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ENGINEERING - MANUFACTURING

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INSTRUCTIONS

MODEL AVR-3-PS-PN-MITA-0S PULSE GENERATOR

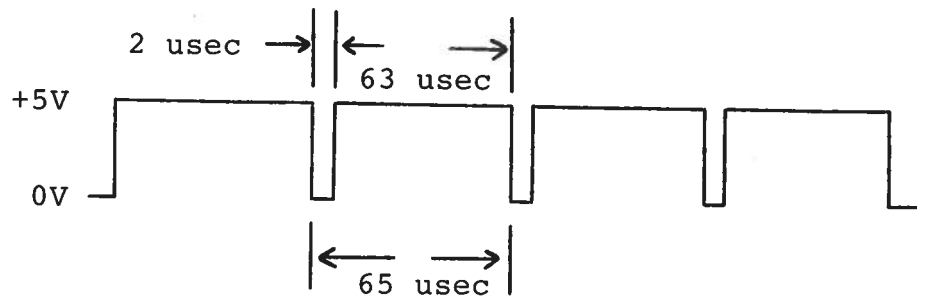
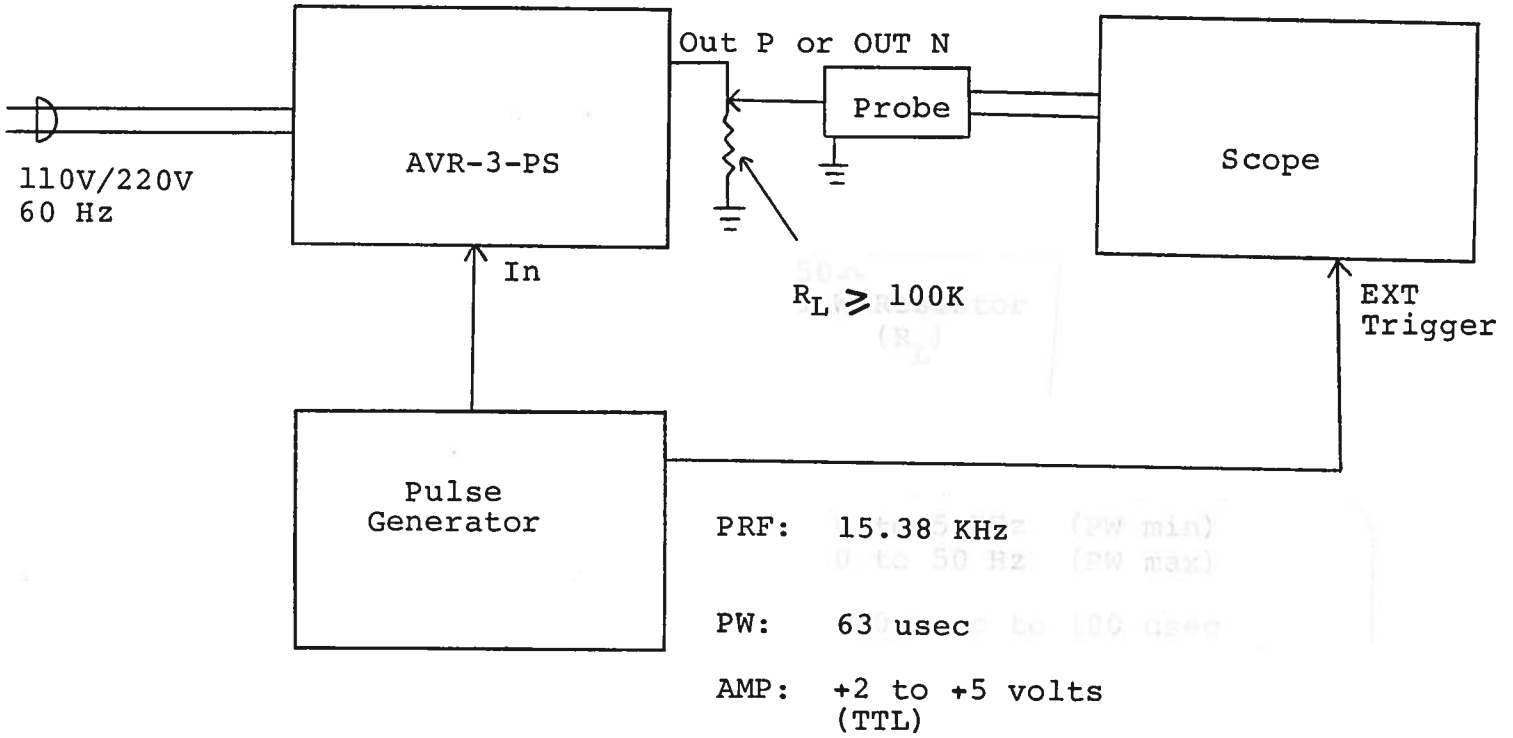
S.N.: 4559

## 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

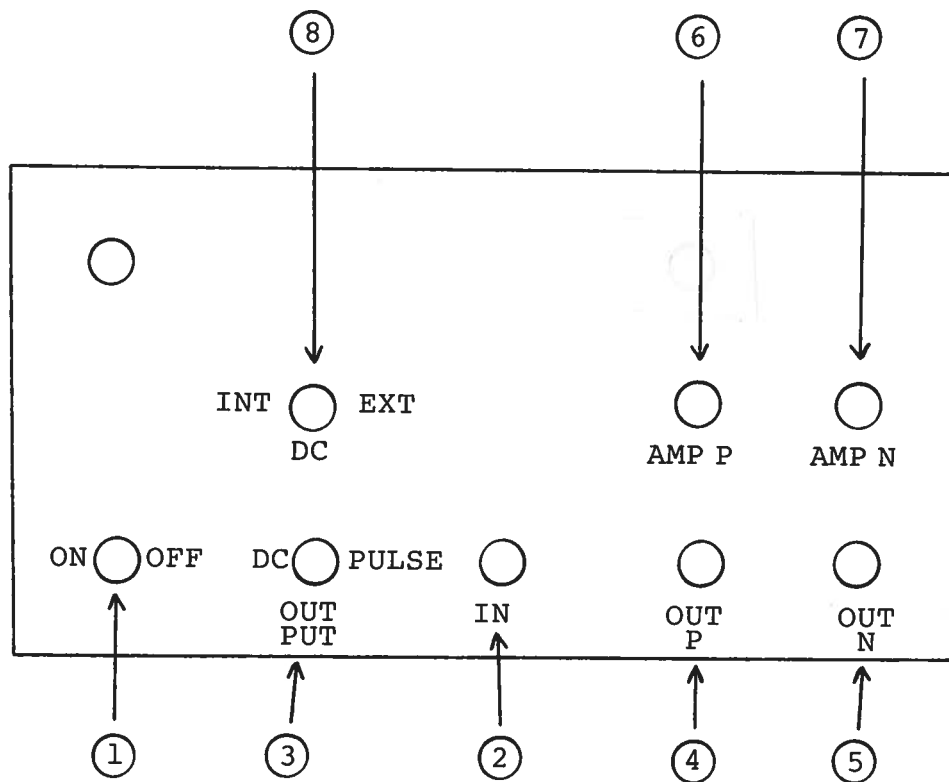


Notes:

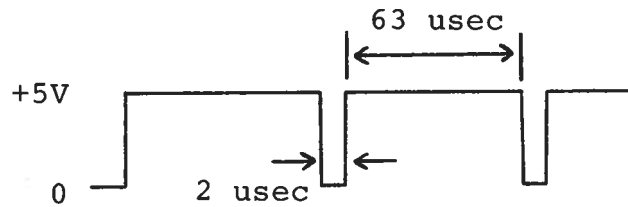
- 1) The bandwidth capability of components and instruments used to display the pulse generator output signal (attenuators, cables, connectors, etc.) should exceed 100 MHz. The unit must be terminated in a high impedance ( $\geq 100K$ ).
- 2) The output pulse width is equal to the input trigger pulse width.
- 3) The output PRF is equal to the input trigger pulse PRF.
- 4) The output pulse amplitudes for the positive and negative outputs are controlled by means of the front panel one turn AMP P and AMP N controls.
- 5) The output switching elements may fail if the unit is inadvertently operated into a short circuit. The switching elements are easily replaced in the field following the procedure outlined in the REPAIR Section.
- 6) The OUTPUT "PULSE-DC" switch should be in the "PULSE" position to obtain a pulse train output. When set in the "DC" position the output is a fixed DC level (controlled by the AMP control).
- 7) The front panel DC "INT-EXT" switch should normally be in the INT position. With the switch in the INT position the output voltage during the 63 usec interval is clamped at 0 volts. With the switch in the EXT position, the output voltage during the 63 usec interval is equal to the voltage applied to the rear panel OS terminal.

Fig. 2

FRONT PANEL CONTROLS



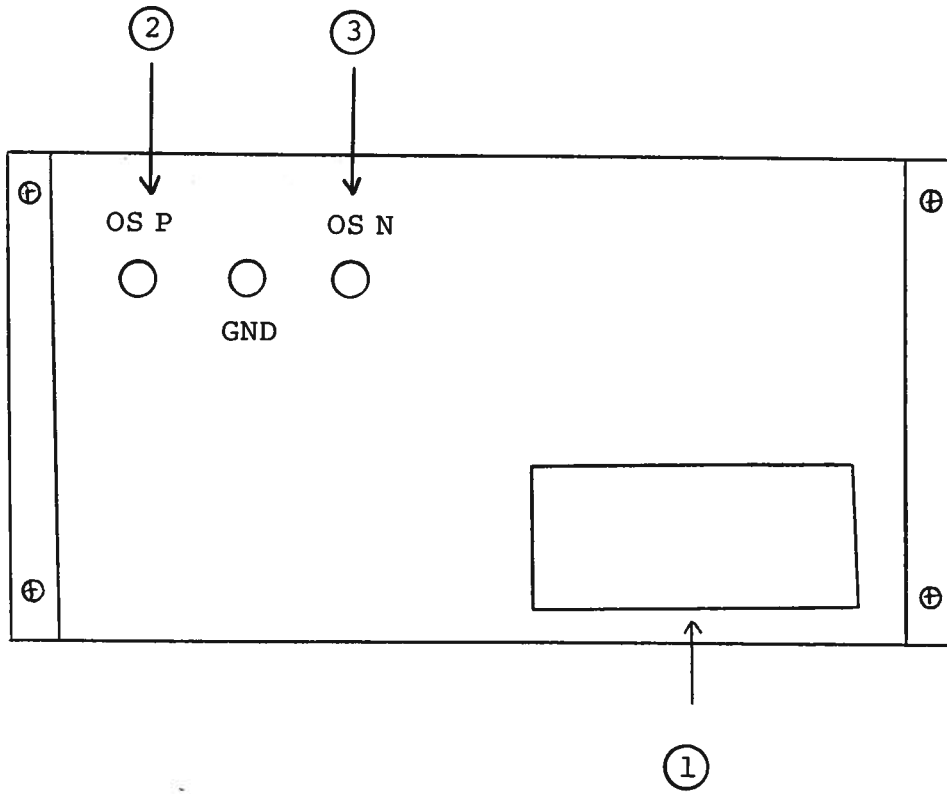
- (1) ON-OFF Switch. Applies basic prime power to all stages.
- (2) INPUT. Apply TTL input at this point.



- (3) DC-PULSE Switch. Two position switch. Set in pulse position to obtain pulsed output. Set in DC position to obtain DC out (0 to  $\pm 150$  volts).
- (4) P\_OUT. Provides positive out to high impedance load ( $\geq 100K$ ).
- (5) N\_OUT. Provides negative out to high impedance load ( $\geq 100K$ ).
- (6) AMP Controls. Controls pulse (and DC) output amplitude.
- (7)
- (8) INT-EXT. With the switch in the INT position the output voltage during the 63 usec interval is clamped at 0 volts. With the switch in the EXT position, the output voltage during the 63 usec interval is equal to the voltage applied to the rear panel OS terminal.

Fig. 2

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.
- (2) OS P. When the front panel INT-EXT switch is in the EXT position, the output voltage during the 63 usec interval is equal to the DC potential applied to OS P (0 to +25V).
- (3) OS N. When the front panel INT-EXT switch is in the EXT position, the output voltage during the 63 usec interval is equal to the DC potential applied to OS N (0 to -25 volts).



## SYSTEM BLOCK DIAGRAM AND REPAIR PROCEDURE

- 1) The AVR unit consists of four basic components or modules:
  - a) Metal Chassis
  - b) AC to DC power supply board
  - c) AVR-3-PG pulse generator modules (-P and -N)
  - d) AVR-3-PS power supply modules (-P and -N)

The modules are interconnected as shown above.

- 2) If the unit malfunctions, disconnect from the 60 Hz supply and the trigger source and remove the four Phillips screws on the back panel of the unit. With the screws removed, the top cover may be slid off.
- 3) Reconnect to the 60 Hz source and check the voltage on the line connecting to the +24 V pin of the AVR-PG module. A voltage of +24 volts should be recorded. If the voltage is substantially less than +24 volts, disconnect the 60 Hz source and disconnect the line from the +24 volt pin. Connect a 50 ohm 8 watt resistance to the output of the AVR-PS module. Reconnect to the 60 Hz source and measure the voltage across this resistor. A voltage of +24 volts should be indicated. If the voltage is substantially less than 24 volts the AVR-PS module is defective and should be either repaired or replaced. If the measured voltage is equal to +24 volts then the SL9H switching elements in the AVR-PG module have probably failed. The SL9H switching elements are easily replaced by removing the cover plate on the instrument bottom side and extracting the SL9H switching elements from their sockets using a pair of needle nose pliers. Before attempting this first insure that the prime power is off and also briefly ground the metal tabs on the SL9H elements to the chassis as the bypass capacitors may be charged to 225 volts. Replacement SL9H units must be ordered directly from Avtech. When reinstalling the SL9H units in their sockets, insure that the shortest of the three terminals is adjacent to the black dot on the AVR-PG chassis.



Fig. 3a

POWER SUPPLY

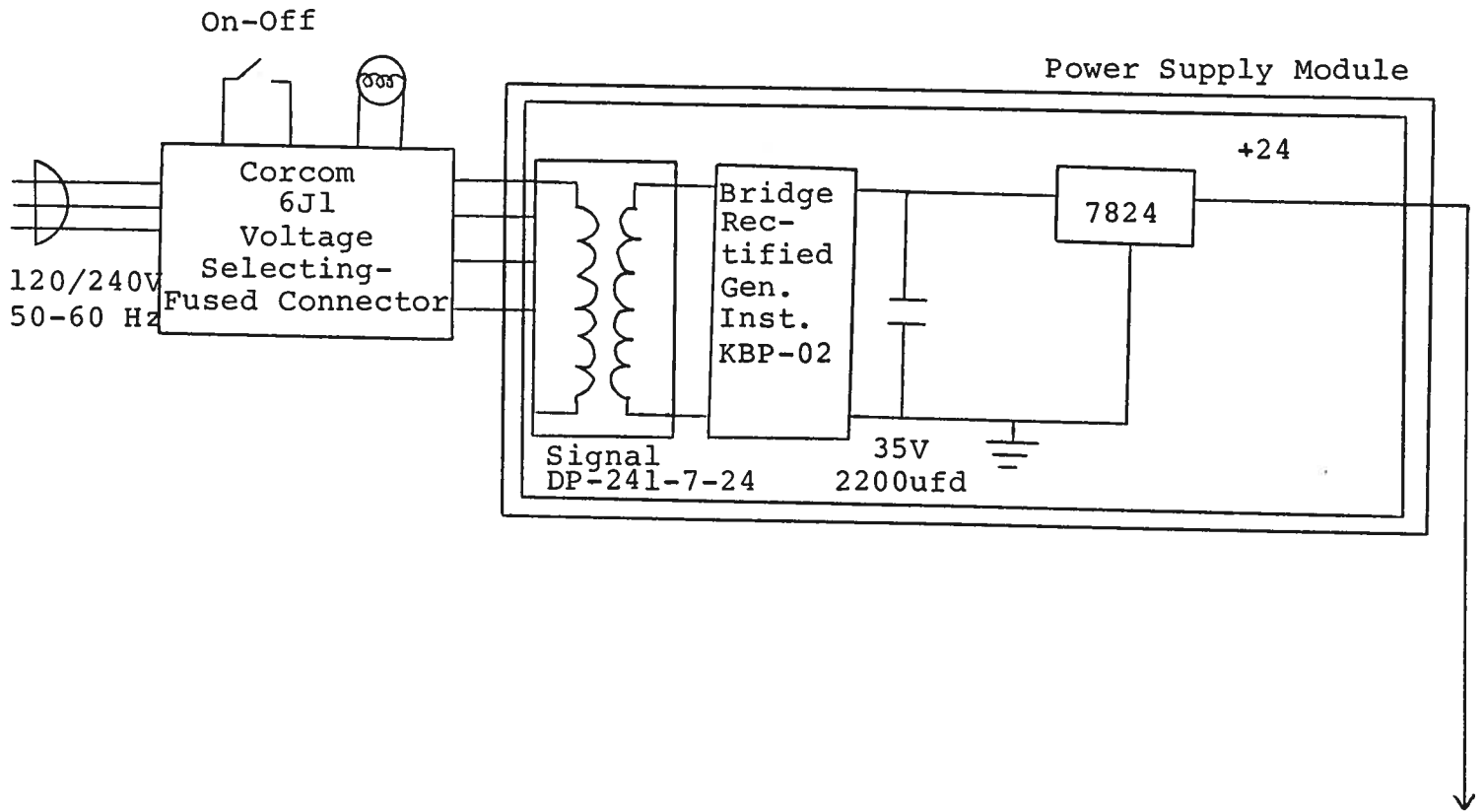


Fig. 3b

Schroff

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