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INSTRUCTIONS

MODEL AVMM-3-C-OT-P-M1 PULSE GENERATOR

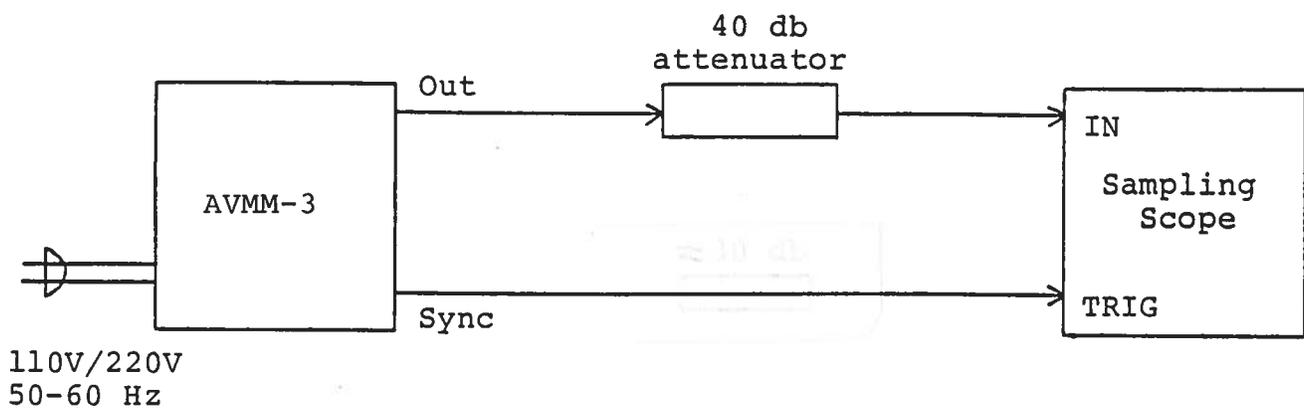
S.N. :

### 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 disassembled, 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.

Fig. 1

PULSE GENERATOR TEST ARRANGEMENT



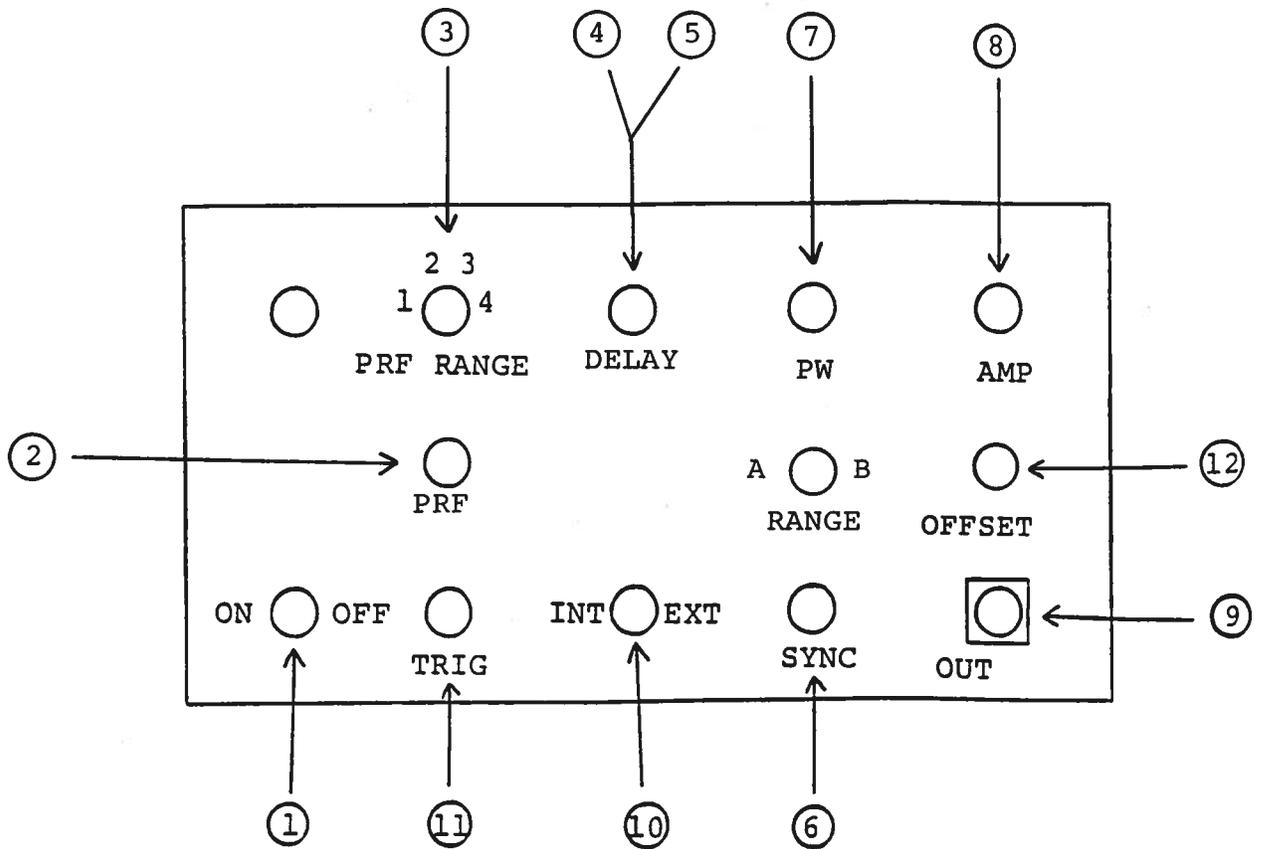
Notes:

- 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 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 AVMM-C contains two independent pulse generators which cover the output PW range of 0.8 to 6.0 ns (A) and 6.0 ns to 100 ns (B). A and B share a common internal clock and PW and AMP controls.
- 4) The sync output channel provides +200 mV, 10 ns pulses.
- 5) To obtain a stable output display the PRF and PRF FINE controls 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 control and the scope triggering controls are then adjusted to obtain a stable output. It is recommended that the DELAY control first be set max counter clockwise and then turned clockwise until a stable display is obtained. The scope may then be used to set the desired PRF by rotating the PRF and PRF FINE controls and by means of the PRF range switch. The stability of the display on some sampling scopes is very sensitive to the trigger delay setting, particularly at high PRF (eg. 10 MHz). If necessary, consult your sample scope instructions manual for the proper triggering method.
- 6) Take care to insure that when in RANGE B, the duty cycle does not exceed 20% (eg. at 10 MHz, the PW must not exceed 20 ns).
- 7) 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.
- 8) 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.

- 9) 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.
- 10) 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).
- 11) An external clock may be used to control the output PRF of the AVMM unit by setting the front panel TRIG toggle switch in the EXT position and applying a 20 ns (or wider) TTL level pulse to the TRIG BNC connector input. For operation in this mode, the scope time base must also be triggered by the external clock rather than from the SYNC output.
- 12) The AVMM-C 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.

Fig. 2

FRONT PANEL CONTROLS



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

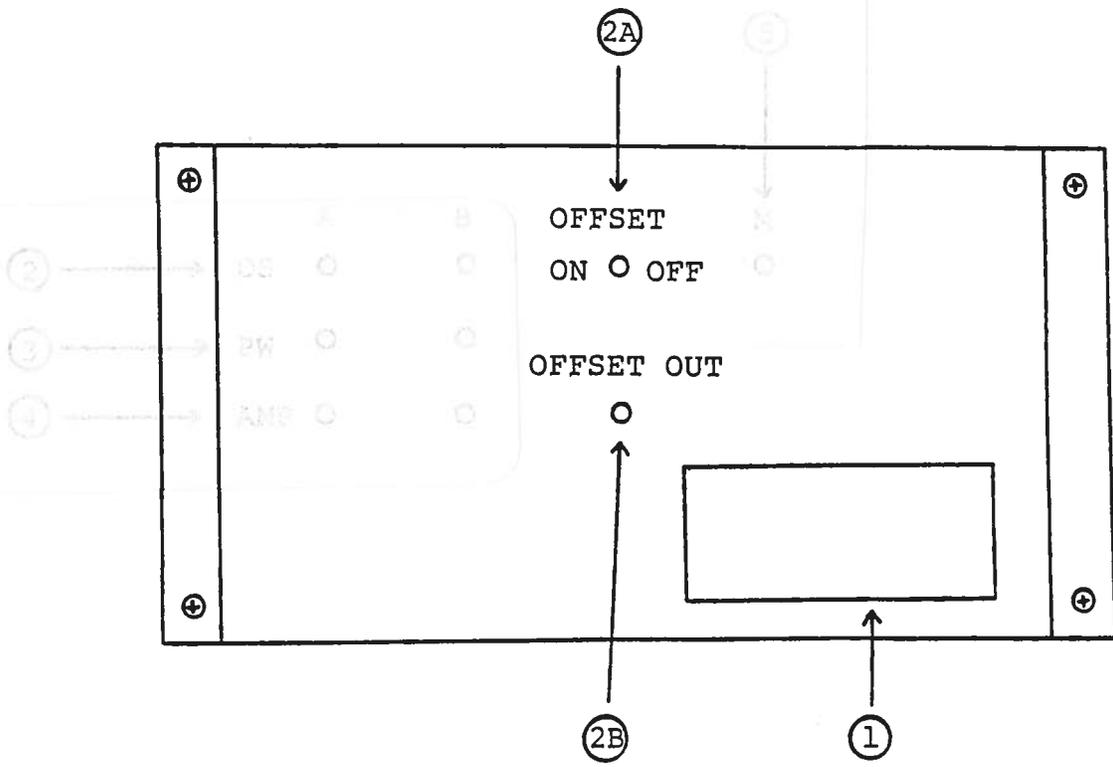
	PRF MIN	PRF MAX
Range 1	1.4 kHz	6.85 kHz
Range 2	5.1 kHz	25 kHz
Range 3	21 kHz	128 kHz
Range 4	125 kHz	685 kHz
Range 5	650 kHz	3.0 MHz
Range 6	2.6 MHz	10 MHz

- (4) DELAY Controls. Controls the relative delay between the
- (5) reference output pulse provided at the SYNC output (6)
- and the main output (9). This delay is variable over
- the range of 0 to at least 100 ns.
- (6) SYNC Output. This output precedes the main output (9)
- and is used to trigger the sampling scope time base.
- The output is a +200 mV 10 ns pulse capable of driving a
- fifty ohm load.
- (7) PW Control. A one turn control which varies the output
- pulse width.
- (7A) PW RANGE. Two position switch selects PW range (A: 0.8
- to 6.0 ns, B: 6.0 to 100 ns).
- (8) AMP Control. A one turn control which varies the output
- pulse amplitude.
- (9) OUT. SMA connector provides output to 50 ohm load.
- (10) EXT-INT Control. With this toggle switch in the INT
- position, the PRF of the AVMM 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 AVMM unit requires a 20 ns 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.
- (11) TRIG Input. The external trigger signal is applied at
- this input when the EXT-INT toggle switch is in the EXT
- position.
- (12) For units with the OT 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.

Fig. 4

BACK PANEL CONTROLS

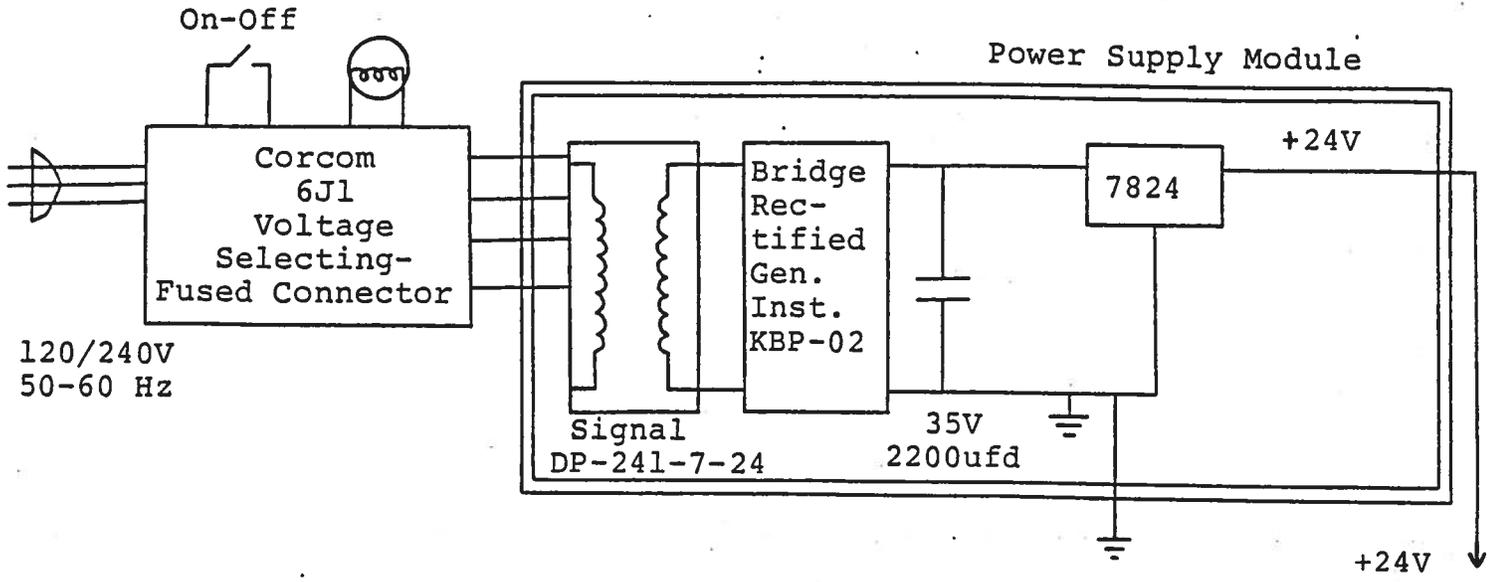
(for units with the  
OT or P options)



- (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 Amp SB).
- (2) To voltage control the output DC offset, remove the jumper wire between banana plugs A and B and apply 0 to +10V to connector B ( $R_{IN} \geq 10K$ ). (EO option).
- (2A) Two position switch which turns output DC offset ON or OFF. (OT option).
- (2B) With OFFSET ON-OFF switch in ON position, DC output offset potential appears at this terminal.

Fig. 4

SYSTEM BLOCK DIAGRAM



01.25.93

-OT

-EW

-EA

-EO