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INSTRUCTIONS

MODEL AV-107E-PS-IBM4 PULSE GENERATOR

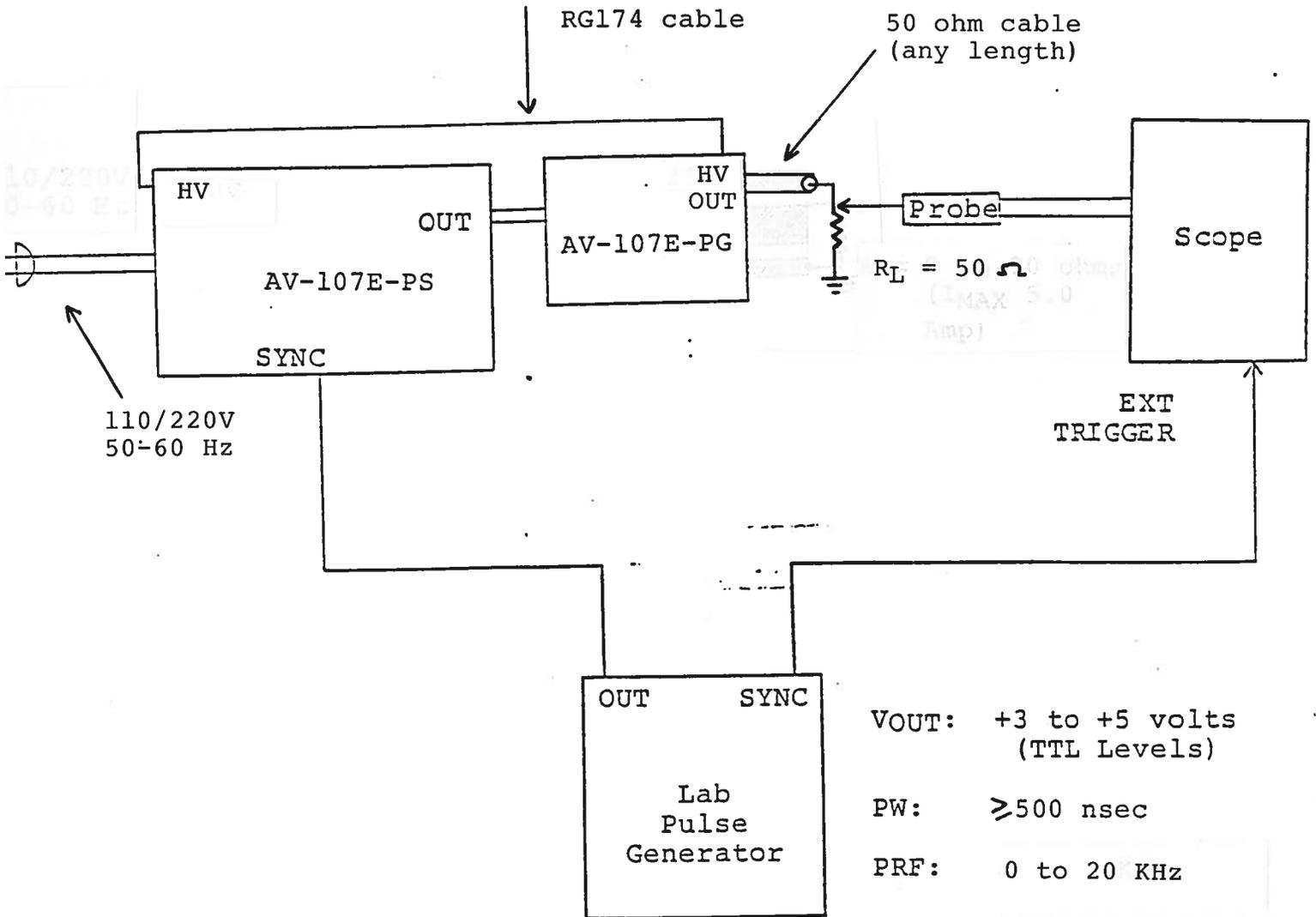
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WARRANTY

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



GENERAL OPERATING INSTRUCTIONS

- 1) The equipment should be connected in the general fashion shown above.
- 2) The output pulse width is controlled by means of the front panel one turn PW control.
- 3) The output pulse amplitude is controlled by means of the front panel one turn AMP control.
- 4) The 50 ohm load may be connected to the output port by any length of 50 ohm cable.
- 5) MI Option. The MI output port on the AV-107-PG module provides a replica of the output current pulse when connected to a 50 ohm load. The output pulse load current (Amps) and the M output voltage (Volts) are related as follows:

$$I_{LOAD} = 1.0 V_{MI}$$

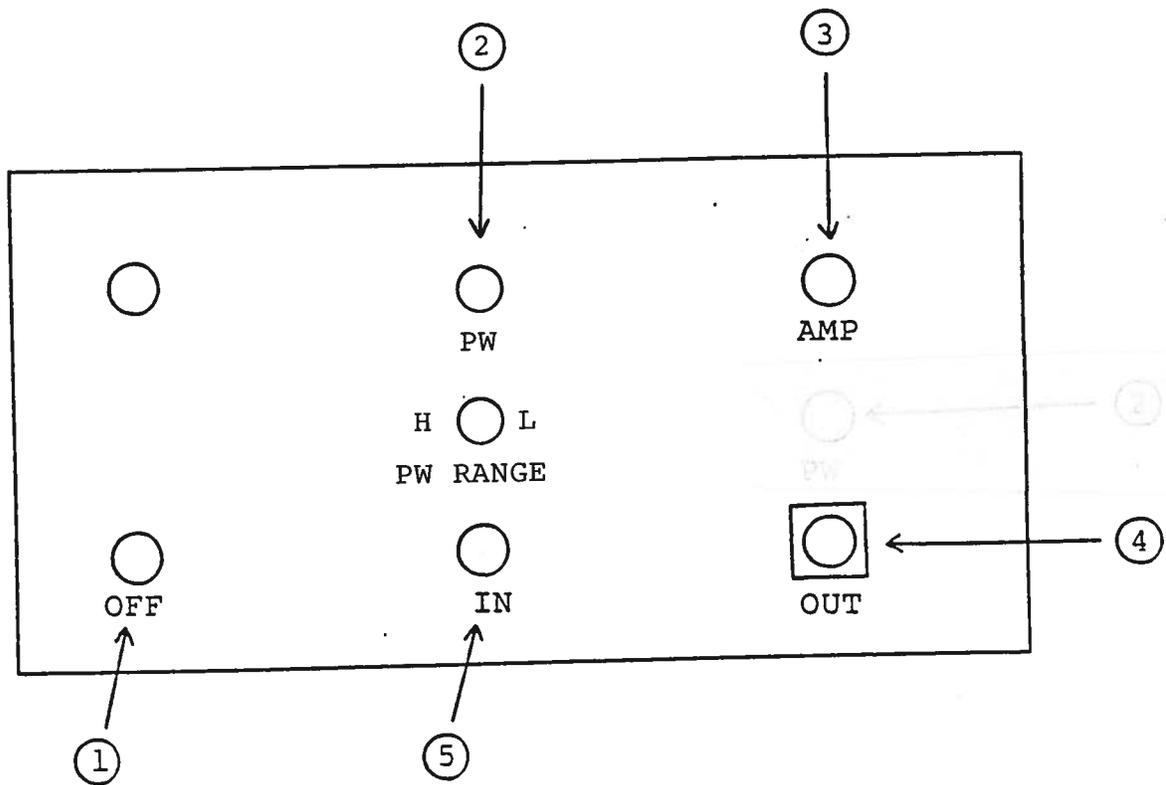
- 6) MV Option. The MV output port on the AV-107-PG module provides a replica of the output voltage pulse when connected to a 50 ohm load as follows:

$$V_{LOAD} = 100 V_{MV}$$

- 7) A positive DC offset of up to 100 mA may be applied to the load by connecting a DC power supply to the rear panel OS solder terminal. The resulting DC current is determined by the load resistance and the applied potential. Therefore, a DC voltage of about 5 volts will provide about 100 mA to a 50 ohm load. CAUTION: Do not apply a negative offset as this may damage the output stage.

Fig. 2

FRONT PANEL CONTROLS

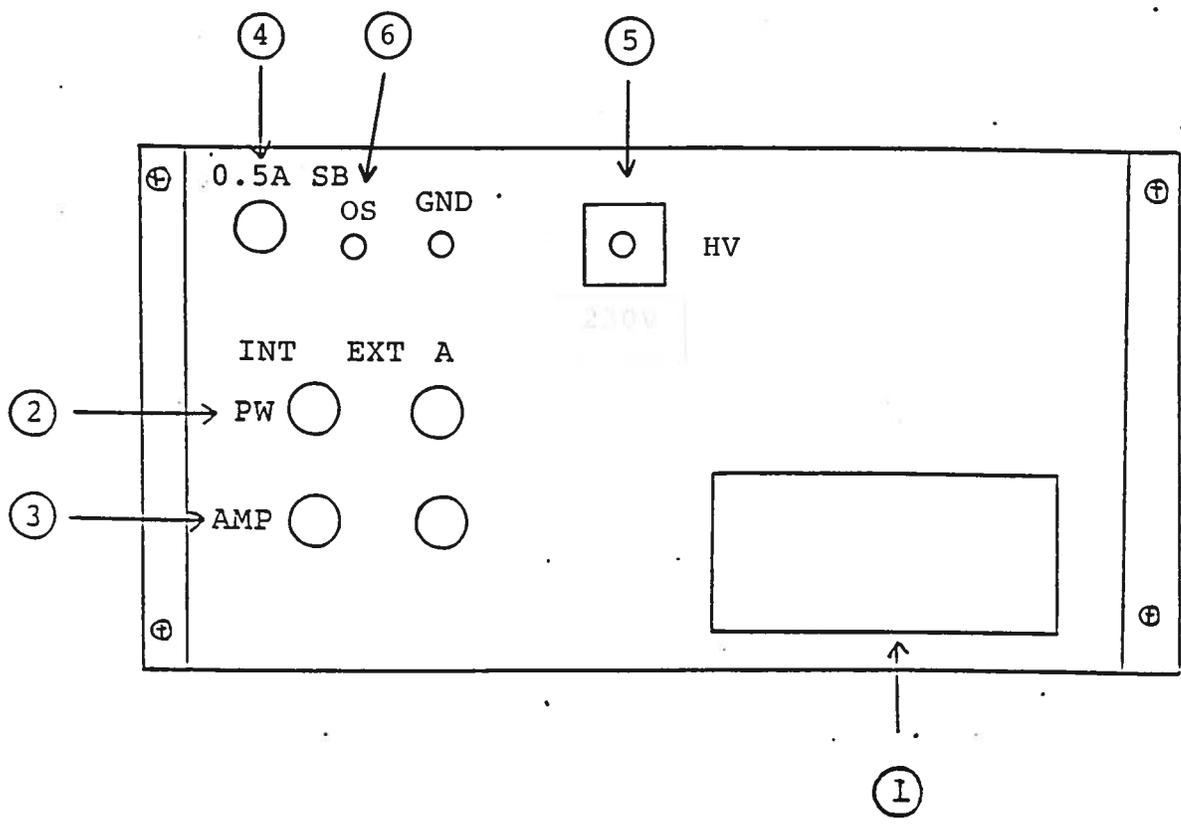


- (1) ON-OFF Switch. Applies basic prime power to all stages.
- (2) PW Control. A one turn control which varies the output pulse width as follows:

LOW	100 nsec to 330 nsec
HIGH	330 nsec to 1.0 usec
- (3) AMP Control. The output pulse amplitude is controlled by means of the one turn potentiometer (AMP).
- (4) OUT Connector. A multi pin connector which attaches the 2 foot cable from the pulse generator module to the main frame.
- (5) IN. The external trigger signal is applied at this input.

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 pulse width, set the switch in the EXT position and apply 0 to +10V between terminal A and ground ($R_{IN} \geq 10K$). (option).
- (3) To voltage control the output amplitude, set the switch in the EXT position and apply 0 to +10V between terminal A and ground ($R_{IN} \geq 10K$). (option).
- (4) 0.5A SB FUSE. Fuse limits DC current available to the output stage.
- (5) 230V. SMA output port supplies +50V DC to SMA HV input port on output module. Connectors are joined by 3 foot long RG174 coaxial cable.
- (6) OS. A positive DC offset of up to 100 mA may be applied to the load by connecting a DC power supply to the rear panel OS solder terminal. The resulting DC current is determined by the load resistance and the applied potential. Therefore, a DC voltage of about 5 volts will provide about 100 mA to a 50 ohm load. CAUTION: Do not apply a negative offset as this may damage the output stage.

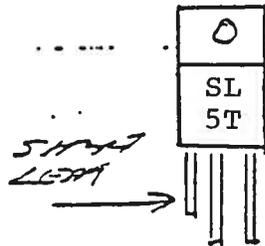
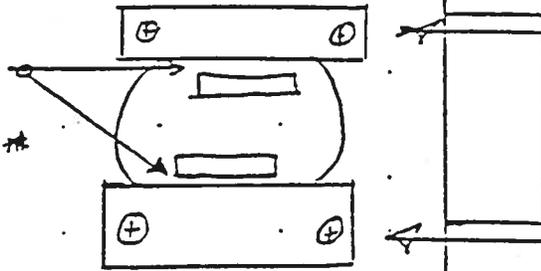
AV-107E-C SL5T HEAT SINKING

AK

-P-P6

FRONT

155
HEAT SINK
ADHESIVE*



SYSTEM DESCRIPTION AND REPAIR PROCEDURE

The AV-107E-PS unit consists of the following basic modules:

- 1) AV-107E-PG pulse generator module
- 2) +24V power supply board
- 3) +50V power supply module (and EW module)

The modules are interconnected as shown in Fig. 4.

In the event of an instrument malfunction, it is most likely that either of the rear panel fuses have blown or that some of the output switching elements (SL5T) may have failed due to an output short circuit condition or to a high duty cycle condition. The switching elements may be accessed by removing the cover plate on the bottom side of the -PG module. The cover plate is removed by removing the four counter sunk 6-32 Phillips screws. NOTE: First turn off the prime power. CAUTION: Briefly ground the SL5T tabs to discharge the 50 volts power supply potential. The elements may be removed from their sockets by means of a needle nosed pliers after removing the four counter sunk 2-56 Phillips screws which attach the small aluminum heat sinks to the body of the AV-107-PG module. The SL5T is a selected VMOS power transistor in a TO 220 package and may be checked on a curve tracer. If defective, replacement units should be ordered directly from Avtech. When replacing the SL5T switching elements, take care to insure that the short lead (of the three leads) is adjacent to the black dot on the chassis. The SL5T elements are electrically isolated from the small aluminum heat sinks but are bonded to the heat sinks using WAKEFIELD TYPE 155 HEAT SINK ADHESIVE.

Schroff

02.23.90

-EW

-EA