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INSTRUCTIONS

MODEL AVMM-2-PS-TR-N 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 assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

TECHNICAL SUPPORT

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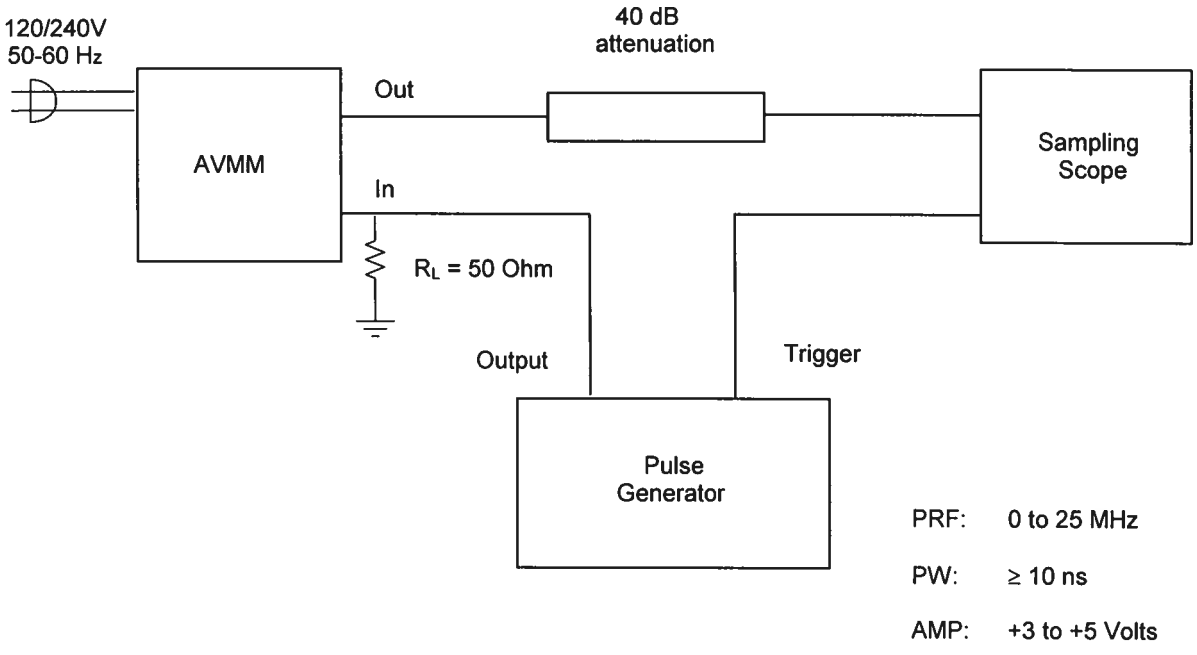
TABLE OF CONTENTS

Manual Reference: Q:\office\instructword\Avmm\AVMM-2-PS-TR-N-eda-fig.doc, created January 8, 2001

FIG. 1: MODEL AVMM-PS PULSE GENERATOR TEST ARRANGEMENT



GENERAL OPERATING INSTRUCTIONS

1) The bandwidth capability of components and instruments used to display the pulse generator output signal (attenuators, cables, connectors, etc.) should exceed 5 gigahertz.

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

3) An external clock may be used to control the output PRF of the unit by applying a 10 ns (or wider) TTL level pulse to the TRIG BNC connector input. The AVMM unit triggers on the rising edge of the input trigger pulse.

4) The output pulse width is controlled by means of the front panel one-turn PW control. The control should initially be set maximum clockwise and the pulse width adjusted using an oscilloscope. Rotation of the PW pot causes the position of the falling edge of the pulse to change. For the PRF range of 0 to 25 MHz, the output pulse width is variable over the range of 0 to 10 ns. CAUTION: The output pulse width is PRF-dependent and so the PW reading given by the dial will not be valid at all PRF settings.

5) The output pulse amplitude is controlled by means of the front panel one-turn AMP control.

6) To DC offset the output pulse connect a DC power supply set to the required DC offset value to the back panel terminals marked O.S. The maximum attainable DC offset voltage is ±50 volts (for units without the OT or EO option only).

7) For units with the OT offset option, the output DC offset level is varied from –5 to +5V (to 50 ohm) by the front panel OFFSET one turn control. The DC offset may be turned off using the rear panel OS ON-OFF toggle switch. (OT option).

8) The unit provides a 300 ps rise time at the OUT port. The rise and fall time can be set at approximately 0.3, 0.4, 0.7, 1.2 and 2.0 ns using the five position front panel TR switch. To use the switch connect the OUT port to the TR IN port. The variable rise time output is then available at the TR OUT port.

9) WARNING: Model AVMM-PS may fail if triggered at a PRF greater than 25.0 MHz.

10) Dual Polarity Option. To invert the output of the AVMM unit, connect the AVX-2-T unit to the OUT port. An inverted pulse is then obtained at the OUT port of the AVX-2-T unit. To offset the inverted pulse, apply the desired DC potential to the DC terminal on the AVX-2-T module. Note that a male-to-male SMA sex changer must be used to connect the AVX-2-T module to the OUT SMA terminal.

11) The AVMM-PS unit can be converted from 120 to 240V 50-60 Hz operation by adjusting the voltage selector card in the rear panel fused voltage selector-cable connector assembly.

12) For additional assistance:

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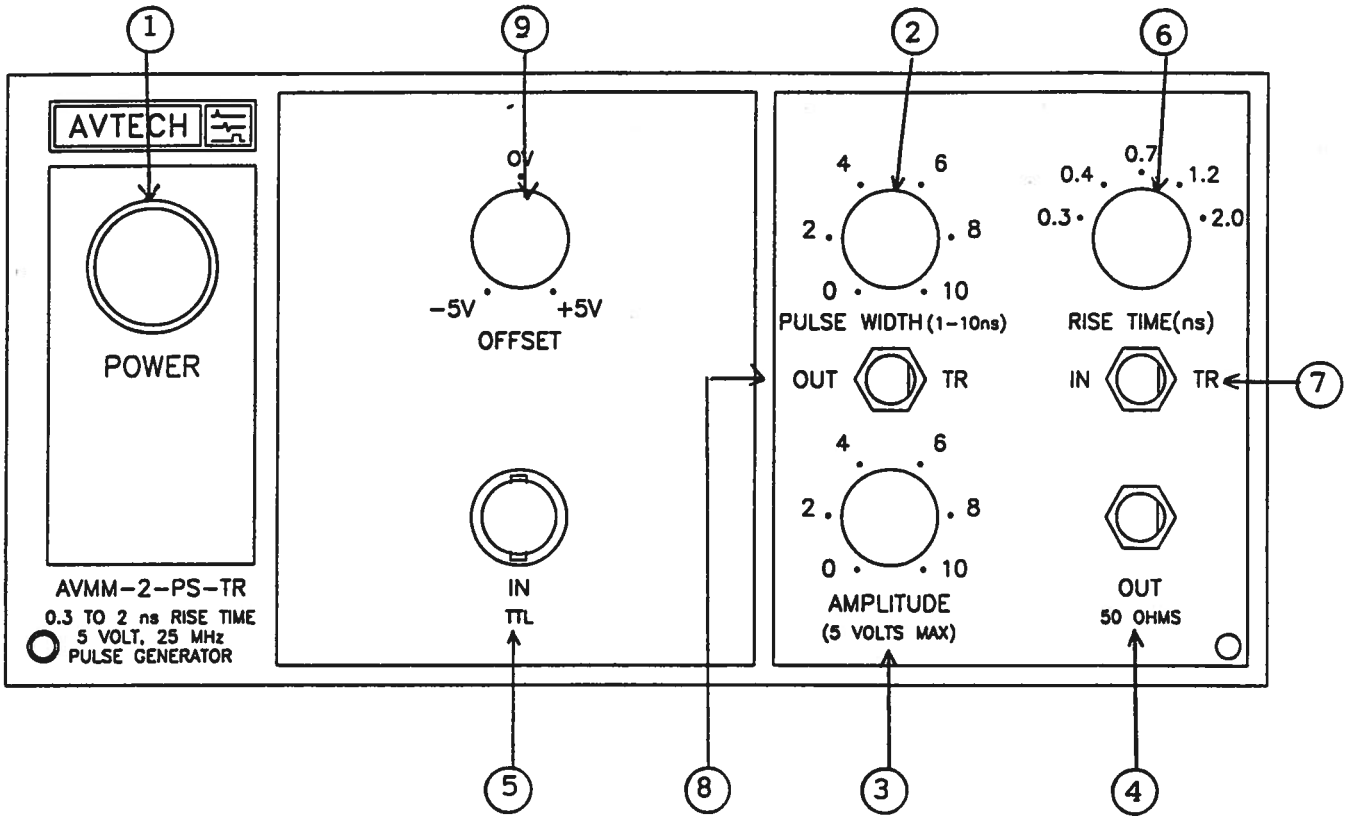
FIG. 2: FRONT PANEL CONTROLS



FRONT PANEL CONTROLS

(1) ON-OFF Switch. Applies basic prime power to all stages.

(2) PW Control. A one turn control which varies the output pulse width.

(3) AMP Control. A one turn control which varies the output pulse amplitude from 0 to max output to a fifty ohm load.

(4) OUT Connector. SMA connector provides 300 ps rise time output to a fifty ohm load.

(5) TRIG IN. When the INT-EXT switch is in the EXT position, a TTL level trigger pulse is applied to the BNC connector (PW $\geq$ 10 ns).

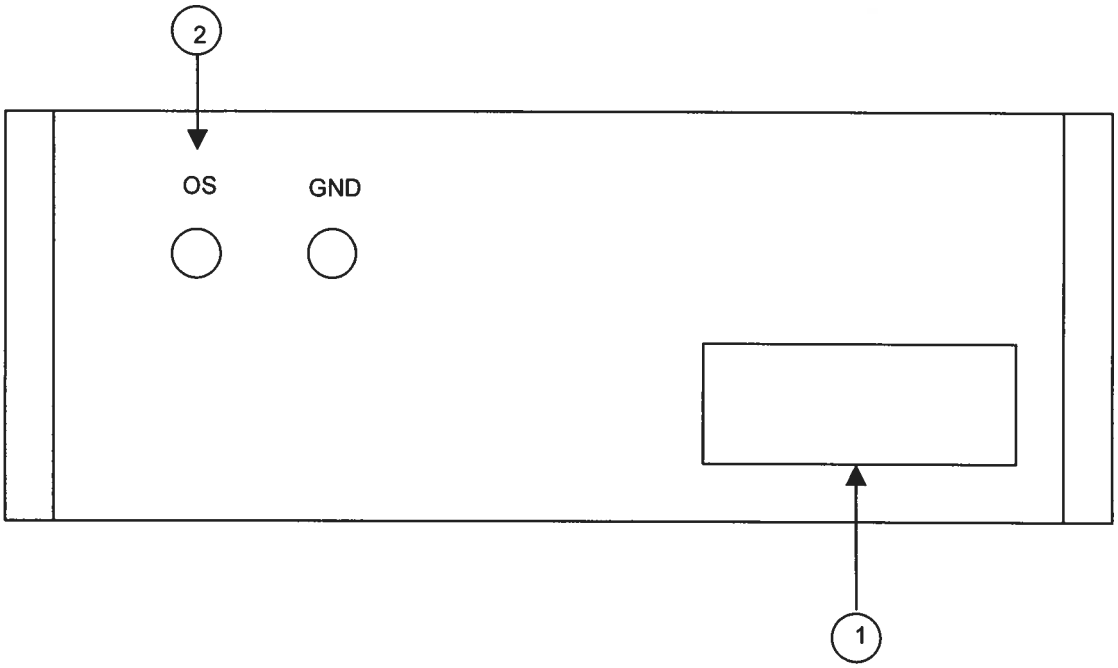
(6) RISETIME TR (Option). A five position switch which provides output rise and fall times of about 0.3, 0.4, 0.7, 1.2 and 2.0 ns.

(7) TR IN. To use variable rise time option connect OUT port to TR IN port.

(8) TR OUT. With OUT port connected to TR IN port, provides output to 50 ohm load.

(9) OFFSET. For units with the OT offset option, the output DC offset level is varied from –5 to +5V (to 50 ohm) by the front panel OFFSET one turn control. The DC offset may be turned off using the rear panel OS ON-OFF toggle switch. (OT option).

FIG. 3: BACK PANEL CONTROLS



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.

For AC line voltages of 110-120V, the power selector card should be installed so that the "120" marking is visible from the rear of the instrument.

For AC line voltages of 220-240V, the power selector card should be installed so that the "240" marking is visible from the rear of the instrument.

If it is not set for the proper voltage, remove the fuse and then grasp the card with a pair of pliers and remove it. Rotate horizontally through 180 degrees. Reinstall the card and the correct fuse.

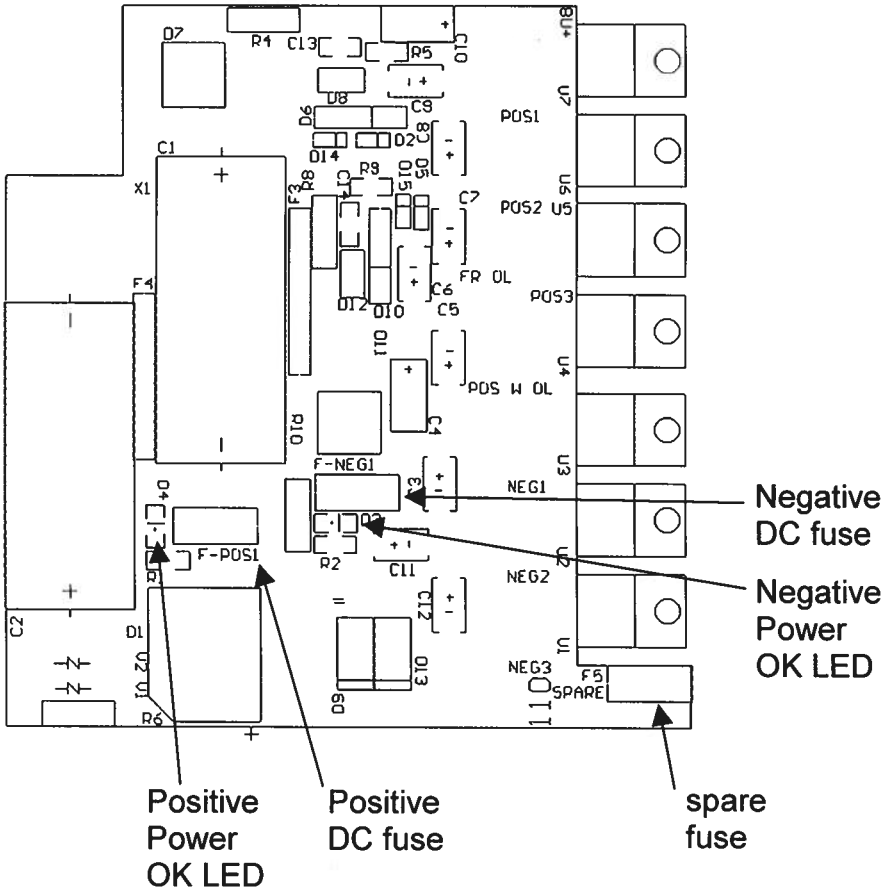
In the 120V setting, a 0.5A slow blow fuse is required. In the 240V setting, a 0.25A slow blow fuse is required.

(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. (±250 mA max.).

POWER SUPPLY AND FUSE REPLACEMENT

This instrument has three fuses (plus one spare). One, which protects the AC input, is located in the rear-panel power entry module, as described in the "Rear Panel Controls" section of this manual. If the power appears to have failed, check the AC fuse first.

The other two fuses (plus one spare) are located on the internal DC power supply, as shown below:



The spare fuse may be used to replace one of the other fuses, if required.

The three fuses on this circuit board are 0.5A slow-blow fuses, Littlefuse part number R452.500. (This fuse can be ordered from Digikey, www.digikey.com. The Digikey part number is F1341CT-ND).

If you suspect that the DC fuses are blown, follow this procedure:

1. Remove the top cover, by removing the four Phillips screws on the top cover and then sliding the cover back and off.

2. Locate the two "Power OK" LEDs on the power supply circuit board, as illustrated above.

3. Turn on the instrument.

4. Observe the "Power OK" LEDs. If the fuses are not blown, the two LEDs will be lit (bright red). If one of the LEDs is not lit, the fuse next to it has blown.

5. Turn off the instrument.

6. If a fuse is blown, use needle-nose pliers to remove the blown fuse from its surface-mount holder.

7. Replace the fuse.

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