AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
ENGINEERING – MANUFACTURING

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INSTRUCTIONS

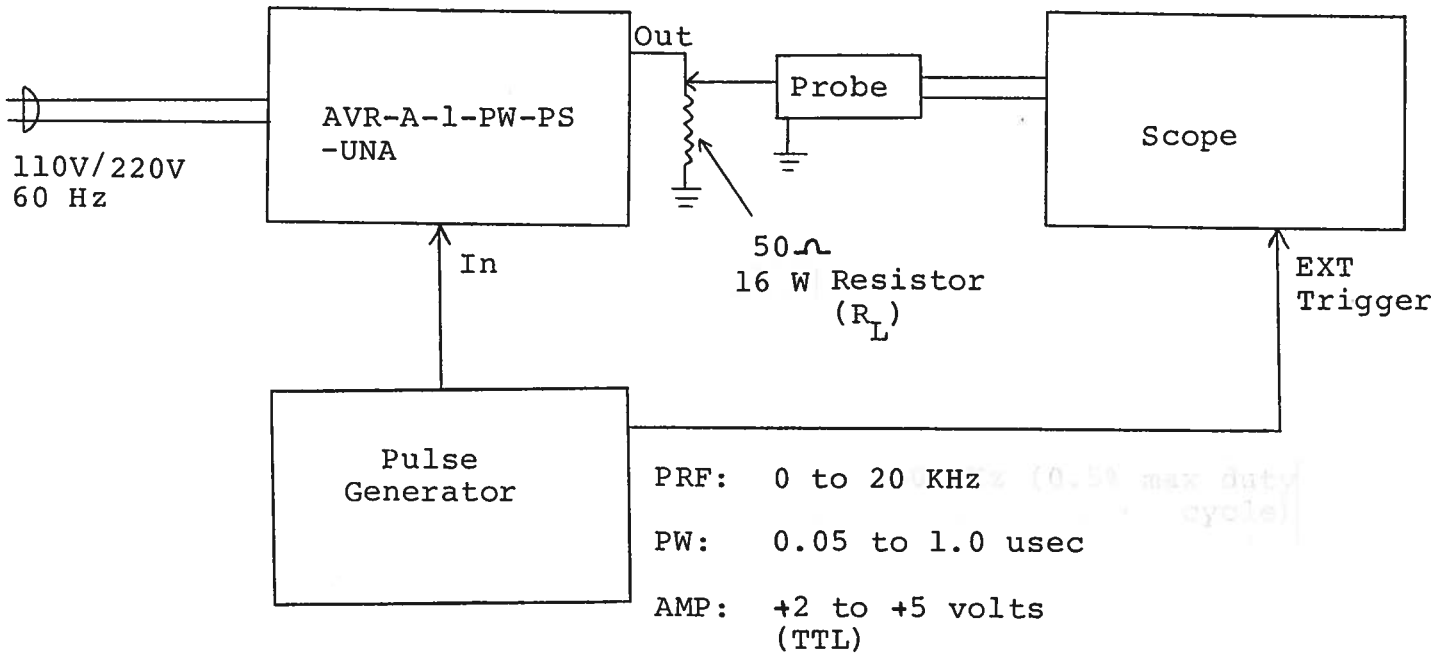
MODEL AVR-A-1-PW-PS-UNA PULSE GENERATOR

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.

A. TEST ARRANGEMENT



B. 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 2 nsec a fast oscilloscope (at least 500 MHz) should be used to display the waveform.

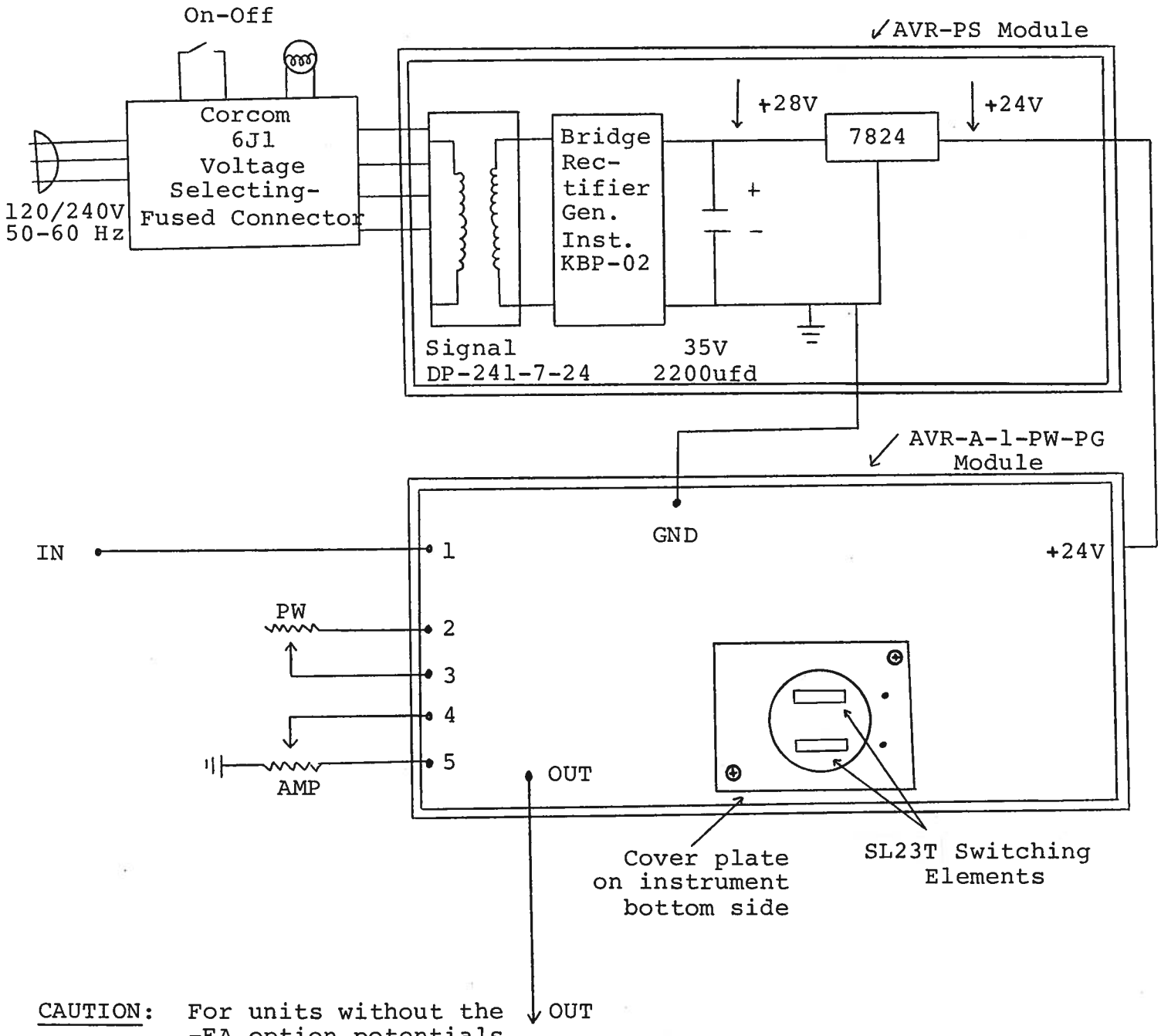
2) The output PRF is equal to the input trigger pulse PRF.

3) The output pulse width is controlled by means of the front panel one turn PW control.

4) The output pulse amplitude is controlled by means of the front panel one turn AMP control.

5) Care should be taken to not operate with a PRF higher than 20 KHz as prolonged operation in this mode may very well result in equipment failure. 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 200 volts. Under conditions of severe loading the output stage may be damaged. See following pages for repair procedure.

C. SYSTEM BLOCK DIAGRAM AND REPAIR PROCEDURE



CAUTION: For units without the -EA option potentials as high as 220V DC exist on the AMP pot leads and associated terminals

SYSTEM DESCRIPTION AND REPAIR PROCEDURE

The AVR-A-1-PW-PS consists of the following basic modules:

1) AVR-A-1-PW-UNA-PG pulse generator module
2) AVR-A-TRF rise time module
3) AVR-15 power supply module
4) +24V power supply board

The modules are interconnected as shown above.

In the event of an instrument malfunction, it is most likely that either the rear panel 2.0A SB fuse or some of the output switching elements (SL23T) 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 SL23T tabs to discharge the 220 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 SL23T 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 SL23T switching elements, take care to insure that the short lead (of the three leads) is adjacent to the black dot on the chassis. The SL23T elements are electrically isolated from the small aluminum heat sinks but are bonded to the heat sinks using WAKEFIELD TYPE 155 HEAT SINK ADHESIVE.

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