



AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
SINCE 1975

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INSTRUCTIONS

MODEL AVR-A-2-PW-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 assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

TECHNICAL SUPPORT

Phone: 613-226-5772 or 1-800-265-6681

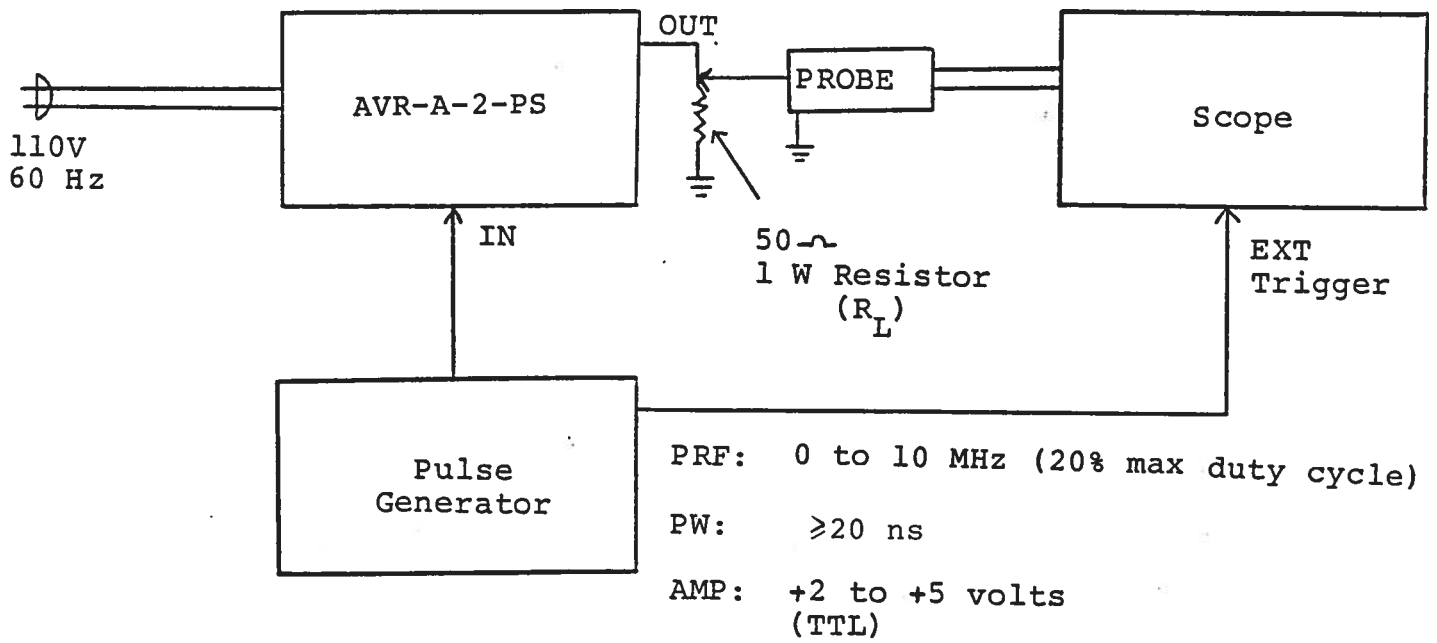
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E-mail: info@avtechpulse.com

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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 ns 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 controlled by 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) The maximum PRF or duty cycle must not be exceeded. 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.
- 6) Units with a serial number higher than 5600 are protected by an automatic overload protective circuit which controls the front panel overload light. If the unit is overloaded (by operating at an exceedingly high duty cycle or by operating into a short circuit), the protective circuit will turn the output of the instrument OFF and turn the indicator light ON. The light will stay ON (i.e. output OFF) for about 5 seconds after which the instrument will attempt to turn ON (i.e. light OFF) for about 1 second. If the overload condition persists, the instrument will turn OFF again (i.e. light ON) for another 5 seconds. If the overload condition has been removed, the instrument will turn on and resume normal operation. Overload conditions may be removed by:
 - 1) Reducing PRF (i.e. switch to a lower range)
 - 2) Reducing pulse width (i.e. switch to a lower range)
 - 3) Removing output load short circuit (if any)

7) The unit can be converted from 110 to 220V 50-60 Hz operation by adjusting the voltage selector card in the rear panel fused voltage selector-cable connector assembly.

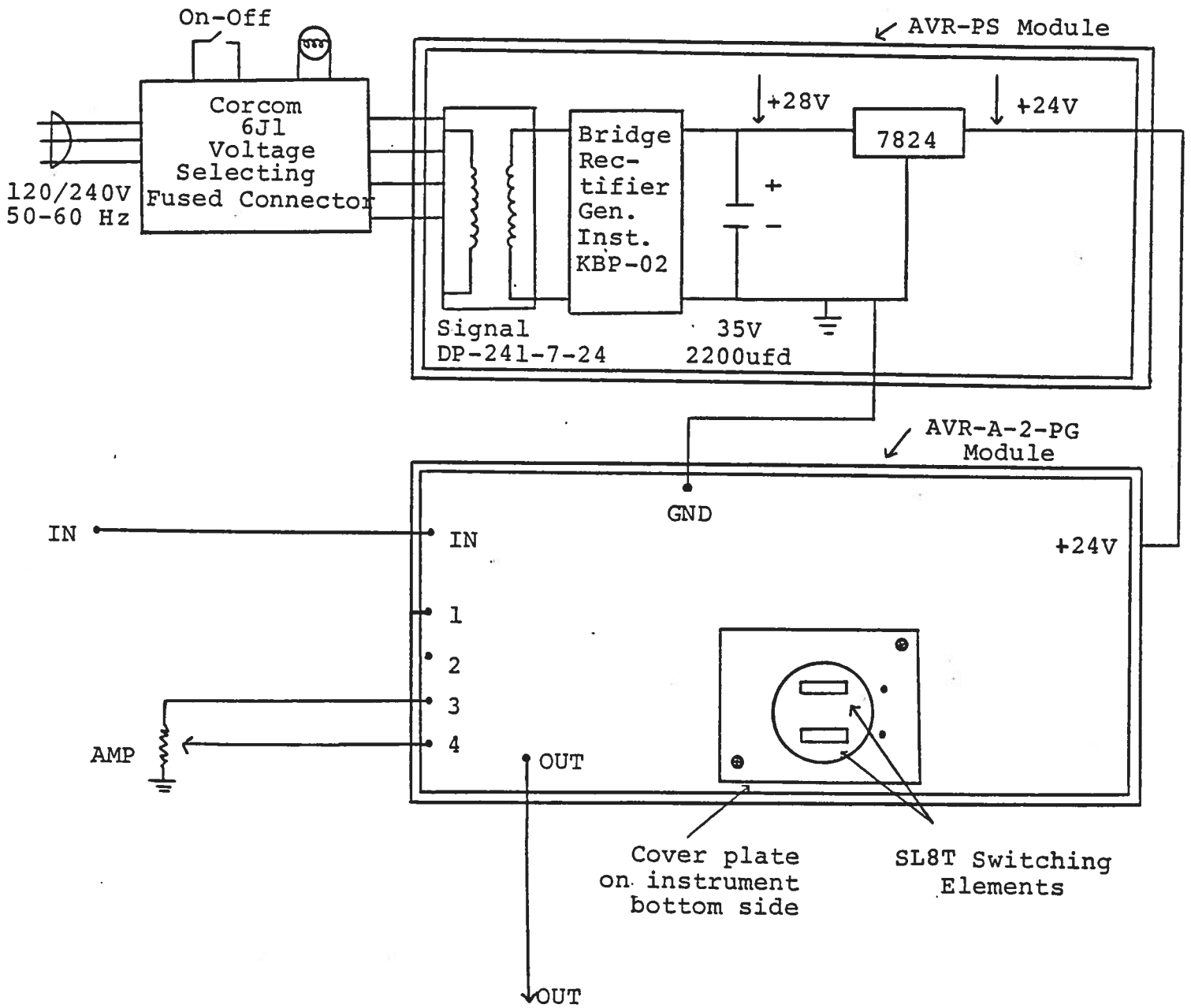
8) For additional assistance:

Tel: (613) 226-5772

Fax: (613) 226-2802

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

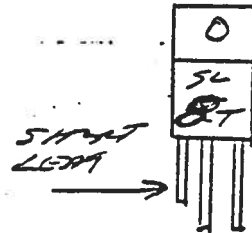
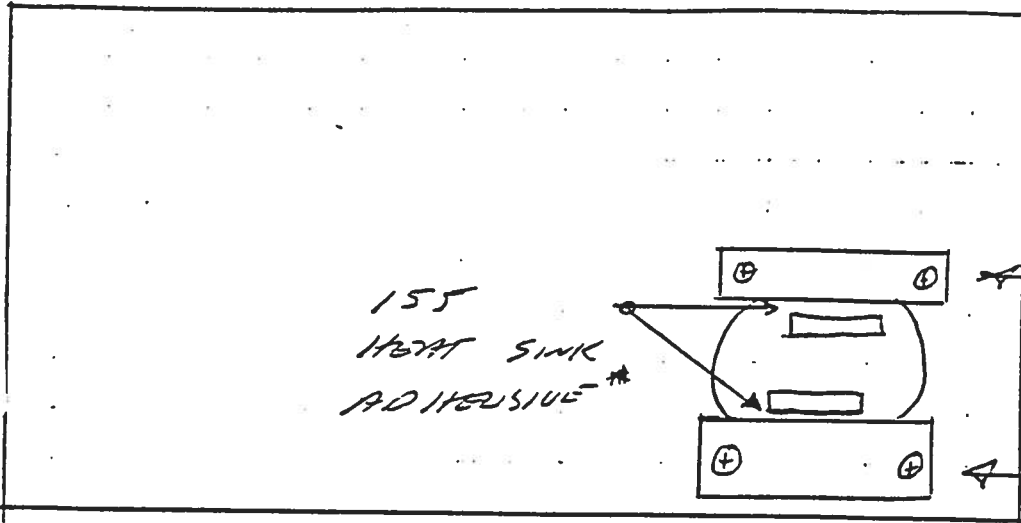
The modules are interconnected as shown in Fig. 4.

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.

AVR-A-2-PS

SLBT HEAT SINK



March 3/98

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