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NANOSECOND WAVEFORM ELECTRONICS
ENGINEERING . MANUFACTURING

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INSTRUCTIONS

MODEL AVR-A-2-PS PULSE GENERATOR

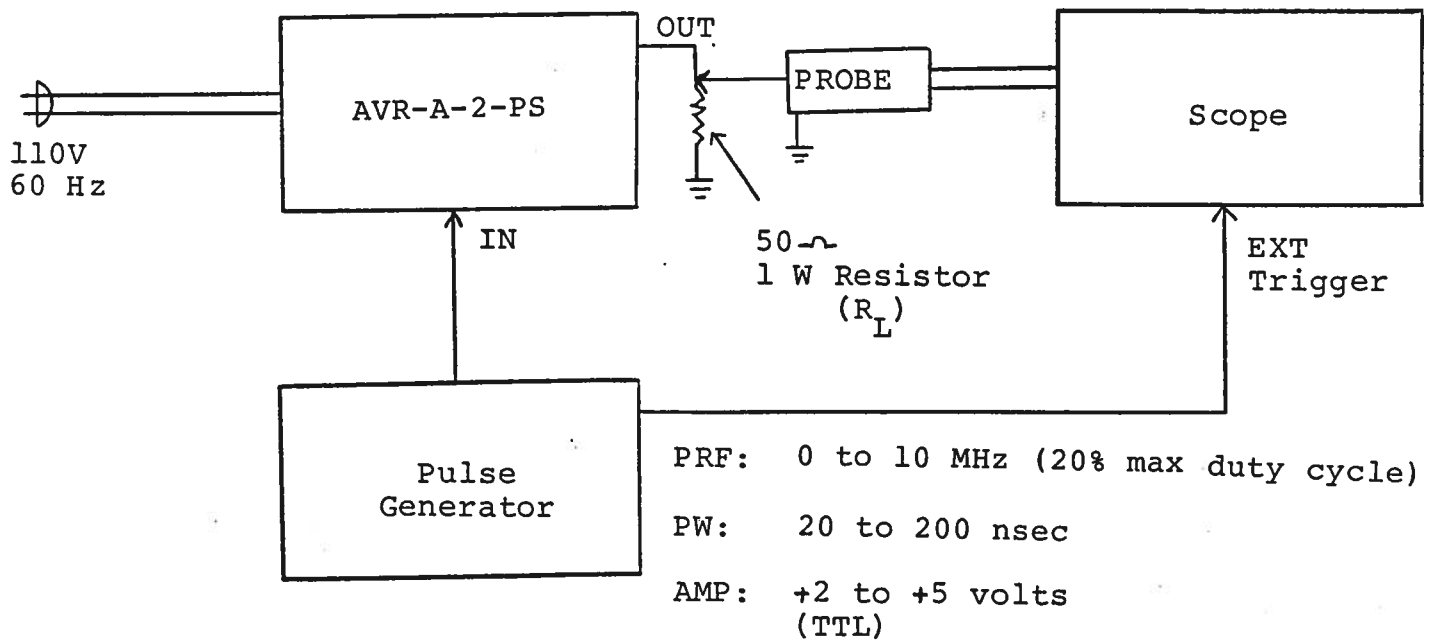
S.N. :

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.

A.

TEST ARRANGEMENT

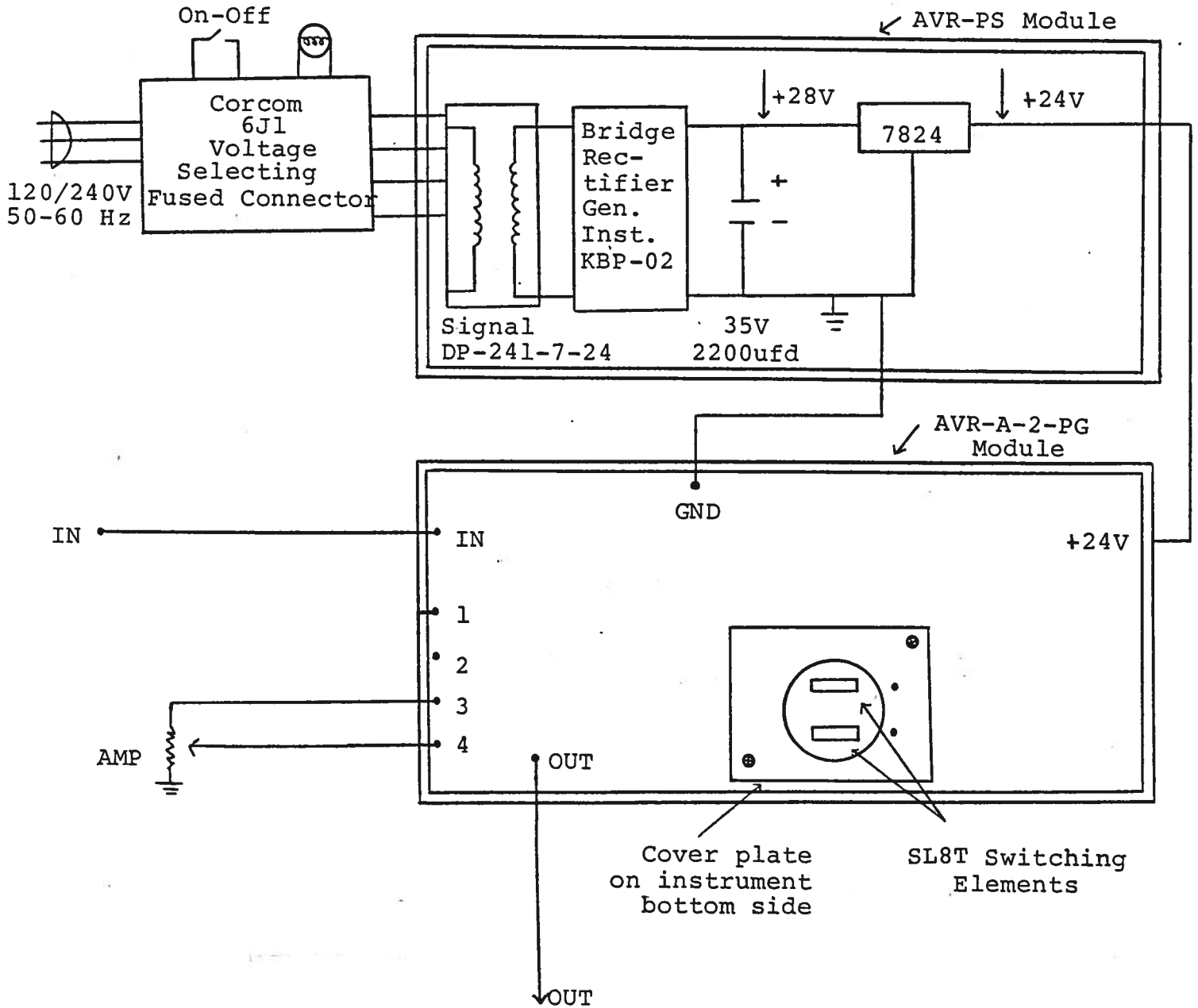


GENERAL OPERATING INSTRUCTIONS

- 1) The equipment should be connected in the general fashion shown above. Since the AVR unit provides an output pulse rise time as low as 5 nsec a fast oscilloscope (at least 50 MHz and preferably 200 MHz) should be used to display the waveform. Also, if a load of other than 50 ohm is employed, the length of coaxial cable between the AVR unit and the load should not exceed about 5 feet or the output waveform may be degraded by the resulting reflections.
- 2) The output PRF is equal to the input trigger pulse PRF.
- 3) The output pulse width is equal to the input trigger pulse width.
- 4) The output pulse amplitude is controlled by means of the front panel one turn AMP control.
- 5) 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 ($R_{IN} \geq 10K$). (option).
- 6) Care should be taken to not operate with an output pulse width greater than 200 nsec as prolonged operation in this mode may very well result in equipment failure. Also, the maximum PRF or duty cycle must not be exceeded for the same reason. Under simultaneous conditions of wide pulse width, high PRF and high load current, the bias voltage applied to the output power stage decreases and as a result the attainable output peak voltage decreases to less than 50 volts. Under conditions of severe loading the output stage may be damaged.
- 7) The output polarity is controlled by the rear panel two position polarity switch (-PN option).

C.

SYSTEM BLOCK DIAGRAM AND REPAIR PROCEDURE



SYSTEM DESCRIPTION AND REPAIR PROCEDURE

The AVR-A-2-PS consists of the following basic modules:

- 1) AVR-A-2-PG pulse generator module
- 2) +24V power supply board

The modules are interconnected as shown in Fig. 4.

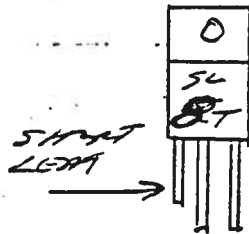
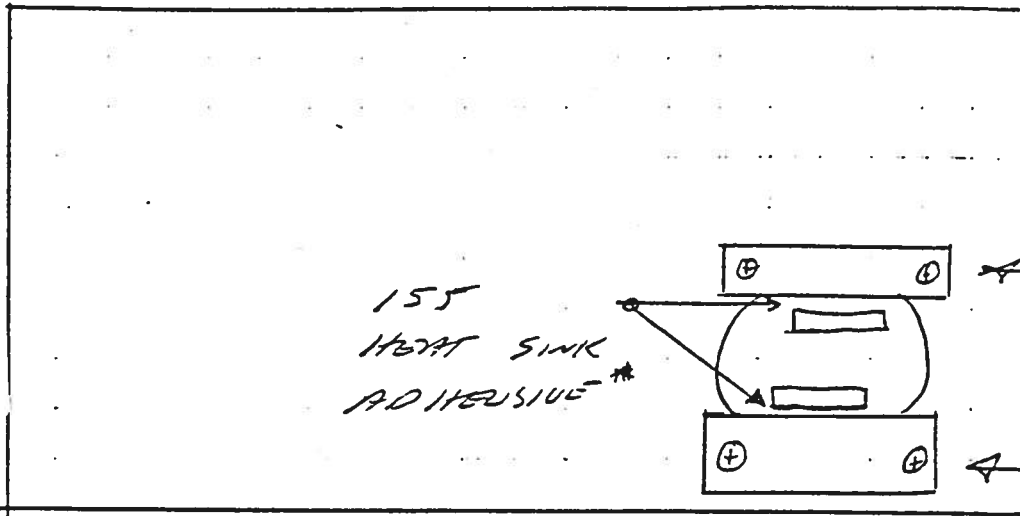
In the event of an instrument malfunction, it is most likely that some of the output switching elements (SL8T) may have failed due to an output short circuit condition or to a high duty cycle condition. The switching elements may be accessed by removing the cover plate on the bottom side of the chassis. **NOTE:** First turn off the prime power. **CAUTION:** Briefly ground the SL8T tabs to discharge the 60 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 chassis. The SL8T 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 SL8T switching elements, take care to insure that the short lead (of the three leads) is adjacent to the black dot on the chassis. The SL8T elements are electrically isolated from the small aluminum heat sinks but are bonded to the heat sinks using WAKEFIELD TYPE 155 HEAT SINK ADHESIVE. If the switching elements are not defective, then the four Phillips screws on the back panel should be removed. The top cover may then be slid off and the operation of the clock and power supply modules checked.

The power supply board generates +24V DC to power the other modules. If the voltage is less than +24V, turn off the prime power and unsolder the lead from the 7824 regulator chip on the power supply board. Solder a 100 ohm 5 watt resistor to the 7824 output to ground and turn on the prime power. A voltage of +24 volts should be read. If the voltage is less then the power supply board is defective and should be repaired or replaced.

AUR-A-2-PS

SLBT

HEAT SINK



Schroff

03.14.88

-EA

-PN