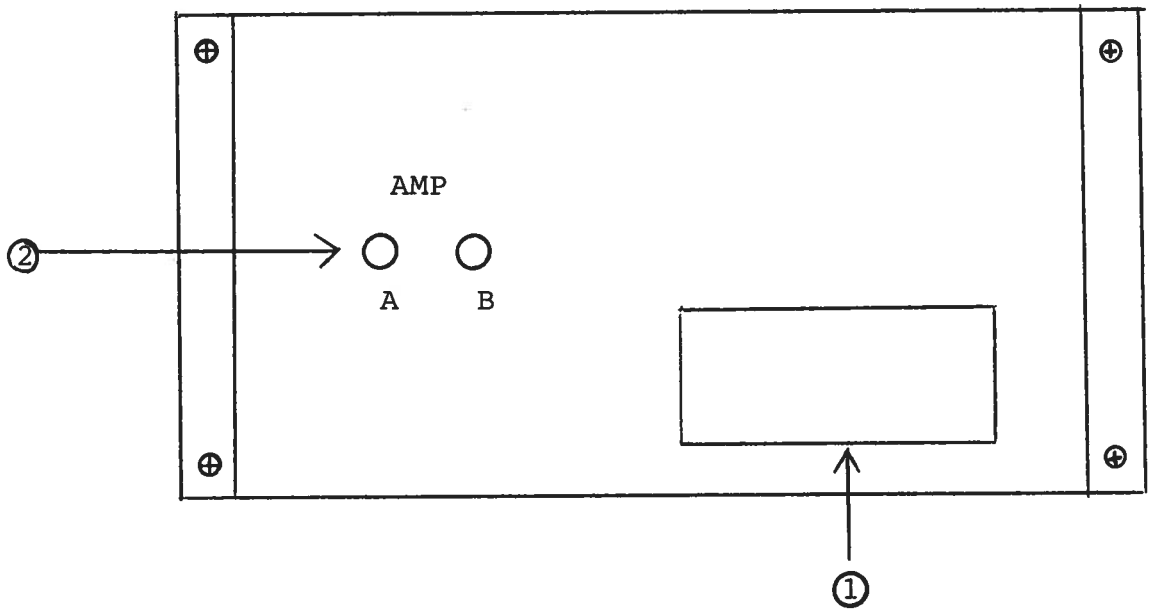
(1) ON-OFF Switch. Applies basic prime power to all stages.

(2) AMP Control. The output pulse amplitude is controlled by means of the one turn potentiometer (AMP).

(3) IN. The external trigger signal is applied at this input (BNC).

(4) OUT. The load is connected at this point (BNC).

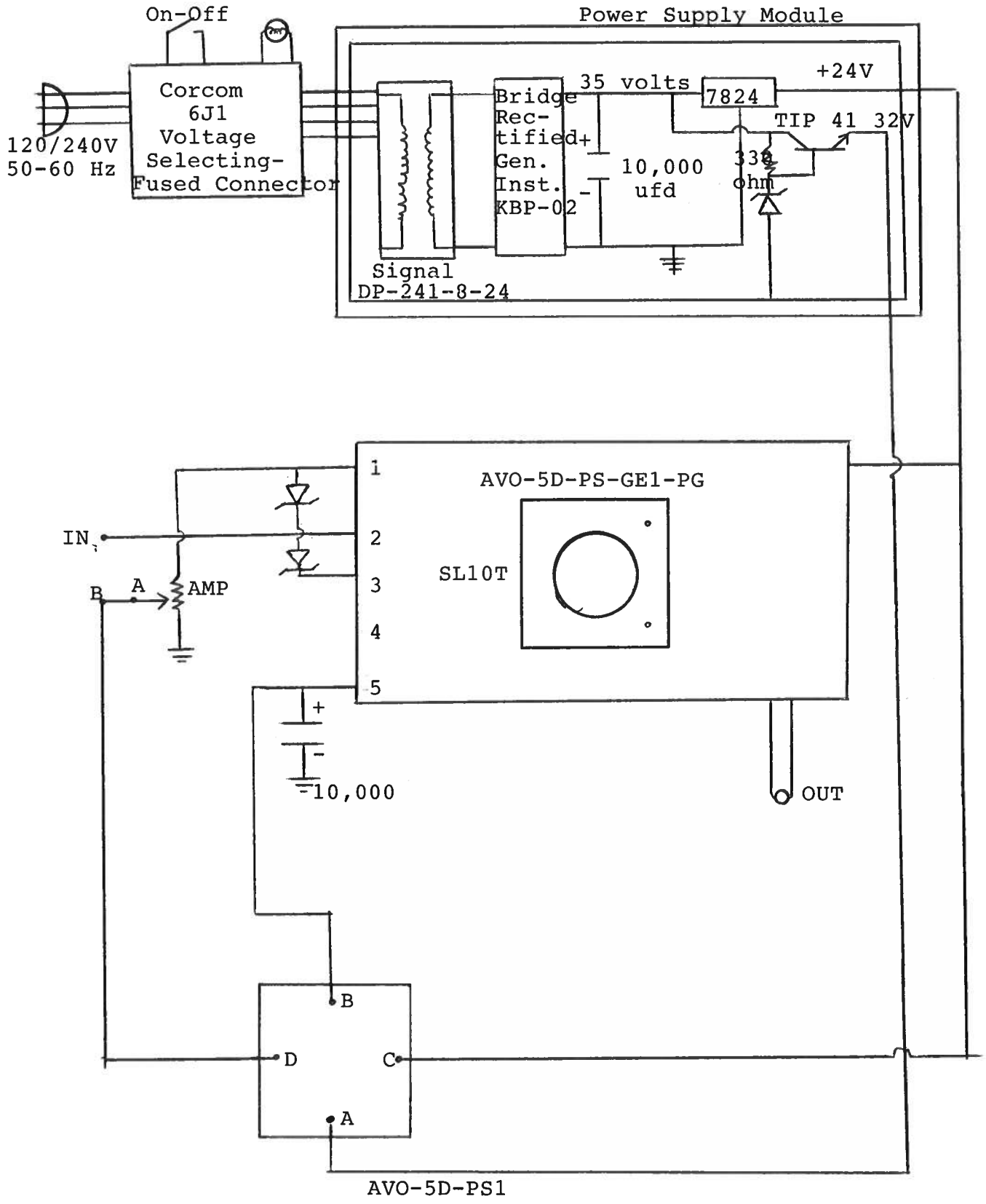
Fig. 3 BACK PANEL CONTROLS



(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) To voltage control the output amplitude, remove the jumper wire between banana plugs A and B and apply 0 to +10V to connector B ($R_{IN} \geq$ 10K).

Fig. 4 SYSTEM BLOCK DIAGRAM



SYSTEM DESCRIPTION AND REPAIR PROCEDURE

The AVO-5D-PS-GE1 unit consists of the following basic modules:

1) AVO-5D-PS-GE1-PG pulse generator module
2) AVO-5D-PS1 power supply module
3) +24V and +32V power supply board

The modules are interconnected as shown in Fig. 4.

If no output is provided then it is most likely that the SL10T 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 (two 2-56 screws).

ii) By means of a screwdriver, briefly ground the tabs of the two SL10T transistors to discharge the bypass capacitors.

iii) Loosen the 2-56 Phillips head screws which secure the SL10T transistors to the chassis and extract the old SL10T transistors from their socket by means of needle-nosed pliers. Retain the plastic insulating washer and the grey heat sink pad.

iv) Transfer the small aluminum L brackets to the replacement SL10T transistors and reinsert the transistors into the sockets, insuring that the short lead is adjacent to the black dot on the chassis and insure that the L bracket on the transistors is not shorted to the pulse generator chassis.

v) Install the grey heat sink pad and the insulating washer and the 2-56 machine screw. Install cover plate and turn on prime power.

Schroff 12.18.84

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