

INSTRUCTIONS

MODEL AVB2-TB-C 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

E-mail: [info@avtechpulse.com](mailto:info@avtechpulse.com)

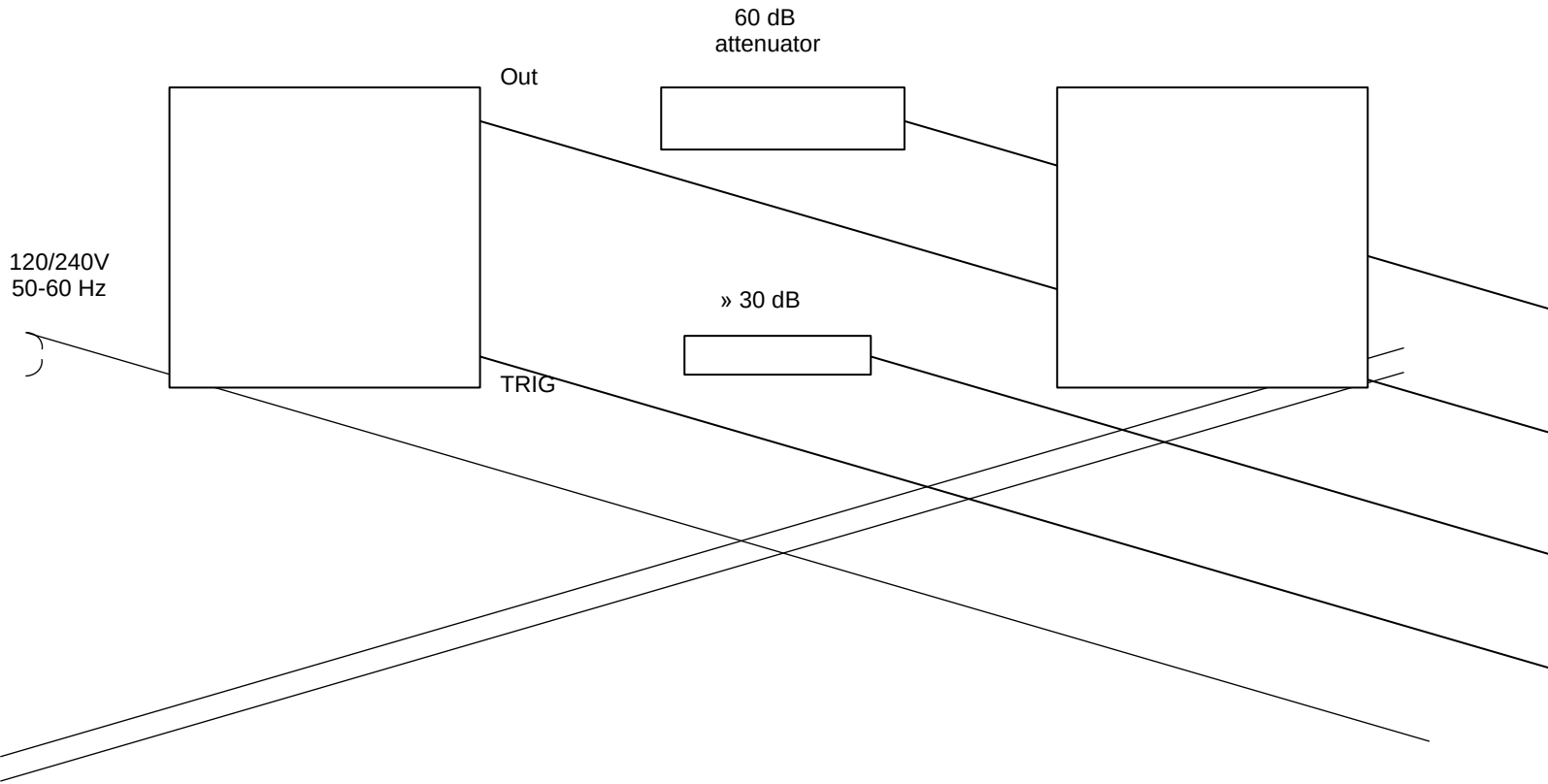
World Wide Web: <http://www.avtechpulse.com>



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FIG. 1: 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 one gigahertz.
- 2) The use of 60 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) The TRIG output channel provides TTL level signals. To avoid overdriving the TRIG input channel of some sampling scopes, a 30 db attenuator should be placed at the input to the sampling scope trigger channel.
- 4) To obtain a stable output display the PRF control on the front panel should be set mid-range while the PRF range switch may be in either range. The front panel TRIG toggle switch should be in the INT position. The front panel DELAY controls and the scope triggering controls are then adjusted to obtain a stable output. The scope may then be used to set the desired PRF by rotating the PRF control and by means of the PRF range switch.
- 5) The output frequency is controlled by the front panel one-turn FREQUENCY control. Clockwise rotation of the control increases the frequency of the output monocyte (or decreases the pulse width of the output waveform).
- 6) The output pulse amplitude is controlled by means of the one turn potentiometer (AMP). The output amplitude may be varied from about 150 to 400 Volts peak to peak. For lower output amplitudes (and for lower spurious at reduced amplitudes) it is recommended that external attenuators be used.
- 7) MONITOR Output. The front panel monitor output provides an attenuated replica (20 db down) of the output. The monitor output is designed to operate into a 50 ohm load. (option).
- 8) 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.
- 9) For additional information:

Tel: (613) 226-5772  
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Fig. 2: FRONT PANEL CONTROLS



## FRONT PANEL CONTROLS

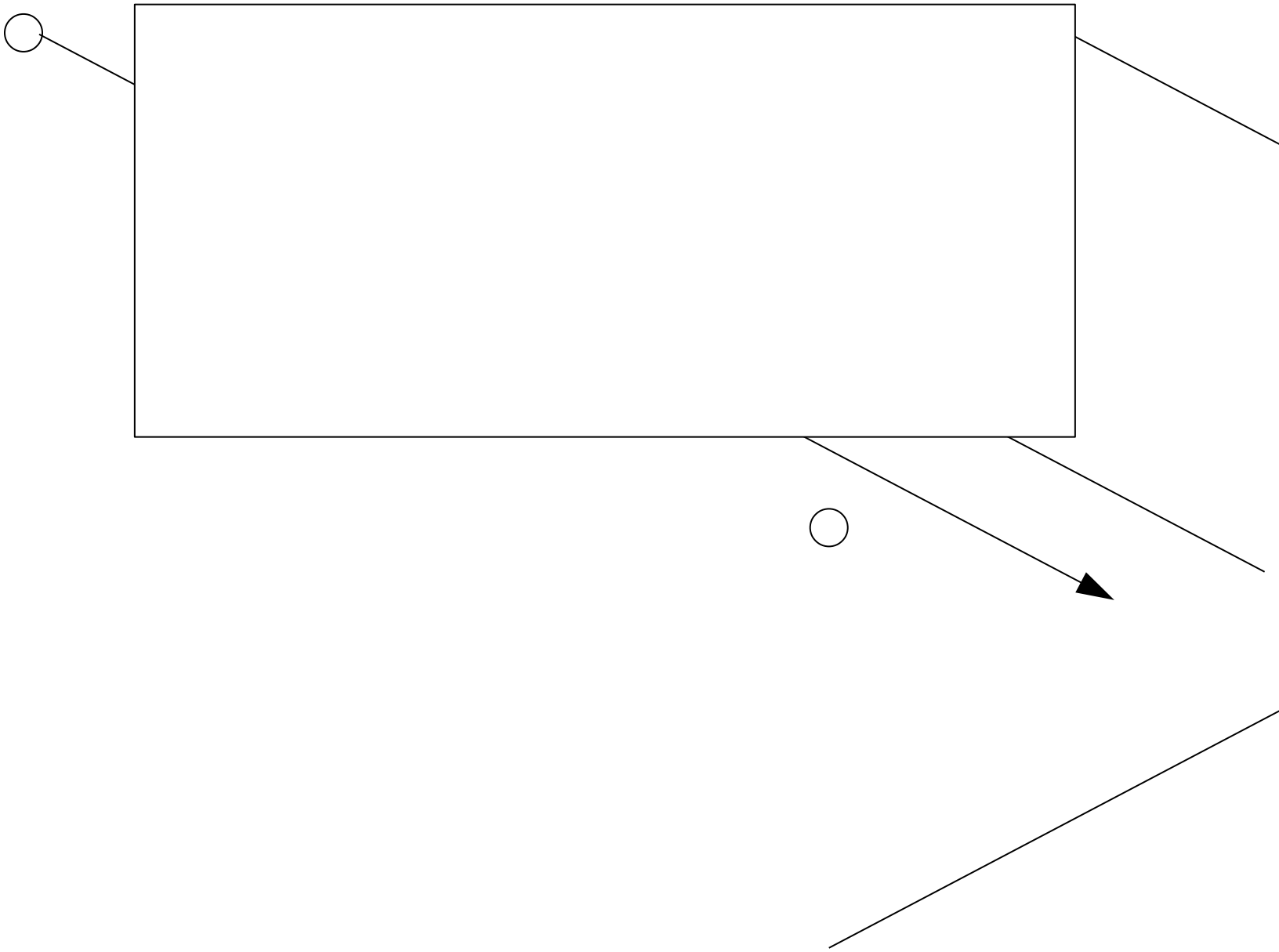
- (1) ON-OFF Switch. Applies basic prime power to all stages.
- (2) PRF Control. The PRF RANGE and PRF controls determine output PRF as follows:

	PRF MIN	PRF MAX
Range 1	2 Hz	20 Hz
Range 2	20 Hz	200 kHz
Range 3	200 Hz	2 kHz
Range 4	2 kHz	20 kHz

- (3) DELAY Control. Controls the relative delay between the reference output pulse provided at the TRIG output (4) the main output (5). This delay is variable over the range of 0 to about 500 ns. Delay LEADS and LAGS depending on the position of the ADVANCE-DELAY switch.
- (4) TRIG Output. This output is used to trigger the scope time base. The output is a TTL level 100 ns (approx.) pulse capable of driving a fifty ohm load. This output precedes the output at (5) if the two position ADVANCE-DELAY switch is in the ADVANCE position. This output follows the output at (5) if the switch is in the DELAY position. The external trigger signal is applied at this input when the EXT-INT toggle switch is in the EXT position.
- (5) OUT. BNC connector applies output to 50 ohm load.
- (6) AMP Control. The output pulse amplitude is controlled by means of the one turn potentiometer (AMP) over the range of about 150 volts to 400 volts.
- (7) FREQUENCY: One turn control varies the frequency from 50 to 100 MHz.
- (8) EXT-INT Control. With this toggle switch in the INT position, the PRF of the AVB2 unit is controlled via an internal clock which in turn is controlled by the PRF controls. With the toggle switch in the EXT position, the AVB2 unit requires a 50 ns (or wider) TTL level pulse applied at the TRIG input in order to trigger the output

stages. In addition, in this mode, the scope time base must be triggered by the external trigger source.

Fig. 3: BACK PANEL CONTROLS



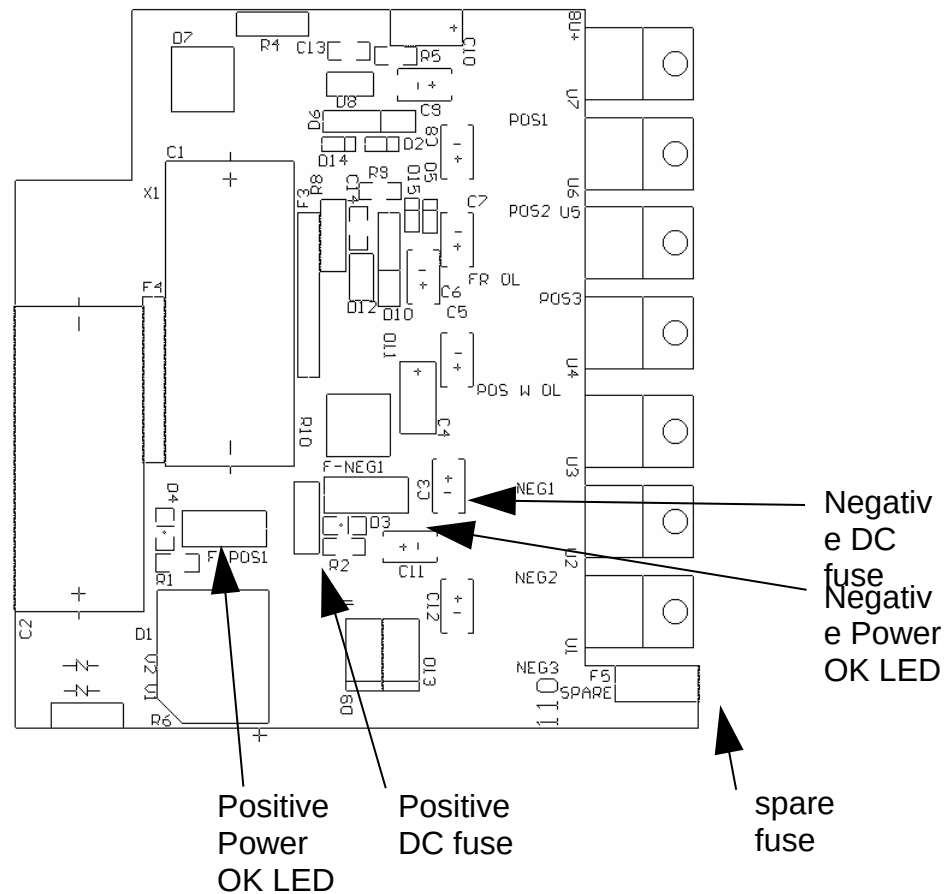
BACK PANEL CONTROLS

- (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 (1.0 A SB).
- (2) TOP COVER REMOVAL. Remove the 4 Phillips screws on the top cover. The top cover may then be slid back (and off).

## 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 positive fuse and the spare fuse on this circuit board are 1A slow-blow fuses, Littlefuse part number R452001. (This fuse can be ordered from Digikey, [www.digikey.com](http://www.digikey.com). The Digikey part number is F1343CT-ND). The negative fuse is a 0.5A slow-blow fuse (Littlefuse R452.500, Digikey part number 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

