AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
ENGINEERING - MANUFACTURING

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INSTRUCTIONS

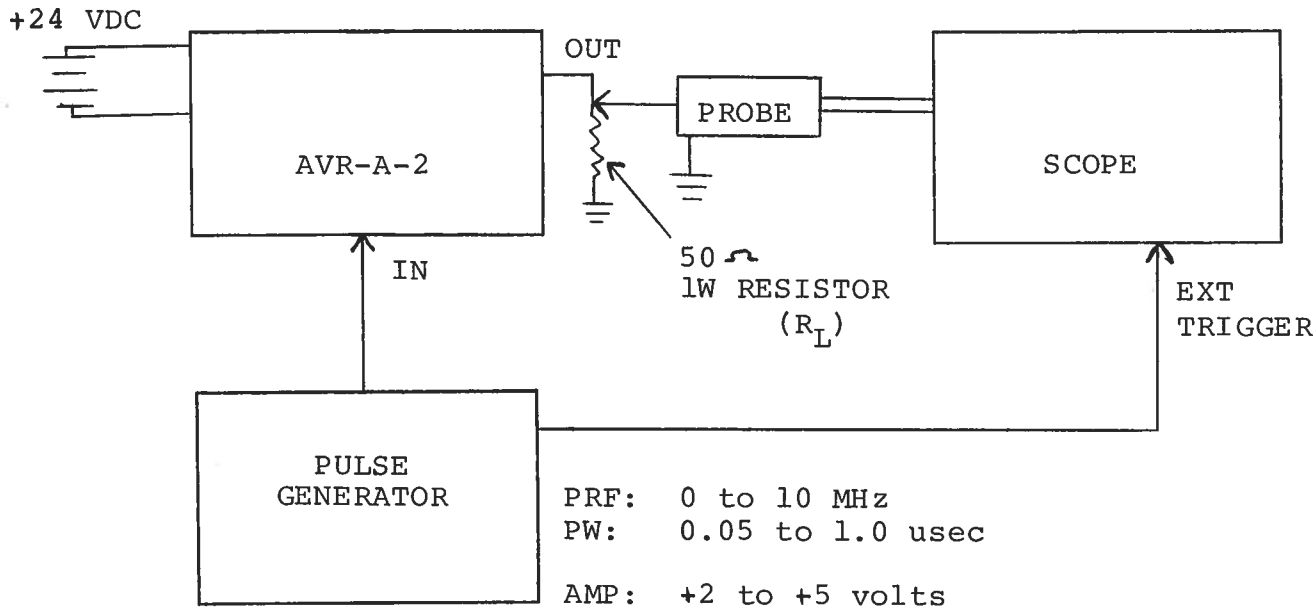
MODEL AVR-A-2 PULSE GENERATOR

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 5 nsec a fast oscilloscope (at least 200 MHz) should be used to display the waveform.

2) The magnitude of the output pulse is controlled by the front panel one turn pot (AMP). Maximum clockwise rotation of the pot provides the maximum output. For units with the EA option, the output amplitude is controlled by 0 to +10 volt applied to the AMP solder terminal ($R_{IN} \geqslant 10K$).

3) The output pulse width is controlled by the one turn PW pot. For units with the EW option, the output pulse width is controlled by 0 to +10 volt applied to the PW solder terminal ($R_{IN} \geqslant 10K$).

4) Care should be taken to not operate with a duty cycle greater than 20% as prolonged operation in this mode may very well result in equipment failure. Also, the maximum PRF of 10 MHz 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, and in severe cases, the output stage of the unit may be damaged. The maximum allowable PW as a function of PRF for a 50 ohm load is shown in Fig. 1.

5) In the event of severe overloading, the output switching elements (Avtech Part No. SL8TS) may fail. The SL8TS units are readily replaced by removing the four screws which affix the small cover plate to the bottom of the AVR chassis. The four 2-56 counter sink screws are then removed. The SL8TS units may then be extracted using needle nosed pliers. Note that the SL8TS units are bonded to small aluminum heat sink using an insulating thermally conductive adhesive (WAKEFIELD TYPE 155). Note also that the heat sink and the SL8HS units are electrically isolated. When replacing the SL8HS units take care to ensure that the short lead is placed adjacent to the black dot on the AVR chassis.

6) To reverse the output polarity of the AVR-A-2 unit, connect the AVX-3 module to the output. A pulse of the opposite polarity is then provided at the output of the AVX-3 module. (PN option).

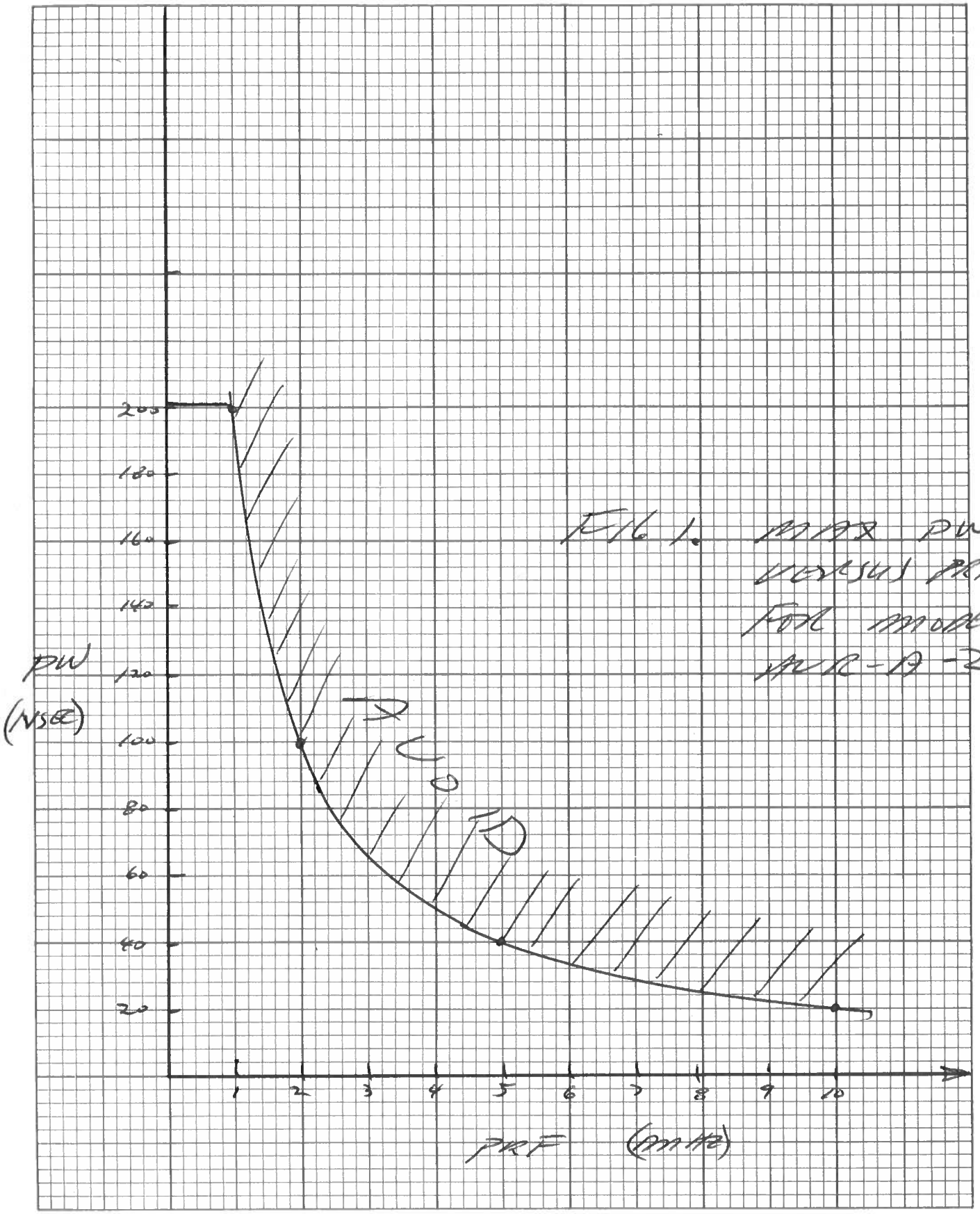


FIG 1. MAX PW VERSUS PRF FOR MODEL MPC-19-2
PW (MSEC)
200
180
160
140
120
100
80
60
40
20
1
2
3
4
5
6
7
8
9
10
PRF (PPS)
DUTY

02.04.88

- PN
- EA
- EW
- PW