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INSTRUCTIONS

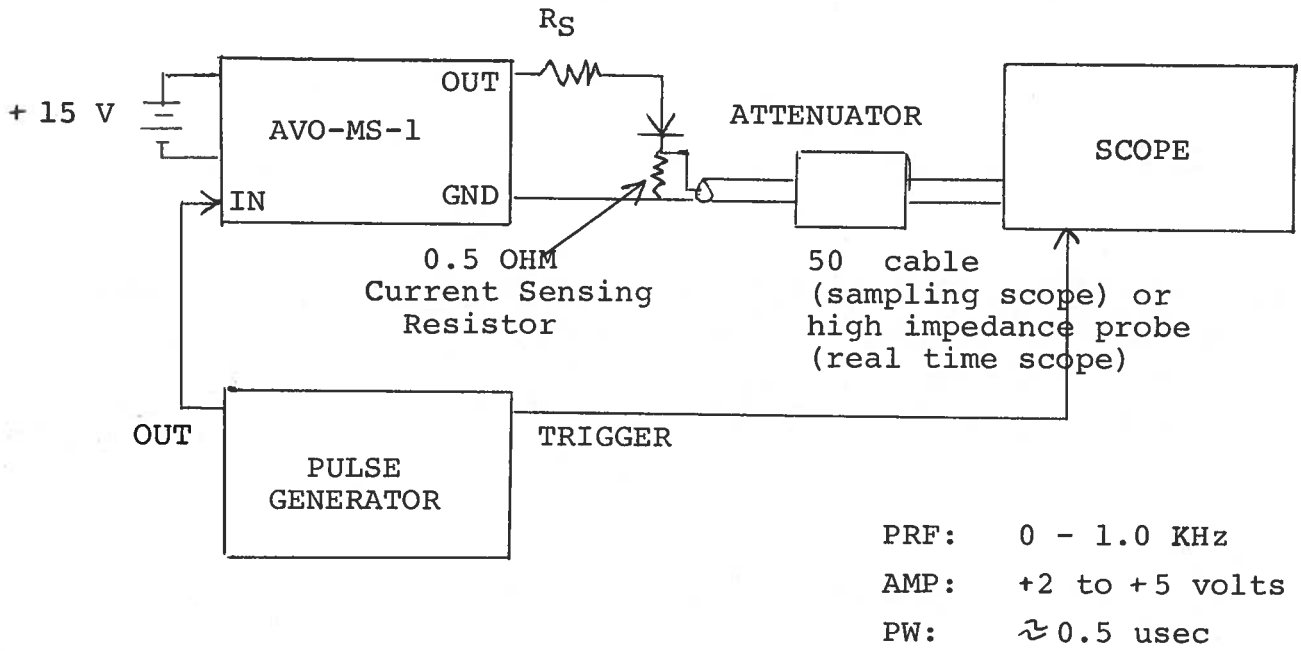
Model AVO-MS-1 Pulse Generator
(LA 430 Diode Pulser)

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, 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 guarantee is either expressed or implied.

AVO-MS-1 TEST ARRANGEMENT



1) The laser diode is connected in series with a current limiting resistor ($0 < R_S < 10$ ohm) between the GND and OUT terminals on the front panel. In order to monitor the diode current a 0.5 ohm current sensing resistor may be connected in series with the diode and resistor R_S . ¼ watt carbon film or carbon composition resistors may be used but all leads must be as short as possible (< 0.1 in). Solder leads directly to the GND and OUT terminals.

2) In general the pulse generator trigger delay control should be set in 0.1 to 1.0 usec range. Other settings should be as shown in the above diagram.

3) Either a sampling oscilloscope or a high speed real time oscilloscope (BS > 200 MHz) may be used to monitor the voltage across the current sensing resistor and therefore the laser diode current. If a sampling scope is used at least 40 db attenuation should be used to insure a scope input of less than 1.0 volts. A real time scope may be used to monitor the voltage across R_S to ground. CAUTION: Peak pulse voltages as high as 300 V appear at the OUT terminals.

4) The amplitude of the diode current is determined by the setting of the rear panel AMP pot control, the series resistor R_S + 0.5 ohm, and by the series resistance of the laser diode. The performance check results given in the following page were obtained using $R_S = 0$ ohm and a 5.1 ohm ¼ W resistor to simulate a laser diode load (LA 430). With this resistance a peak current of 40 Amperes was obtained with the pot set clockwise. A peak output voltage of 240 volts was measured across the 5.1 + 0.5Ω resistance. To obtain lower load currents either insert series resistance R_S ($0 < R_S < 10$ ohm) or turn AMP control counterclockwise (or both).

5) For different diode mountings the GND terminal may be unscrewed (4-40 thread) and replaced with other fixtures. Alternatively ground fixtures may be machined on the flange protruding from the base of the chassis. Note: Do not attempt to remove or modify the OUT terminal.

6) Warning: The unit may fail if triggered at a PRF exceeding 1 KHz.

7) For initial trials with the LA430 diode, it is suggested that a R_S of several ohms (2.2 to 6.8Ω) and a 0.5 ohm current sensing resistor be soldered in series with the diode. The AMP control on the AVO unit should initially be set max counter clockwise (min. output) and then gradually turned clockwise while monitoring the current through the 0.5 ohm resistor. If the maximum attainable current is less than desired, then reduce R_S as required (possibly to 0 ohms) to reach desired current (up to 40 Amps).