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SINCE 1975

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INSTRUCTIONS

MODEL AVRL-5-PS 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
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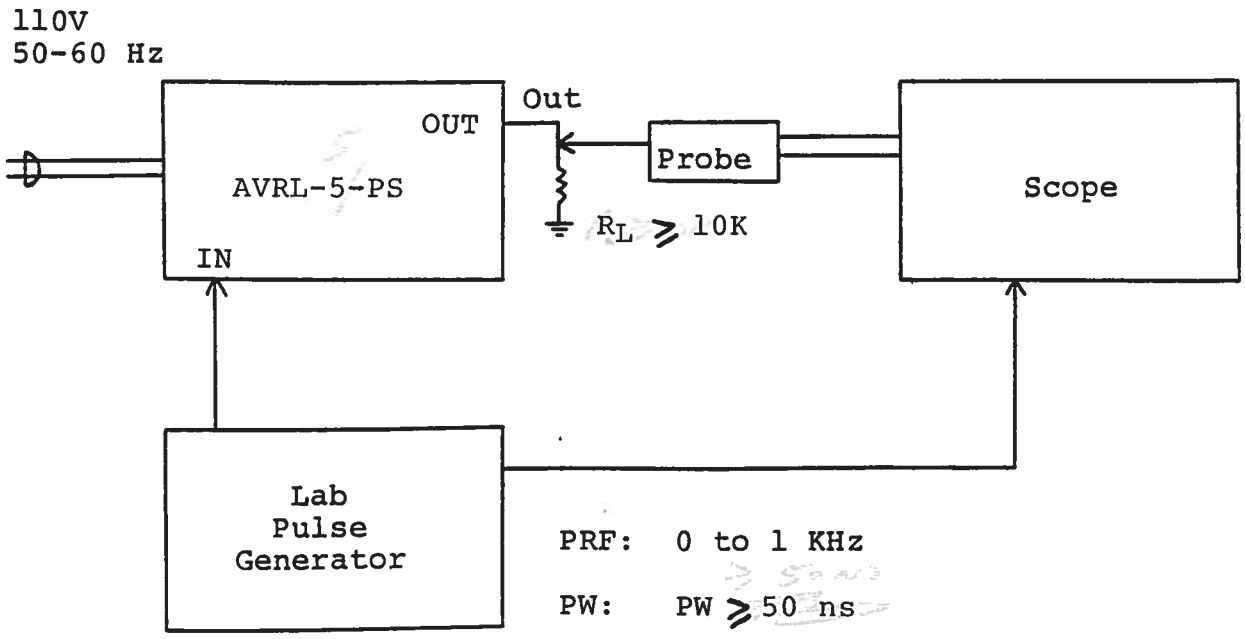
World Wide Web: http://www.avtechpulse.com

TEST ARRANGEMENT



PRF: 0 to 1 KHz

PW: PW $\geq$ 50 ns

AMP: +2 to +5V (TTL Levels)

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 output.

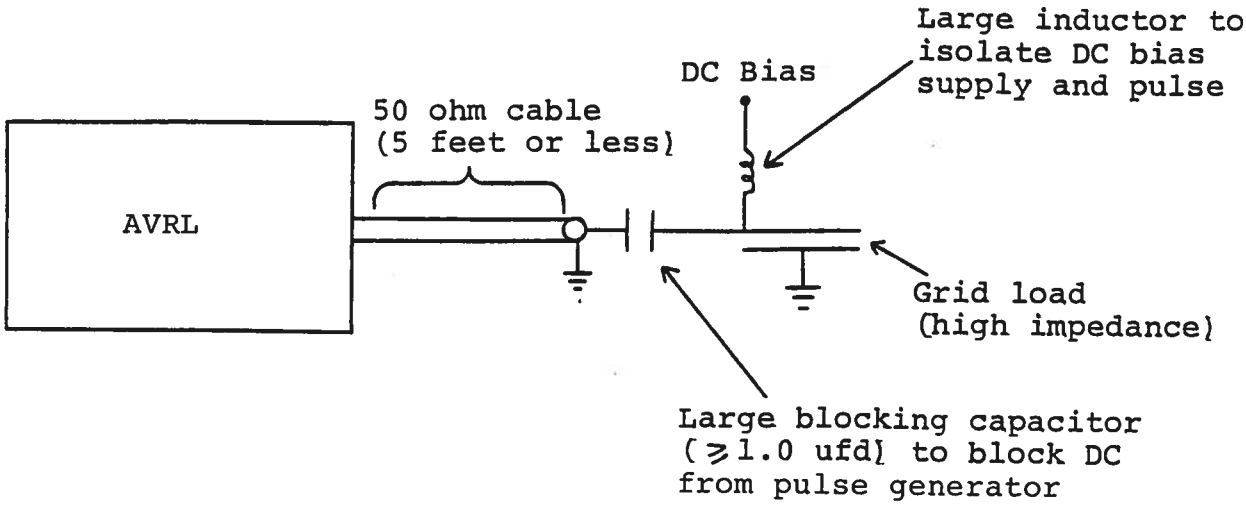
2) The output amplitude is fixed at -200 Volts. Care should be taken to insure that the scope, the load resistor and any attenuators used can withstand this high voltage.

3) The output pulse width for RANGE A is variable from 20 ns to 100 ns. The output pulse width for RANGE B is variable from 100 ns to 1 ms using the front panel PW B controls.

4) The output pulse width may be set to equal the input trigger pulse width by setting the rear panel PW switch in the external mode. CAUTION: In RANGE A, the input trigger pulse width must not exceed 100 ns or the unit may be damaged.

5) The output PRF is equal to the input PRF applied to the IN port. Outputs A and B will operate safely to PRF as high as 1 kHz. Note that both A and B outputs may fail if above PRF specifications are exceeded.

6) The output is designed to operate directly into a high impedance load (10 K or higher). WARNING: The unit may fail if operated into a 50 Ohm load. The following arrangement is recommended when the output is used to pulse a biased high impedance load:


Large inductor to
isolate DC bias
supply and pulse
DC Bias
50 ohm cable
(5 feet or less)
AVRL
Grid load
(high impedance)
Large blocking capacitor
(≥1.0 ufd) to block DC
from pulse generator

7) The output switching elements in output B may fail if the output of the unit is accidentally short-circuited or if the unit is operated at high output pulse width - high PRF combinations. The switching elements are easily replaced following the instructions given in the REPAIR Section. The output switching elements in output A are also easily replaced.

8) AVRL 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)

9) For additional assistance:

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Fax: (613) 226-2802

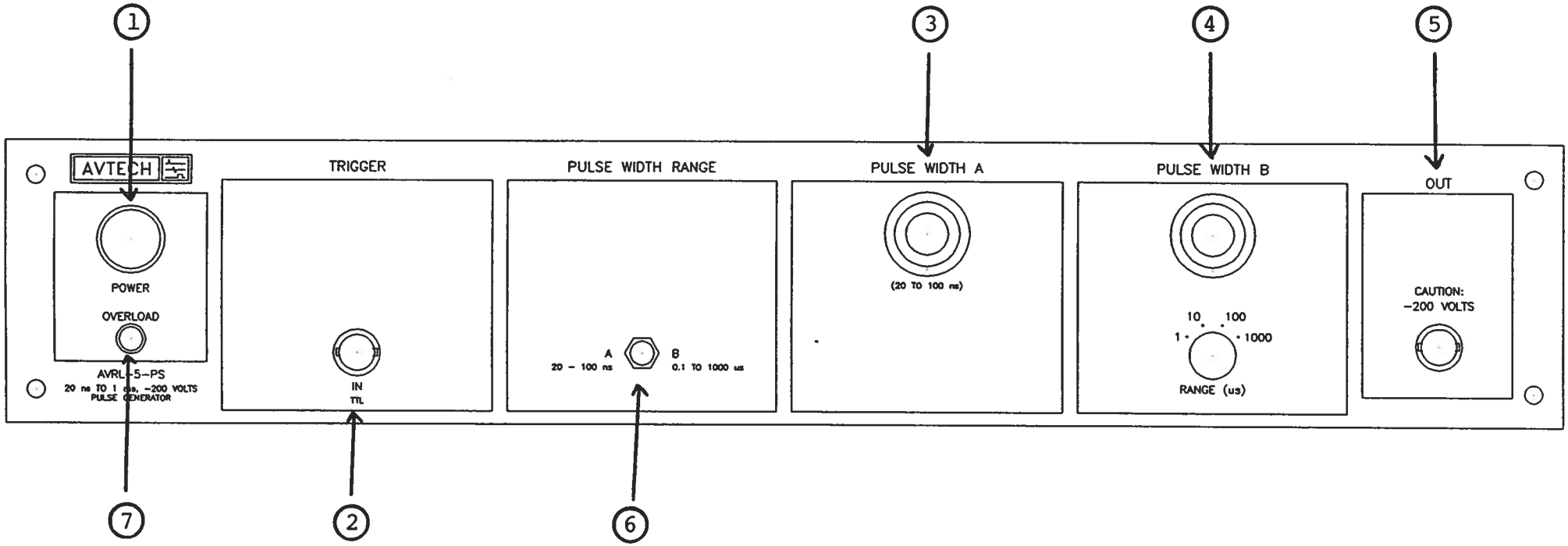


Fig. 2

FRONT PANEL CONTROLS

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

(2) IN. Input trigger applied here (+5 Volts, 50 ns or wider).

(3) PW A. Ten turn control varies A out PW from 20 ns to 100 ns.

(4) PW B. Four position range switch and ten turn pot vary B out PW as follows:

1) 100 ns to 1 us
2) 1 us to 10 us
3) 10 us to 100 us
4) 100 us to 1 ms

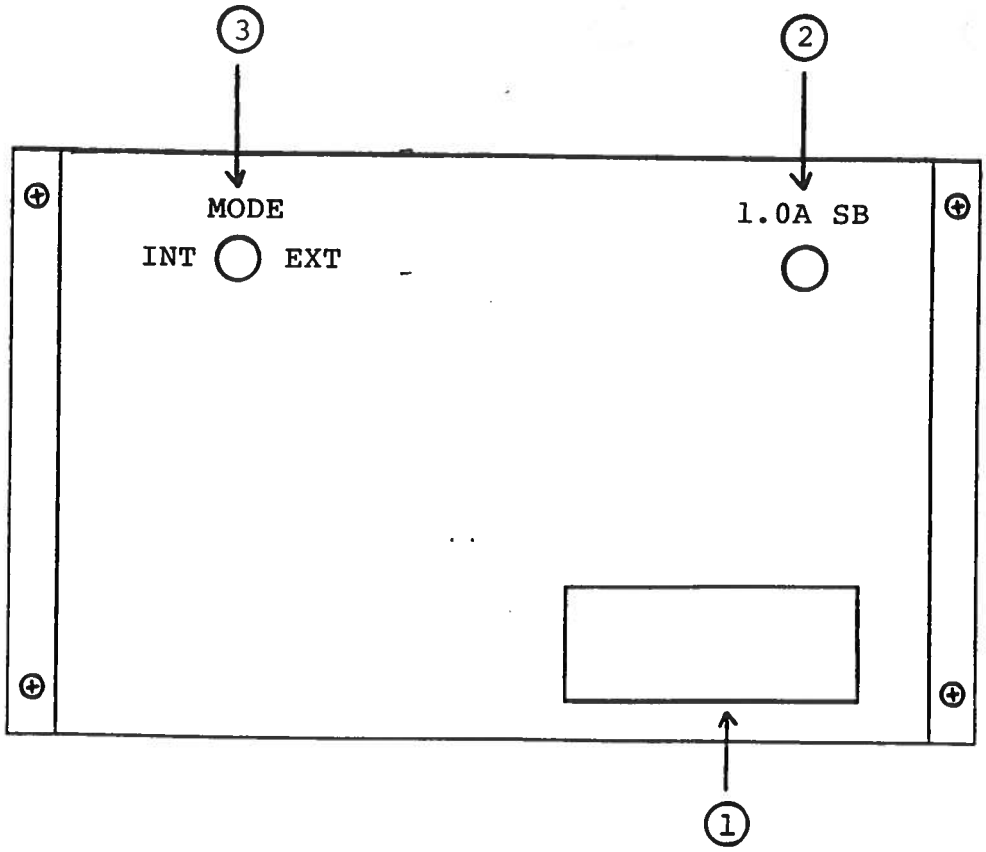
(5) OUT Connector. BNC connector used to connect output to a high impedance load (> 10K).

(6) PULSE WIDTH RANGE. With the switch set in the A RANGE position, use pulse width control A (3) and with the switch set in the B RANGE position, use pulse width control B (4).

(7) OVERLOAD INDICATOR. AVRL 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)

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).

(2) 1.0A SB. Fuse which protects the output stage if the output duty cycle rating is exceeded.

(3) MODE. With the two position PW MODE switch set in the INT position, the output pulse width is controlled by the front panel PW controls. With the switch set in the EXT position, the output pulse width equals the input trigger pulse width. CAUTION: When operating in RANGE A and in the EXT MODE, the input trigger pulse width must not exceed 100 ns (the unit may be damaged).

June 15/98 in WP

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