AVTECH ELECTROSYSTEMS LTD.
NANOSECOND WAVEFORM ELECTRONICS

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INSTRUCTIONS

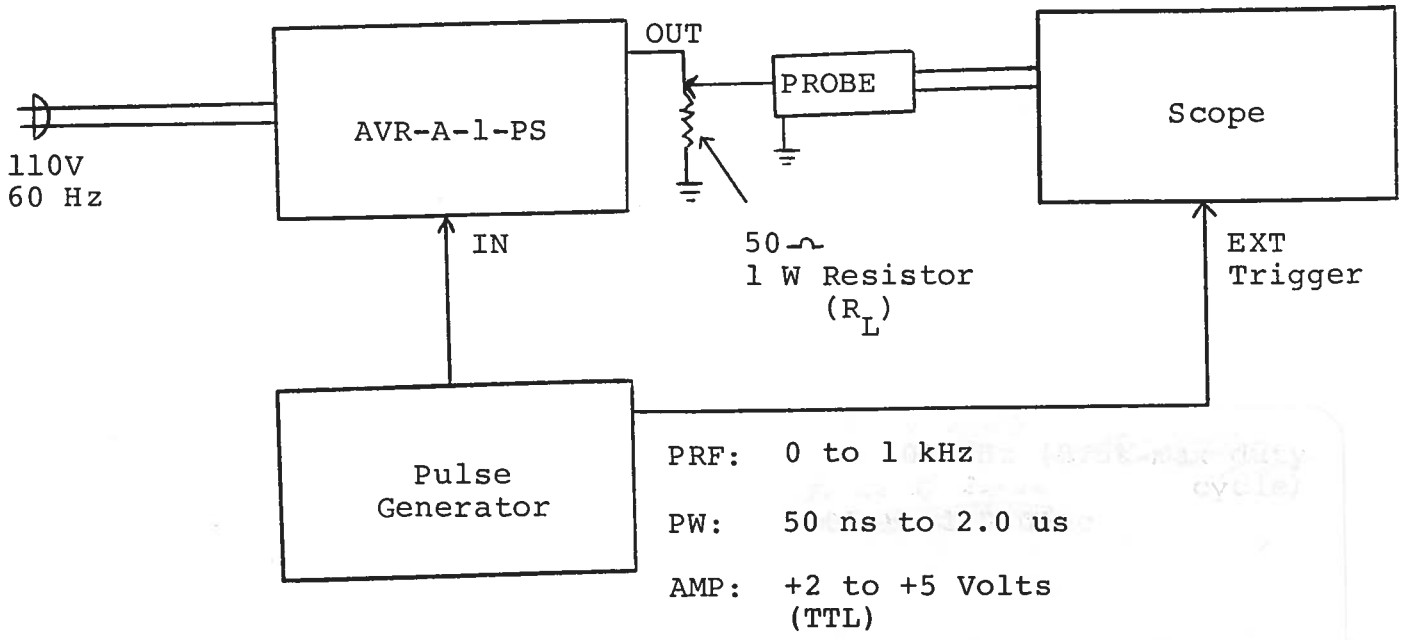
MODEL AVR-A-1-PS-P-SU1 PULSE GENERATOR

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



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 10 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.

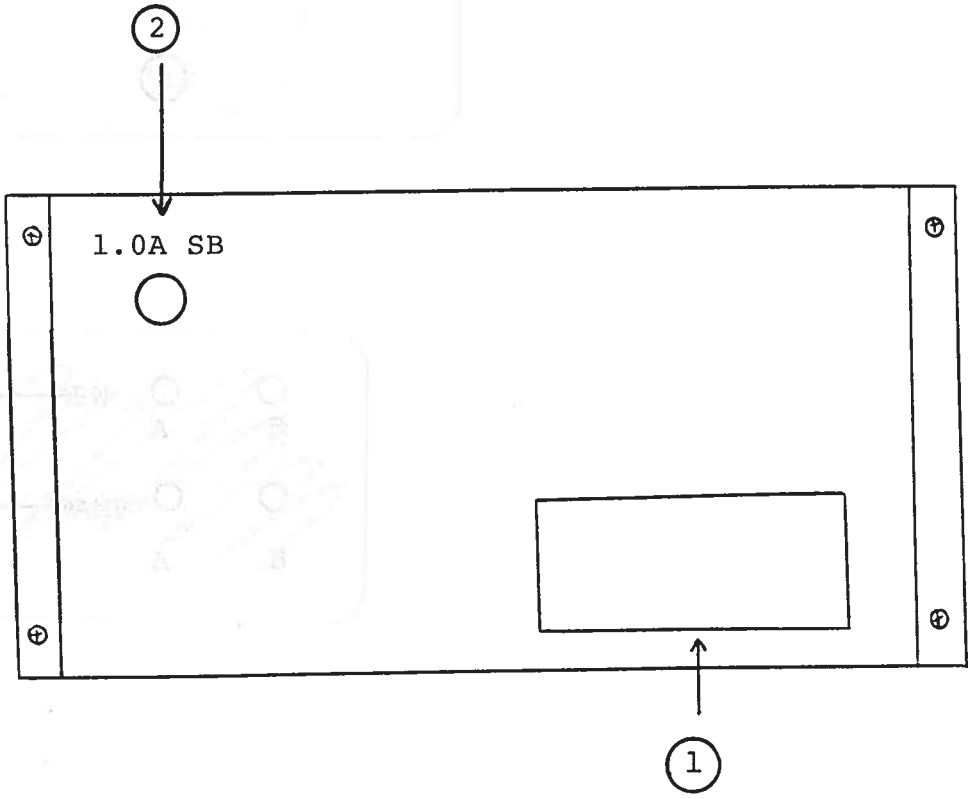
2) The output PRF is equal to the input trigger pulse PRF.

3) The output pulse width is 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) CAUTION: Care should be taken to not operate with an output pulse width greater than 2 us as prolonged operation in this mode may very well result in equipment failure.

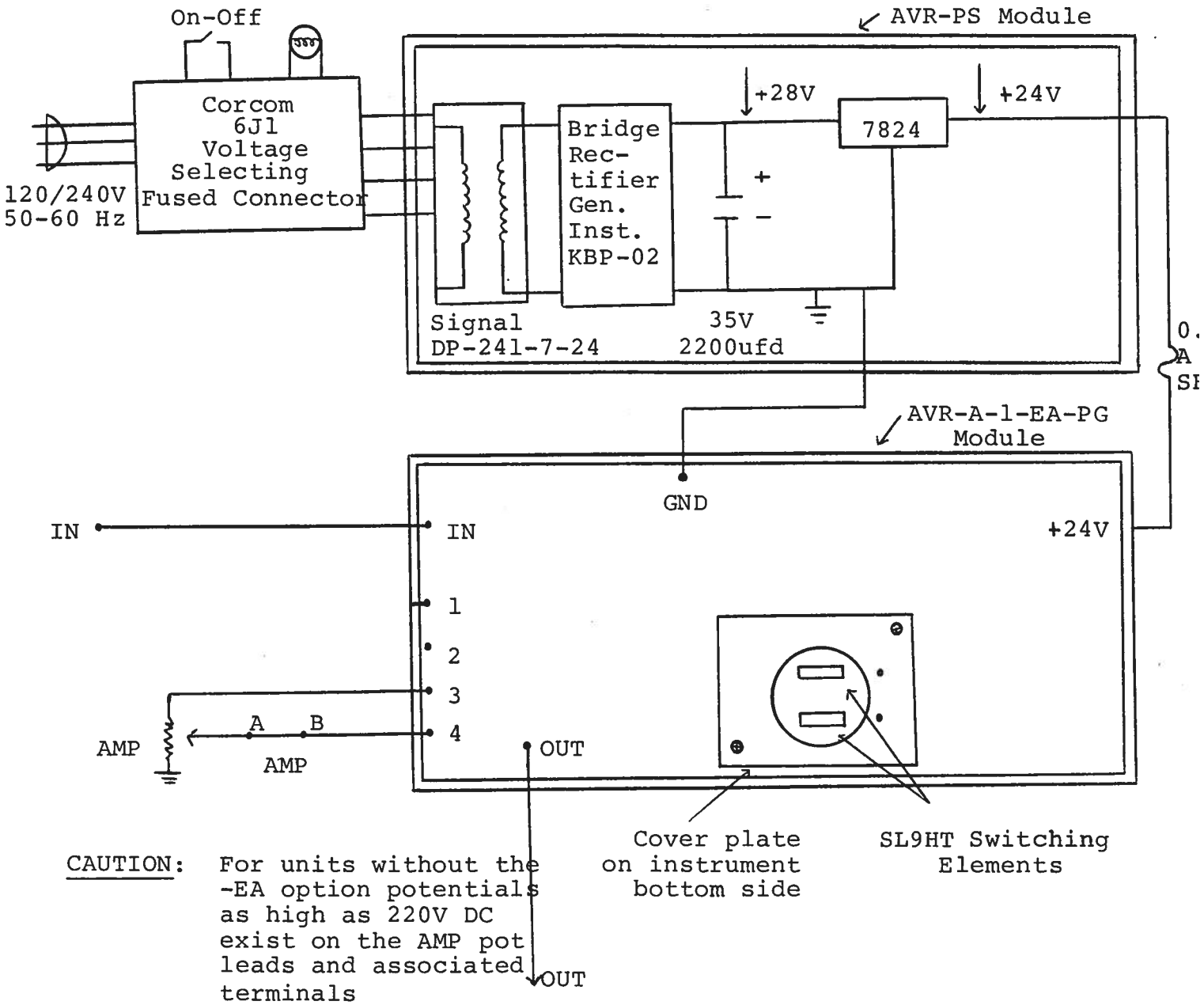
Fig. 3 BACK PANEL CONTROLS



(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 (0.25 A SB).

(2) 1.0A SB. This fuse limits the DC prime power supplied to the output stage and will blow in the case of severe overloading.

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

1) The AVR unit consists of three basic components or modules:

a) Metal chassis
b) AVR-PS module (Power Supply)
c) AVR-PG module (Pulse Generator)

The modules are interconnected as shown above.

2) If the unit malfunctions, first check the rear panel 1.0A SB fuse and then disconnect from the 60 Hz supply and the trigger source and remove the four Phillips screws on the back panel of the unit. With the screws removed, the top cover may be slid off.

3) Reconnect to the 60 Hz source and check the voltage on the line connecting the AVR-PS output to the +24 V pin of the AVR-PG module. A voltage of +24 volts should be recorded. If the voltage is substantially less than +24 volts, disconnect the 60 Hz source and disconnect the line from the +24 volt pin. Connect a 50 ohm 8 watt resistance to the output of the AVR-PS module. Reconnect to the 60 Hz source and measure the voltage across this resistor. A voltage of +24 volts should be indicated. If the voltage is substantially less than +24 volts the AVR-PS module is defective and should be either repaired or replaced. If the measured voltage is equal to +24 volts then the SL9HT switching elements in the AVR-PG module have probably failed. The SL9HT switching elements are easily replaced by removing the cover plate on the instrument bottom side and extracting the SL9HT switching elements from their sockets using a pair of needle nose pliers. Before attempting this first insure that the prime power is off and also briefly ground the metal tabs on the SL9HT elements to the chassis as the bypass capacitors may be charged to 225 volts. Replacement SL9HT units must be ordered directly from Avtech. When reinstalling the SL9HT units in their sockets, insure that the shortest of the three terminals is adjacent to the black dot on the AVR-PG chassis.

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February 25, 1993.

Neil Shafer
Stanford University
Box 50 Mudd
Stanford, CA 94305-5080

Dear Neil:

In reply to your FAX of February 23, we recommend that you use our 200 Volt Model AVR-A-1-PS-P-SU1 followed by our Model AVX-MRA2 matching transformer which will boost the maximum output to 400 Volts to 200 Ohms.

I am pleased to provide the following price and delivery quotations:

A)	Model designation:	AVR-A-1-PS-P-SU1.
	Output amplitude:	0 to +200 Volts to 50 Ohms. One turn control.
	Output pulse width:	50 ns to 2.0 us. Output pulse width equals input TTL trigger pulse width.
	Rise, fall time:	$\leq$ 10 ns.
	Propagation delay:	$\leq$ 25 ns. Note: A propagation delay of 10 ns is not possible.
	Rep rate:	0 to 1 kHz. Output rep rate equals TTL trigger rep rate.
	Rise, fall jitter:	$\leq$ 100 ps.
	Other:	See standard AVR-A-1-PW-PS, pages 44 and 45, Cat. No. 8.

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	Price:	$2,280.00 US each, FOB destination. Note that this price includes our standard 5% academic discount.
	Delivery:	3 weeks.
B)	Model designation:	AVX-MRA2.
	Price:	$594.00 US each, FOB destination. This price includes our standard 5% academic discount.
	Delivery:	3 weeks.

Thank you for your continuing interest in our products. Please call me again if you require any additional information or modifications to the above quotations.

Yours truly,

Dr. Walter Chudobiak
Chief Engineer

WC:pr
Encl. Cat. No. 8
Cat. No. 8S1
Price list