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INSTRUCTIONS

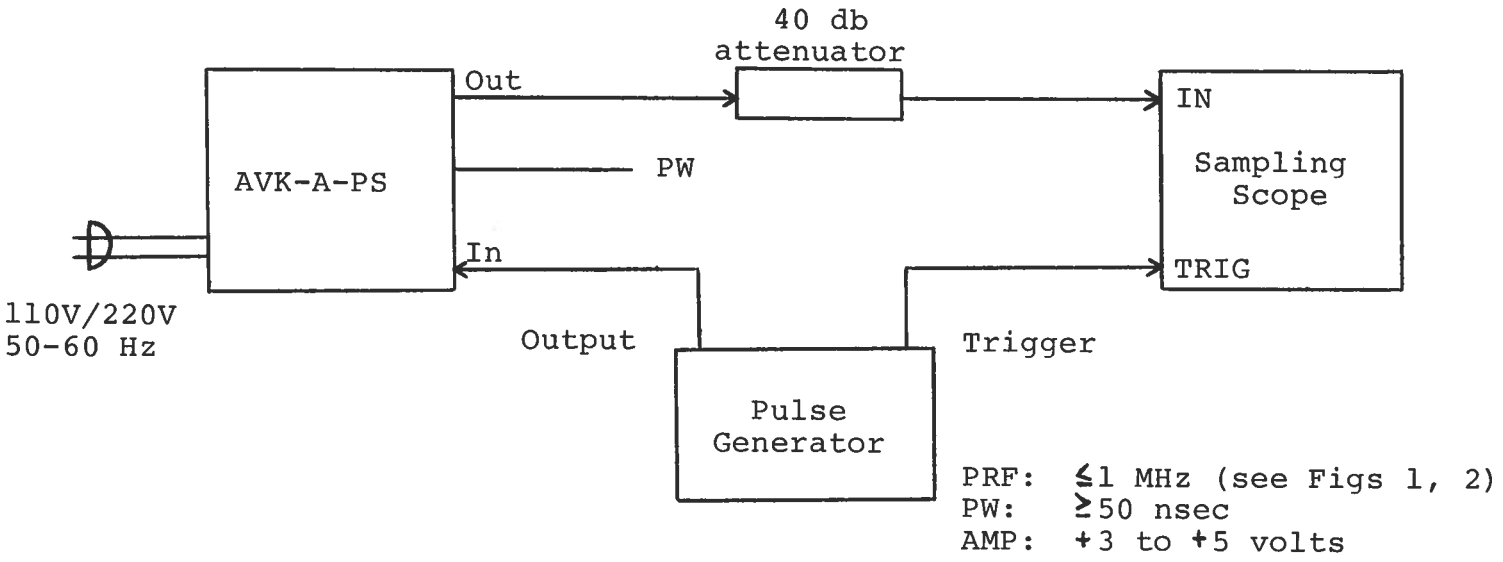
MODEL AVK-A-PS PULSE GENERATOR

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 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.

PULSE GENERATOR TEST ARRANGEMENT



Notes:

1) The bandwidth capability of components and instruments used to display the pulse generator output signal (attenuators, cables, connectors, etc.) should exceed ten gigahertz.

2) The use of a 40 db attenuator will insure a peak input signal to the sampling scope of less than one volt.

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

4) The Model AVK output pulse width is a linear function of the length of open circuited coaxial cable connected to the "PW" port (see Fig. 1). The open circuited delay line should be formed from high-quality semi-rigid 50 ohm coaxial cable (eg. 0.085 inch copper 50 ohm semi-rigid). Miniature flexible coaxial cable such as RG 174 may be used but may result in a degraded fall time. In the absence of an external cable connected to the tune port, Model AVK outputs a 2 nsec pulse.

5) The minimum pulse repetition frequency period is related to the delay line cable length (or pulse width) as shown in Fig. 2. If the PRF period for a given cable length is less than that specified in Fig. 2, the output pulse amplitude will be less than the specified value and prolonged operation in this mode could result in damage to the unit. Therefore, operation in or beyond the shaded region should be avoided.

6) The Model AVK pulse generator can withstand an infinite VSWR on the output port.

7) The output pulse amplitude is controlled by means of the front panel one turn AMP control. The pulse width may change by several nanoseconds as the output amplitude is reduced from maximum to minimum. Therefore it is convenient to first set the desired amplitude and then set the desired pulse width.

8) 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.

9) The P OUT port provides a positive output pulse. To obtain a negative output pulse, connect the P OUT port to the N IN port using a short length of 50 ohm semi-rigid cable. A negative pulse is then obtained at the N OUT port. (-PN option).

10) To DC offset the output pulse connect a DC power supply set to the required DC offset value to the terminals marked O.S. The maximum attainable DC offset voltage is ±50 volts (option).

11) MONITOR OUT M. Provides an attenuated (x10) coincident replica of the main positive output pulse to fifty ohms (option).

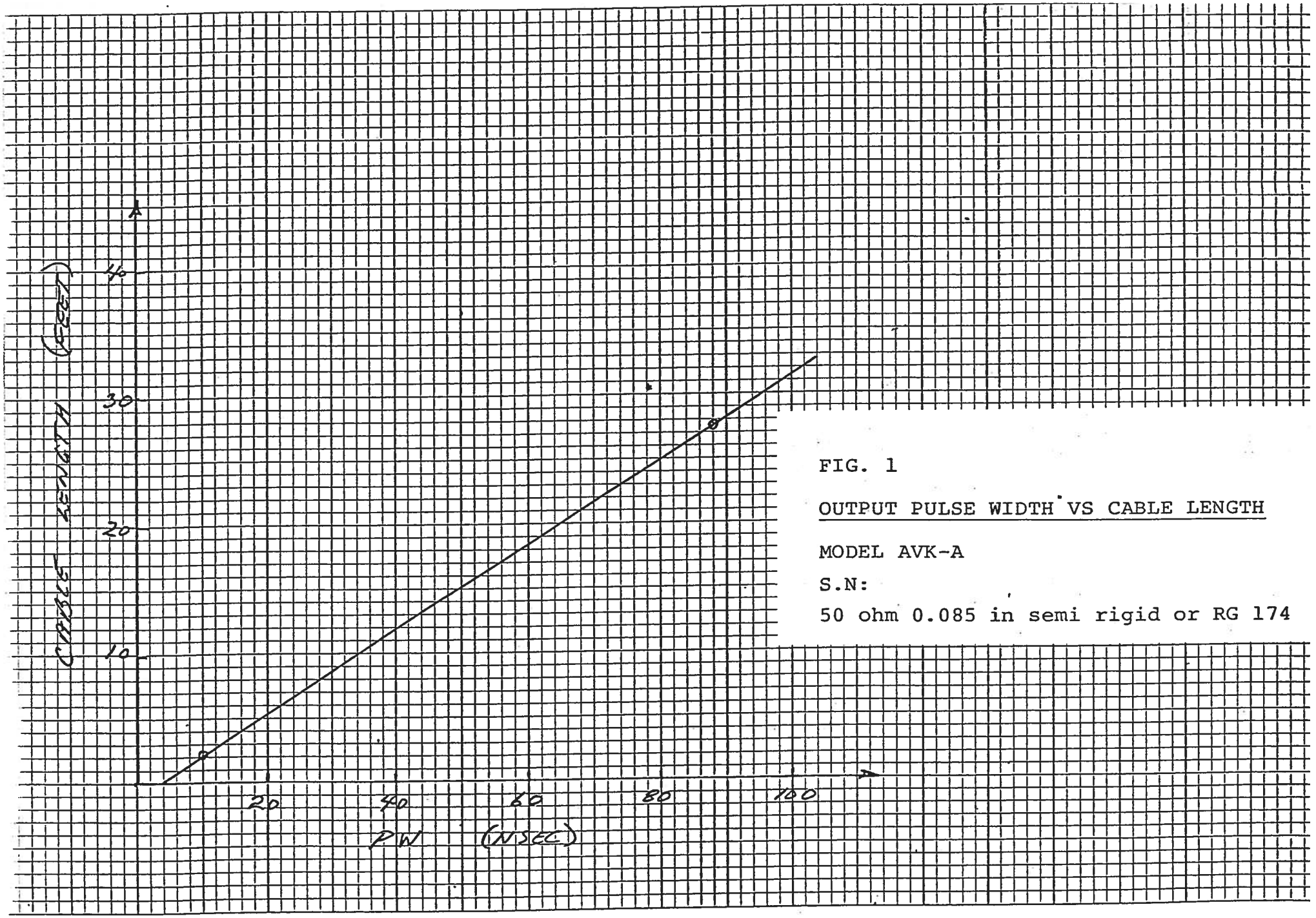


FIG. 1

OUTPUT PULSE WIDTH VS CABLE LENGTH

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50 ohm 0.085 in semi rigid or RG 174

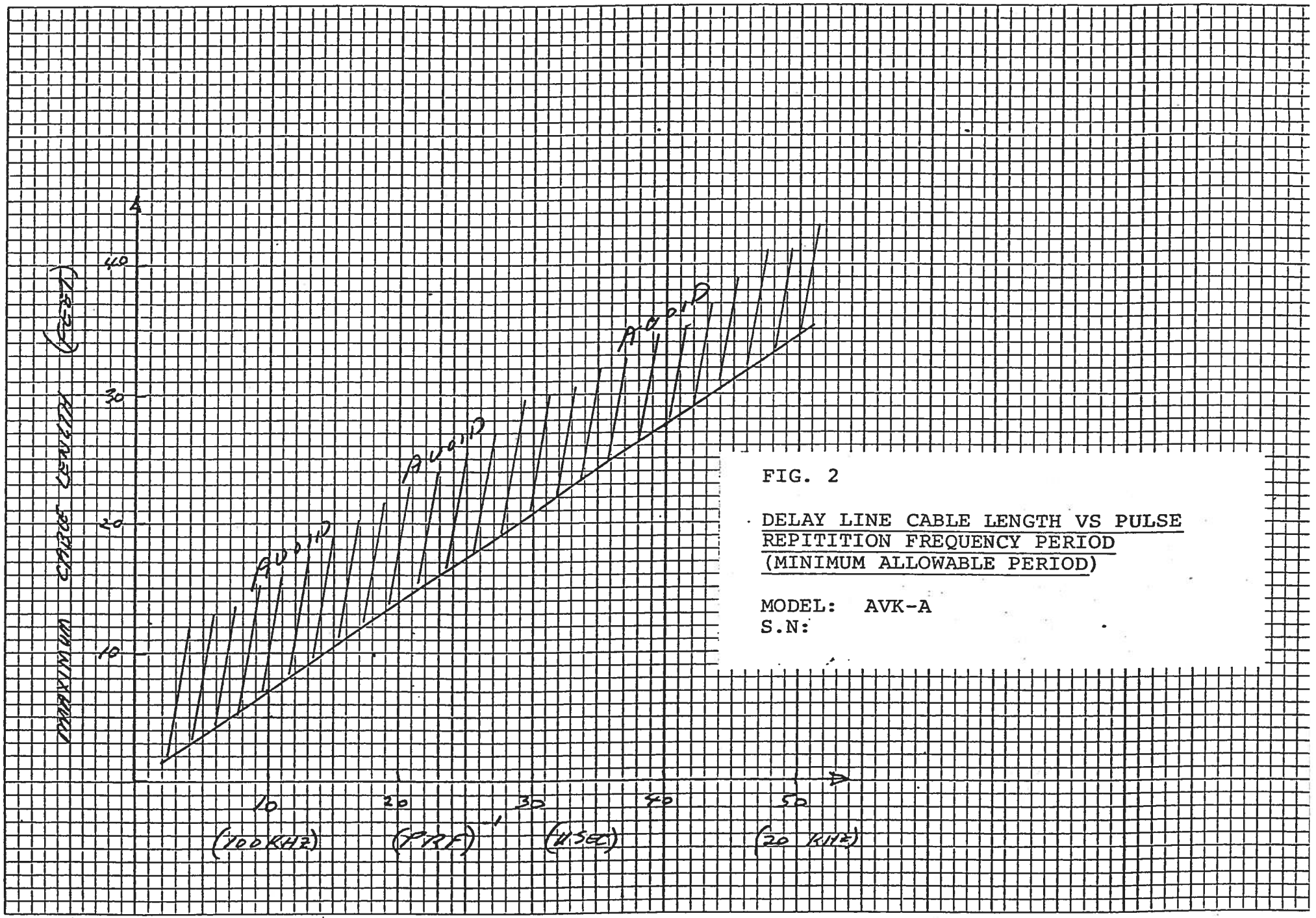
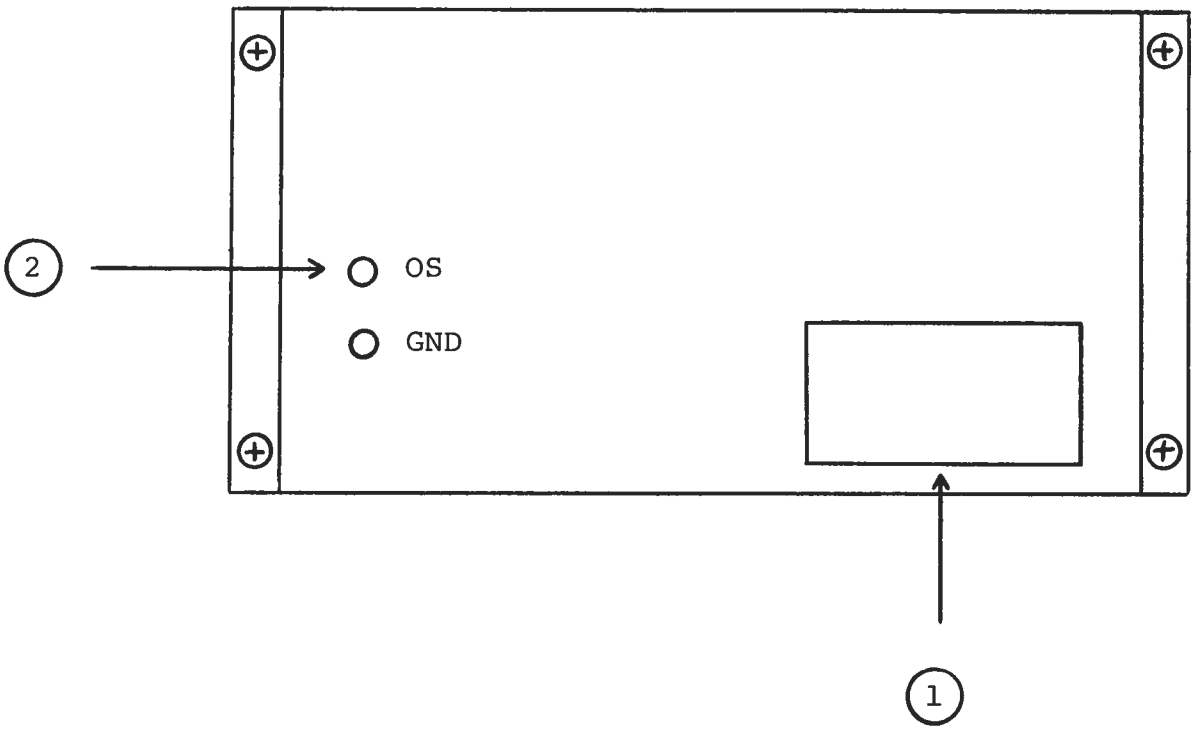


FIG. 2

DELAY LINE CABLE LENGTH VS PULSE REPITITION FREQUENCY PERIOD (MINIMUM ALLOWABLE PERIOD)

MODEL: AVK-A
S.N:

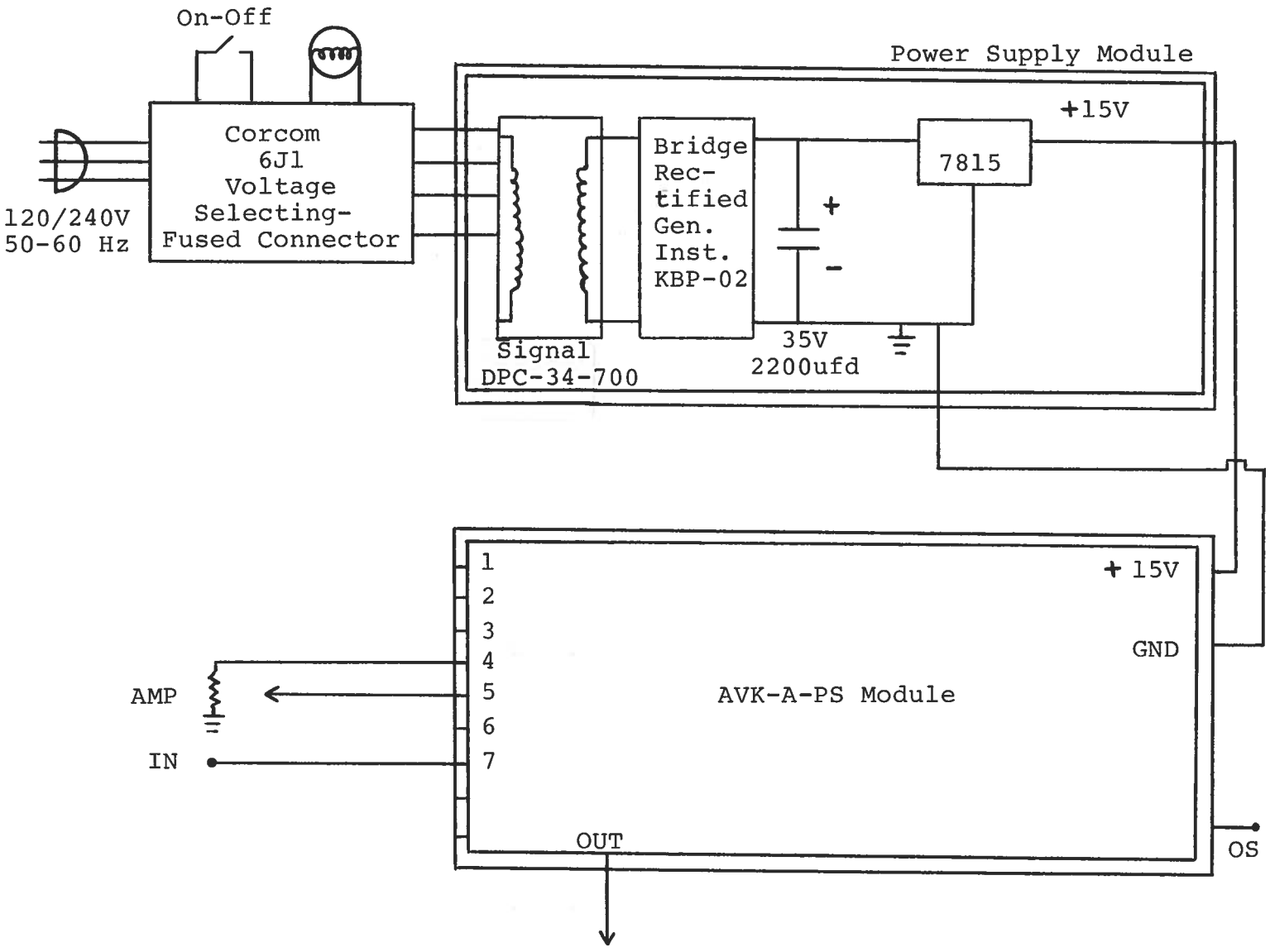
BACK PANEL CONTROLS



(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.

(2) DC OFFSET Input. to DC offset the output pulse, connect a DC power supply set to the desired offset value to these terminals. The maximum allowable DC offset voltage is ±50 volts. (option).

SYSTEM BLOCK DIAGRAM



SYSTEM DESCRIPTION AND REPAIR PROCEDURE

The AVK-A-PS consists of a pulse generator module (AVK-A-PG) and a power supply board which supplies +15 volts (600 mA max) to the pulse generator module. In the event that the unit malfuctions, remove the four Phillips screws on the back of the unit. The top cover may then be slid off. Measure the voltage at the +15 V pin of the PG module. If this voltage is substantially less than +15 volts, unsolder the line connecting the power supply and PG modules and connect 50 ohm 10 W load to the PS output. The voltage across this load should be about +15 V DC. If this voltage is substantially less than 15 volts the PS module is defective and should be repaired or replaced. If the voltage across the resistor is near 15 volts, then the PG module should be replaced or repaired. The sealed PG module must be returned to Avtech for repair (or replacement).

Schroff 02.11.85

- PN
- OS
- M