AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS
SINCE 1975

☐ P.O. BOX 265
OGDENSBURG, NY
U.S.A. 13669-0265
TEL: (315) 472-5270
FAX: (613) 226-2802

TEL: 1-800-265-6681
FAX: 1-800-561-1970

e-mail: info@avtechpulse.com
http://www.avtechpulse.com

☐ P.O. BOX 5120 STN. F
OTTAWA, ONTARIO
CANADA K2C 3H4
TEL: (613) 226-5772
FAX: (613) 226-2802

INSTRUCTIONS

MODEL AVP-AV-HV2-C-DP-P 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

Phone: 613-226-5772 or 1-800-265-6681
Fax: 613-226-2802 or 1-800-561-1970

E-mail: info@avtechpulse.com
World Wide Web: http://www.avtechpulse.com

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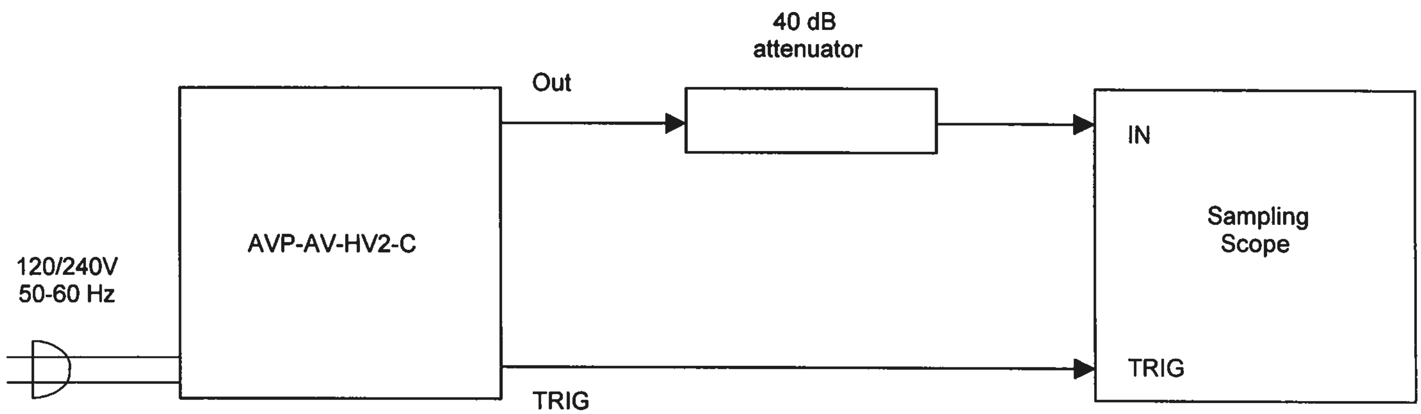
Manual Reference: Q:\office\instructword\Avp\AVP-AV-HV2-C-DP-P-eda-fig.doc, created March 29, 2001

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 ten 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) The TRIG output channel provides +2 Volt 200ns pulses.

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 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.

5) 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.

6) 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. Rotation of the PW pot causes the position of the falling edge of the pulse to change.

7) Some properties of the output pulse may change as a function of the amplitude pot setting. For some demanding applications, it may be desirable to use a combination of external attenuators and the amplitude pot to achieve the desired output amplitude.

8) The relative delay between the A and B pulse may be varied from -5 to +5 ns using the one-turn delay B control. Pulse A or Pulse B may be turned on or off using the corresponding front panel On-Off switches.

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

10) An external clock may be used to control the output PRF of the AVP unit by setting the front panel PRF range switch in the EXT position and applying a 50 ns (or wider) TTL level pulse to the TRIG BNC connector input.

11) The monitor output (-M) provides a 20 dB attenuated coincident replica of the main output. (option).

12) 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.

13) For additional assistance:

Tel: (613) 226-5772
Fax: (613) 226-2802
Email: info@avtechpulse.com

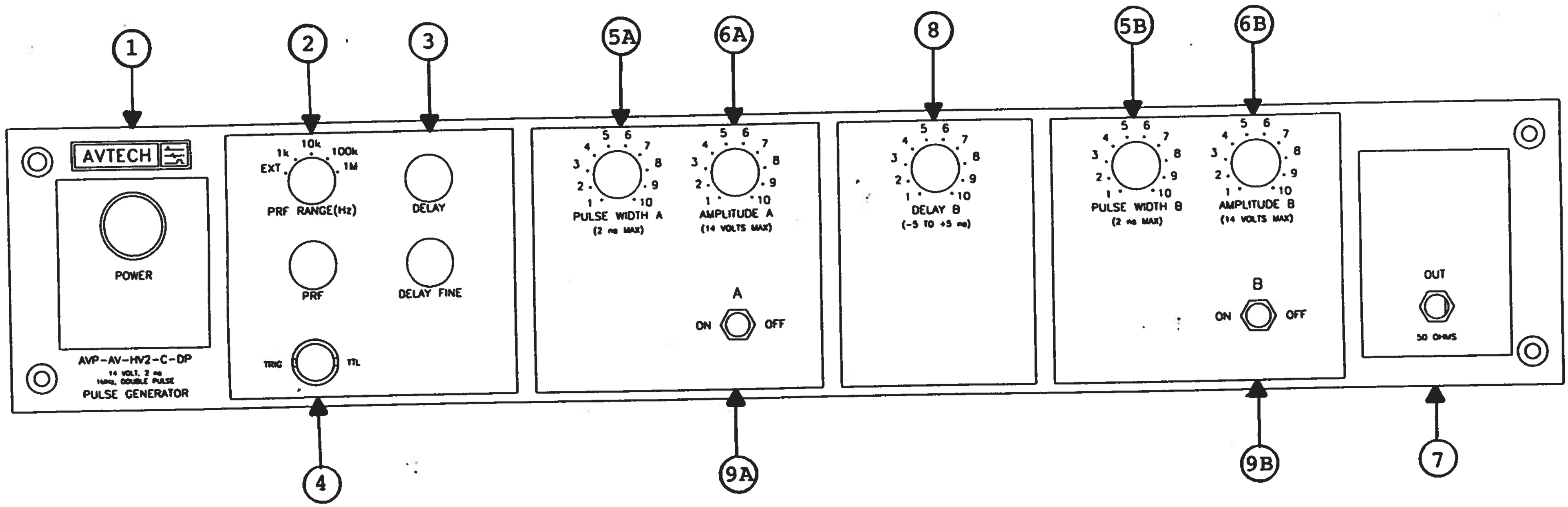


Fig. 2 FRONT PANEL CONTROLS

FRONT PANEL CONTROLS

(1) ON-OFF Switch. This is the mail power switch. It applies basic prime power to all stages.

(2) PRF Control. With this range switch in the 1K, 10K, 100K or 1M positions, the pulse repetition frequency (PRF) of the instrument is controlled by the internal clock oscillator, which in turn is controlled by the PRF range switch and fine control.

With the range switch in the EXT position, the instrument requires a 50 ns (or wider) TTL level pulse applied at the TRIG input in order to trigger the output stages.

(3) DELAY Control. These controls vary the relative delay between the reference output pulse provided at the TRIG output (4) and the main output (6). This delay is variable over the range of 0 to about 500 ns. Coarse and fine controls are provided.

The delay is not adjustable when triggering externally.

(4) TRIG Output. This connector has two functions. When triggered internally, this output provides a reference signal that can be used to trigger an oscilloscope scope time base. The output is a 2V, 200ns (approx.) pulse capable of driving a 50-Ohm load. Set the scope to trigger on the positive edge.

When triggered externally (i.e., the PRF range switch is in the EXT position), the external TTL-level trigger signal is applied at this point.

(5) PW Control. One-turn controls which vary the output pulse widths from 0 to 2 ns.

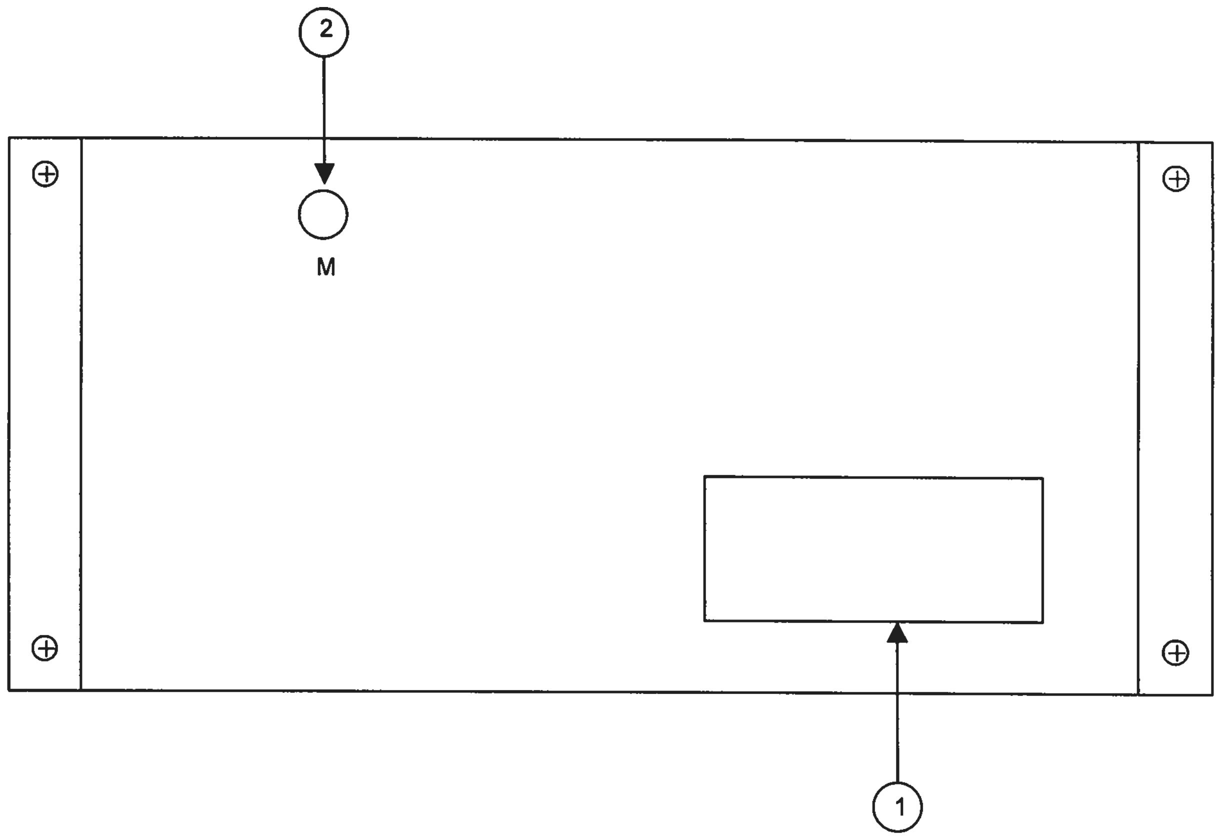
(6) AMP Control. One-turn controls which vary the output pulse amplitudes from 0 to 14 V to a 50-Ohm load.

(7) OUT. SMA connector provides output to 50 Ohms.

(8) Delay-B. One-turn control varies the delay of Pulse B relative to A from -5 to +5 ns.

(9) On-Off. Two-position switches to turn Pulse A (or B) On (or Off).

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 (0.25 A SB).

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.

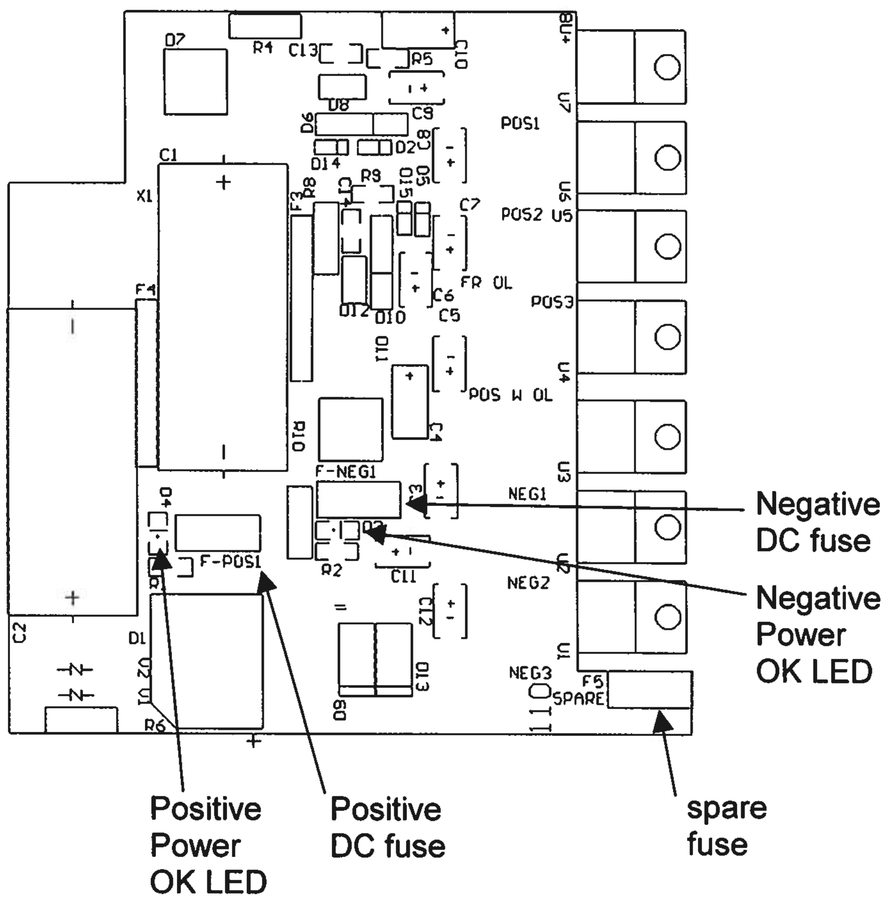
In the 120V setting, a 0.5A slow blow fuse is required. In the 240V setting, a 0.25A slow blow fuse is required.

(2) The monitor output (-M) provides a 20 dB attenuated coincident replica of the main output (option).

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. 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.

March 29/2001
(ED. A)