



**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  
U.S.A. & CANADA

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

INSTRUCTIONS

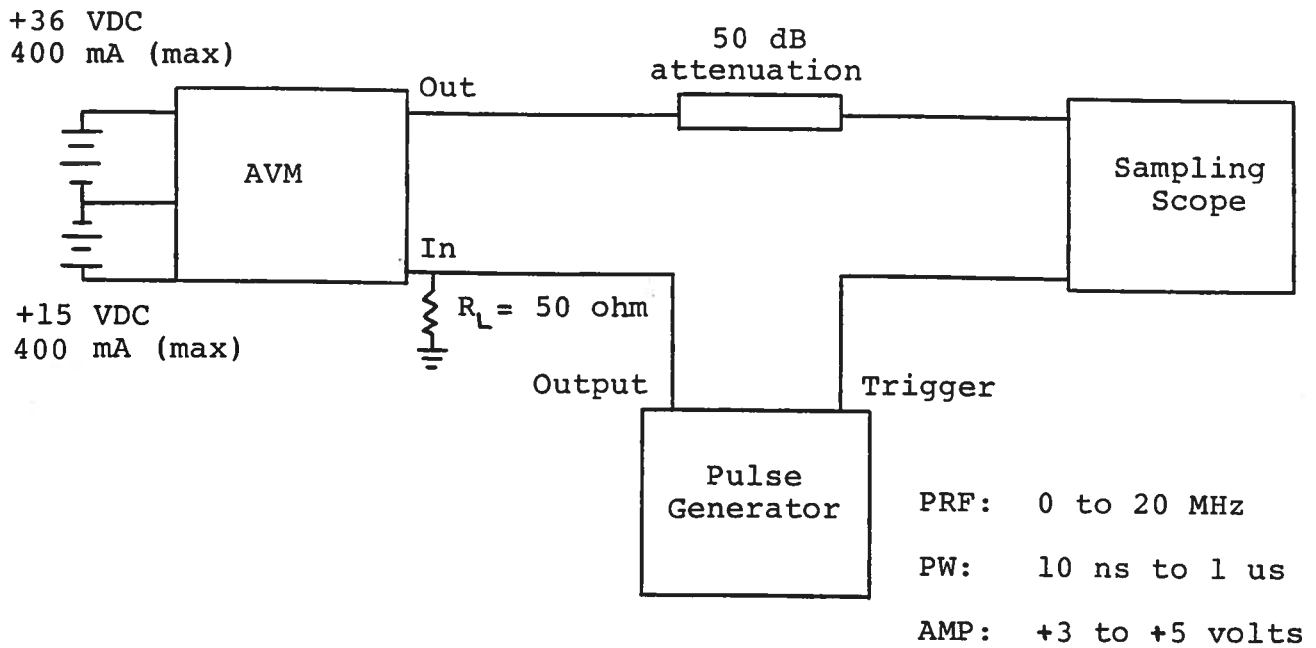
MODEL AVM-3-M3-P PULSE GENERATOR

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 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.

MODEL AVM-3-M3 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 one gigahertz.
- 2) The use of 50 dB attenuator will insure a peak input signal to the sampling scope of less than one Volt.
- 3) WARNING: The AVM unit requires a maximum prime input power of about 20 Watts. It is therefore essential that the unit be heatsunk in order to maintain a moderate chassis temperature.
- 4) WARNING: Model AVM-3 may fail if triggered at a PRF greater than 20.0 MHz.
- 5) In general, the source pulse generator trigger delay control should be set in the 0.1 to 1.0 us range.\*
- \* The stability of the display on some sampling scopes is very sensitive to this delay, particularly at high PRF (eg. 10 to 20 MHz). If necessary, consult your sample scope instructions manual for the proper triggering method.
- 6) When testing using a general purpose 50 Ohm laboratory pulse generator as the input trigger signal source, the input signal should be applied via a 50 Ohm feed-through load or alternatively, the input to the AVM unit should be shunted with a 50 Ohm resistor. This will prevent reflection (and degradation of the input pulse waveform) caused by the high impedance at the IN port. However, when triggering from a TTL source, no 50 Ohm feed-through load or resistor is necessary but lead length should be as short as possible. High-speed TTL Schottky logic is recommended for the driving circuitry.
- 7) The input trigger pulse width should be in the range of 10 ns to 1 us.
- 8) The output pulse width is controlled by means of the one-turn potentiometer (PW). The pot should initially be set maximum clockwise and the pulse width adjusted using an oscilloscope.

- 9) The output pulse amplitude is controlled by means of the one-turn potentiometer (AMP). 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.
- 10) 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.
- 11) The flatness of the pulse top is controlled by the "A" pot. This pot should initially be set maximum clockwise and then rotated counterclockwise to remove ringing and overshoot on the pulse top. Note that care should be taken not to turn the pot too far counterclockwise as this will result in a degradation of the fall time and, in extreme cases, could result in a failure of the unit.
- 12) The ten turn "B" pot controls the rise time. Initially, this should be set mid-range, particularly for PRF near 20 MHz. If the PRF is low (eg. 1 MHz or less) it may be necessary to rotate this pot clockwise to reduce the rise time to less than 1 ns.

Dec. 15/94

Disk: AVM

Name: AVM3M3P.INS