

INSTRUCTIONS

MODEL AVB1-5-PS MONOCYCLE 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 disassembled, 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

Phone: 613-226-5772 or 1-800-265-6681

Fax: 613-226-2802 or 1-800-561-1970

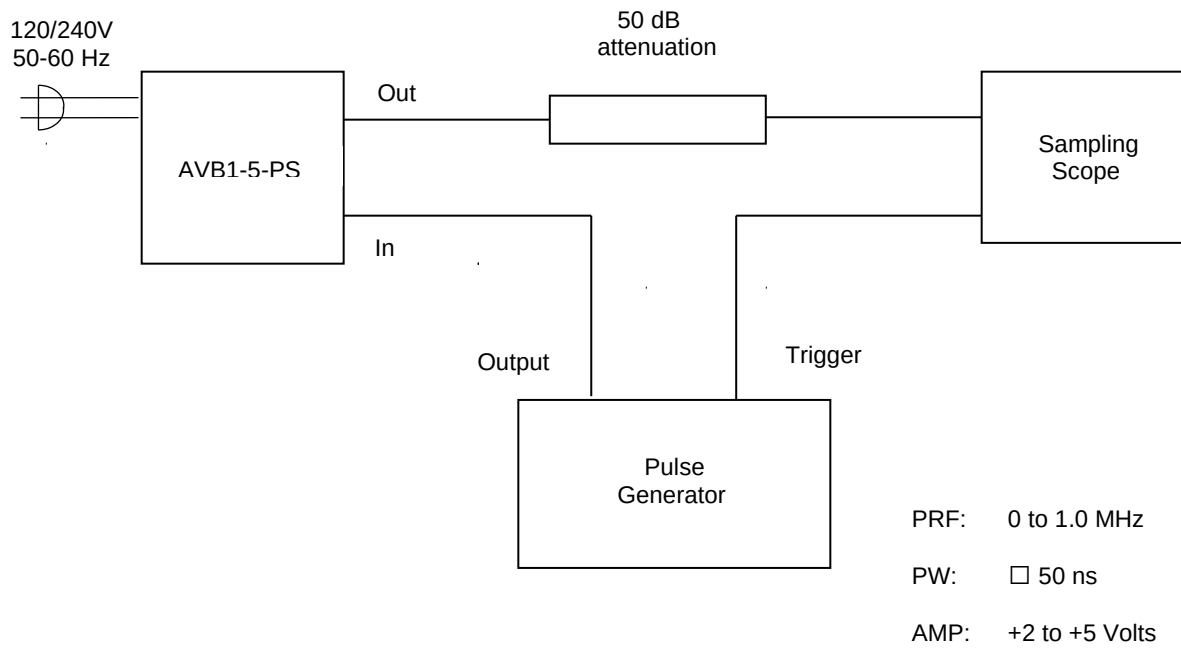
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Manual Reference: /fileserver1/officefiles/instructword/avb/AVB1-5-PSeda-fig.doc, created July 31, 1998

FIG. 1: PULSE GENERATOR TEST ARRANGEMENT

GENERAL OPERATING INSTRUCTIONS

- 1) The bandwidth capability of components and instruments used to display the monocycle generator output signal (attenuators, cables, connectors, etc.) should exceed 10 GHz.
- 2) The use of a 50 dB attenuator will insure a peak input signal to the sampling scope of less than one Volt.
- 3) In general, the pulse generator delay control should be set in the 100 ns range. Other settings should be as shown in the above diagram. The monocycle generator output is delayed with respect to the trigger input signal by about 30 ns (typically).
- 4) The monocycle generator can withstand an infinite VSWR on the output port (but requires a 50 Ohm load for proper operation).
- 5) The output frequency is set by the FREQUENCY A and FREQUENCY B controls. Initially, the FREQUENCY A control should be set mid range and the FREQUENCY B control set max clockwise and the amplitude should be set fully clockwise then, to obtain a particular frequency:
 - a) Rotate the FREQUENCY A control to set the pulse width of the positive pulse equal to one half the period of the desired frequency (eg. for 500 MHz, the pulse width should be set to 1.0 ns). Clockwise rotation of the FREQUENCY A control reduces the pulse width.
 - b) Rotate the FREQUENCY B control counter clockwise to line up the falling edge of the positive pulse with the rising edge of the negative pulse.
 - c) Final minor adjustments are then made to the two controls to perfect the shape of the sinusoid. Note that if the PRF is changed dramatically (or if the amplitude is varied) it will be necessary to re-adjust the two controls.
- 6) The output amplitude is controlled by the front panel one turn control and the rear panel two position "HIGH-LOW" switch. With the switch set in the "HIGH" position, the output amplitude is slightly higher ($\approx 10\%$) but the spurious level following the output may also be higher (particularly at reduced amplitudes). For some demanding applications it may be desirable to use attenuator pads on the output to control the output amplitude.

7) The 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.

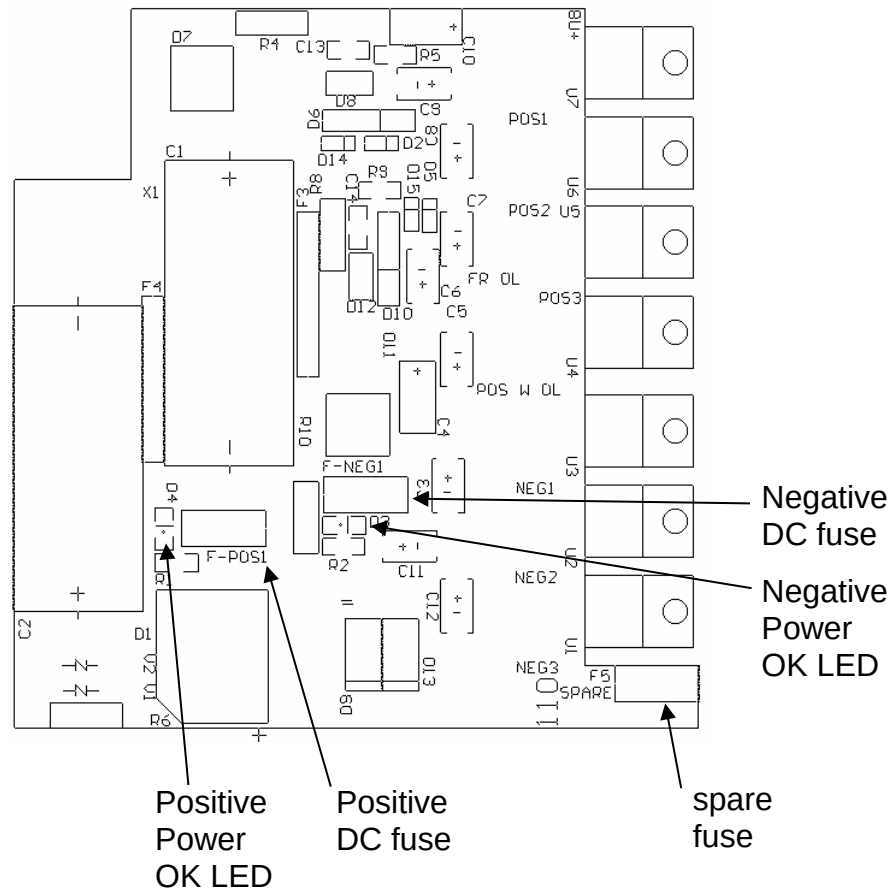
8) For additional assistance:

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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.

PERFORMANCE CHECK SHEET