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SINCE 1975

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INSTRUCTIONS

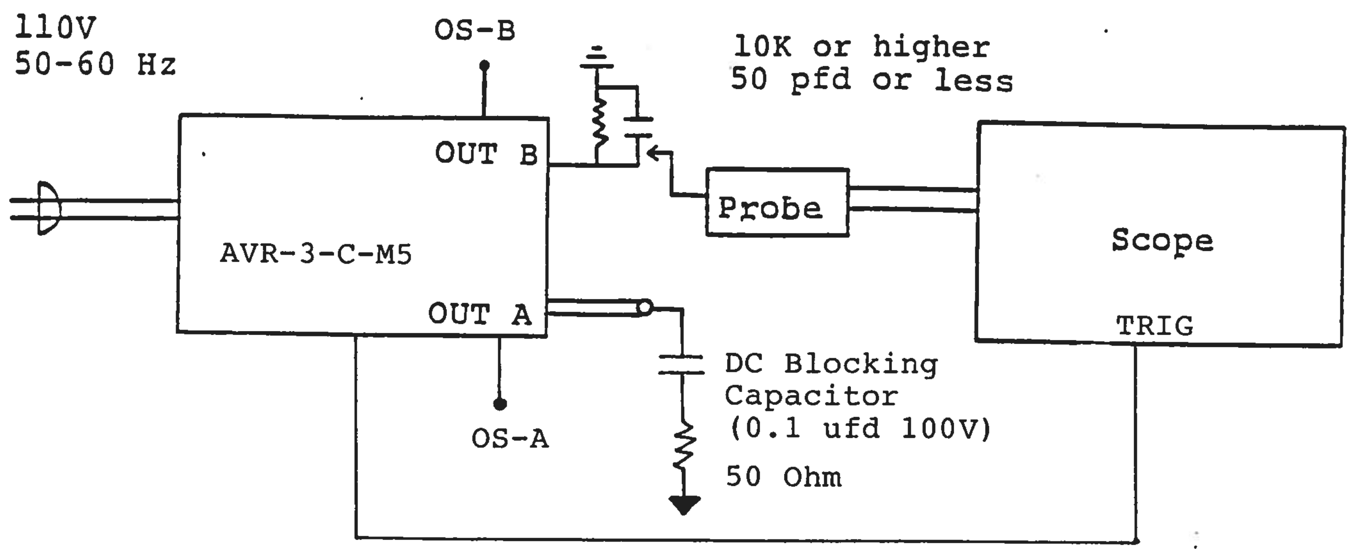
MODEL AVR-3-C-M5 PULSE GENERATOR

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 or liability assumed by Avtech with respect to this product and no other warranty or guarantee is either expressed or implied.

TEST ARRANGEMENT



Notes:

1) The equipment should be connected in the general fashion shown above. A scope with a bandwidth of at least 50 MHz should be used to view the outputs.

2) Output A amplitude is variable from 0 to +200 volts while output B amplitude is variable form -100 to -500 volts. Care should be taken to insure that the scope and the load resistor can withstand this high voltage (and high output power for wide output pulse widths). If the DC offset in A is used, it is essential that a DC blocking capacitor be placed in series with the 50 Ohm load.

3) The output pulse width for output A is variable from about 10 ns to 100 ns by means of the one turn PW A control.

4) The output PW for output B is variable from 2 us to 35 us via the one turn control (PW B).

5) To offset output A connect the desired offset voltage (0 to +100 volts) to the OS A terminals on the back panel.

6) To offset output B connect the desired offset voltage (0 to ±100 volts) to the back panel OS B terminals. Note that OSB must be shorted to ground if an offset potential is not being applied.

7) The delay of B out with respect to A and is variable from 0 to 5 us using the ten turn DELAY AB pot.

8) The monitor output A provides a 1/10 replica (to 50 Ohms) of the output A. The monitor output B provides a 1/100 replica to R_L = 50 Ohms of the output B.

9) AVR-3-PW-C units with a serial number higher than 5600 are protected by an automatic overload protective circuit which controls the front panel overload light. If the unit is overloaded (by operating at an exceedingly high duty cycle or by operating into a short circuit), the protective circuit will turn the output of the instrument OFF and turn the indicator light ON. The light will stay ON (i.e. output OFF) for about 5 seconds after which the instrument will attempt to turn ON (i.e. light OFF) for about 1 second. If the overload condition persists, the instrument will turn OFF again (i.e. light ON) for another 5 seconds. If the overload condition has been removed, the instrument will turn on and resume normal operation. Overload conditions may be removed by:

   1) Reducing PRF (i.e. switch to a lower range)
   2) Reducing pulse width (i.e. switch to a lower range)
   3) Removing output load short circuit (if any)

10) The 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.

11) For additional information:

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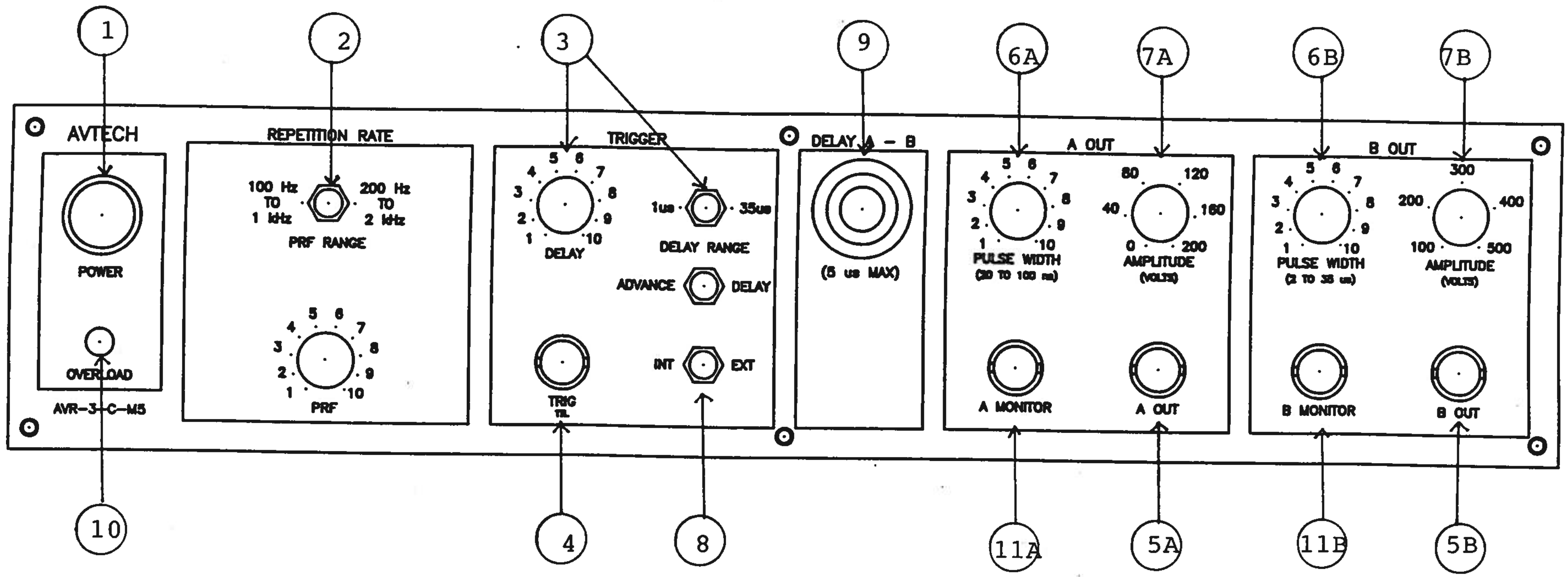
FIG. 2 FRONT PANEL CONTROLS



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

(2) PRF Control. Varies PRF from 100 Hz to 2 kHz as follows:

100 Hz to 1 kHz
200 Hz to 2 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 0.1 to about 100 us. Delay LEADS or LAGS depending on the position of the ADVANCE-DELAY switch.

	MIN	MAX
Range 1	0.1 us	1.0 us
Range 2	1.0 us	35 us

(4) TRIG Output. This output is used to trigger the scope time base. The output is a TTL level 100 nsec (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 delay range is variable from 0.1 us to 100 us. The external trigger signal is applied at this input when the EXT-INT toggle switch is in the EXT position.

(5) OUT Connector. BNC connector provides output to a 50 ohm load for OUT A and to a high impedance for OUT B.

(6) PW Control. A one turn control which varies the PW for OUT A from 10 ns to 100 ns and for OUT B from 2 us to 35 us.

(7) AMP Control. A one turn control which varies the output pulse amplitude from 0 to 200 V for OUT A and -100 Volts to -500 Volts for OUT B.

(8) INT-EXT Control. With this toggle switch in the INT position, the PRF of the AVR unit is controlled via an internal clock which in turn is controlled by the PRF control. With the toggle switch in the EXT position, the AVR unit requires a 0.2 us 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.

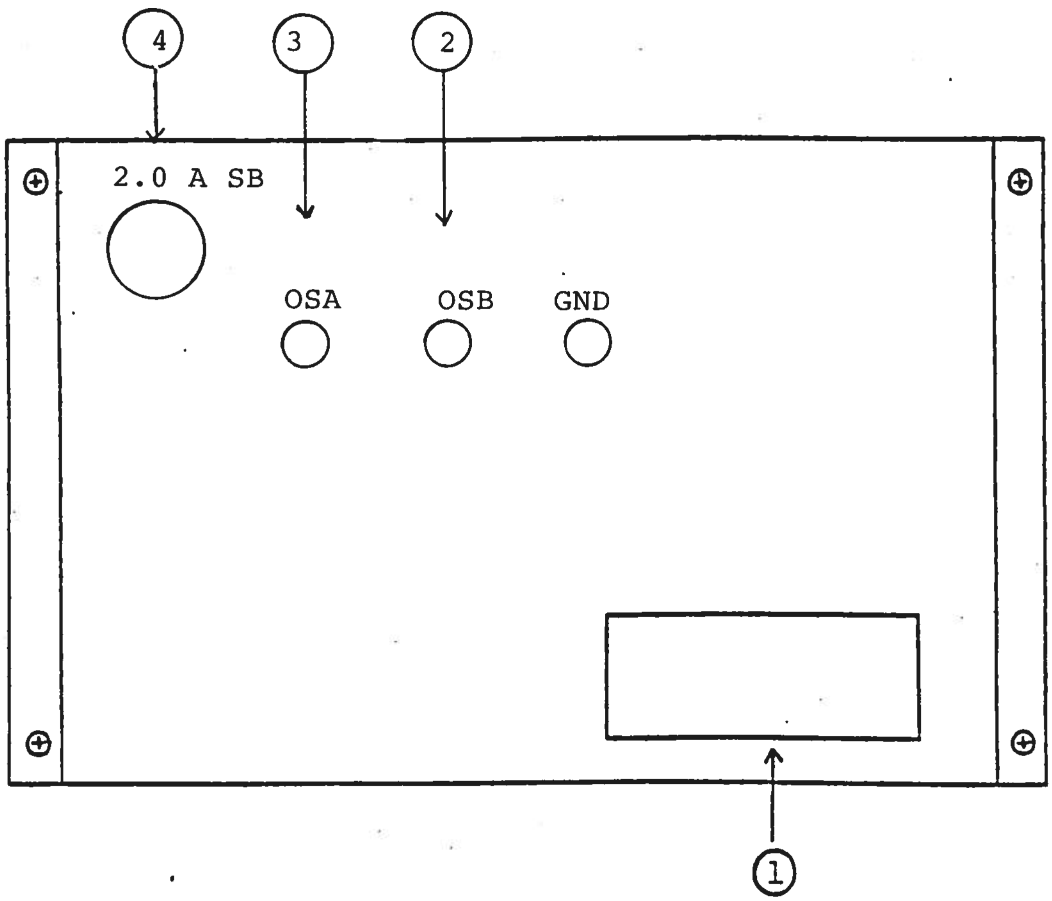
(9) DELAY AB Ten turn output to vary the delay of OUT B with respect to OUT A from 0 to 5.0 us.

(10) OVERLOAD INDICATOR. AVR-3-PW-C units with a serial number higher than 5600 are protected by an automatic overload protective circuit which controls the front panel overload light. If the unit is overloaded (by operating at an exceedingly high duty cycle or by operating into a short circuit), the protective circuit will turn the output of the instrument OFF and turn the indicator light ON. The light will stay ON (i.e. output OFF) for about 5 seconds after which the instrument will attempt to turn ON (i.e. light OFF) for about 1 second. If the overload condition persists, the instrument will turn OFF again (i.e. light ON) for another 5 seconds. If the overload condition has been removed, the instrument will turn on and resume normal operation. Overload conditions may be removed by:

1) Reducing PRF (i.e. switch to a lower range)
2) Reducing pulse width (i.e. switch to a lower range)
3) Removing output load short circuit (if any)

(11) MONITORS. The monitor output A provides a 1/10 replica (to 50 Ohms) of the output A. The monitor output B provides a 1/100 replica (to R_L = 50 Ohms) of the output B.

FIG. 3 **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 (0.5 A SB).

(2) OS-B. To offset output B, apply desired DC offset (0 to $\pm$ 100 Volts) to OS-B solder terminals. Note that the OS-B terminal must be grounded if no offset is applied.

(3) OS-A. To offset output A, apply desired DC offset (0 to $\pm$ 100 Volts) to OSA solder terminals. Note that a DC blocking capacitor (approx. 0.1 ufd 100 Volts) must be placed in series with 50 Ohm load termination.

(4) 2.0 A SB. This fuse limits the power supplied to the output stage of PGB to protect the channel if overloaded.

April 15/94