

# AVTECH ELECTROSYSTEMS LTD.

NANOSECOND WAVEFORM ELECTRONICS  
ENGINEERING - MANUFACTURING

□ P.O. BOX 265  
OGDENSBURG  
NEW YORK  
13669  
(315) 472-5270

BOX 5120, STN. "F"  
OTTAWA, ONTARIO  
CANADA K2C 3H4  
TEL: (613) 226-5772  
FAX: (613) 226-2802  
TELEX: 053-4591

## INSTRUCTIONS

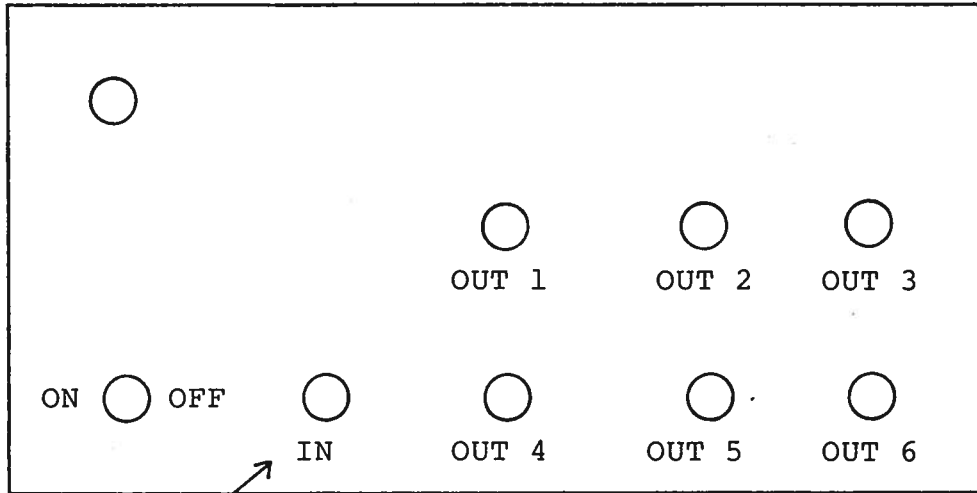
MODEL AVX-D-BAS4A-ED DELAY GENERATOR

S.N.:

### WARRANTY

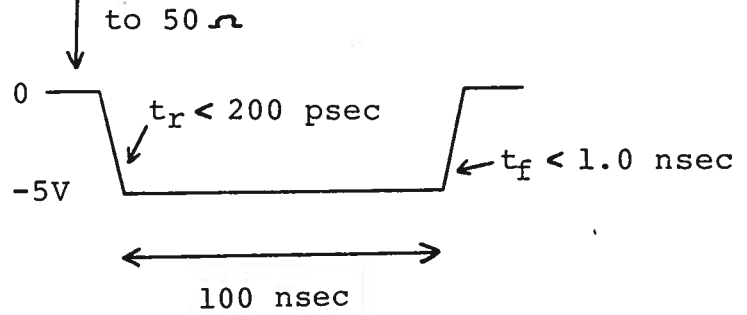
Avtech Electrosystems Ltd. warrants products of its manufacture to be free from defects in material and workmanship under conditions of normal use. If, within one year after delivery to the original owner, and after prepaid return by the original owner, this Avtech product is found to be defective, Avtech 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.

FRONT PANEL CONTROL



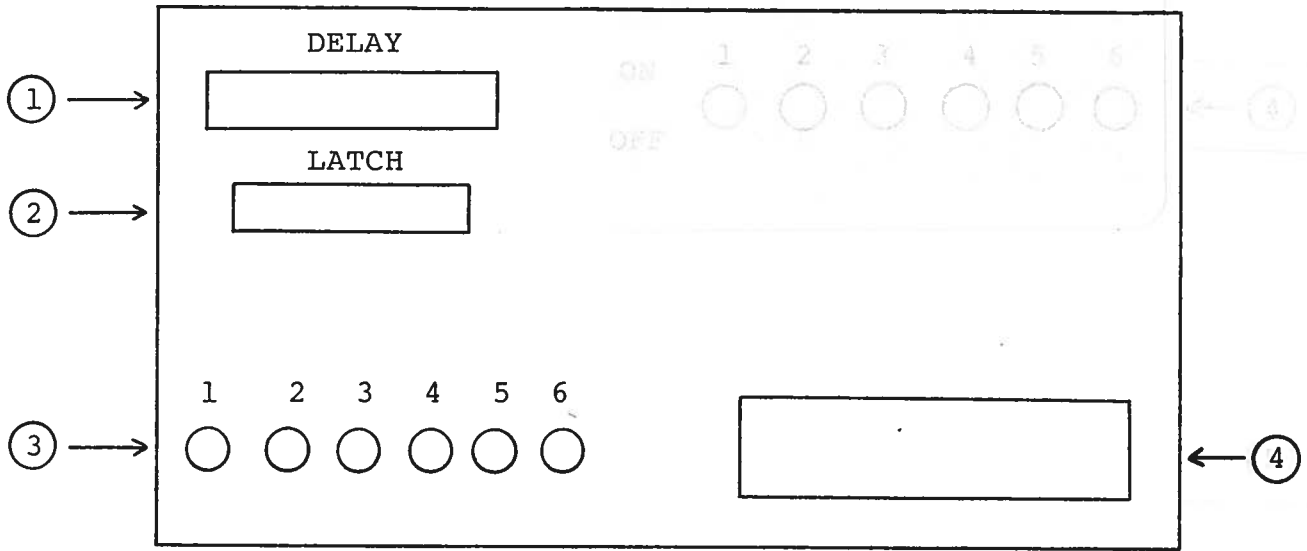
-0.9  
-1.8V  
PW > 20 nsec  
PRF ≤ 20K

includes 50 Ω  
-2V termination



Output delayed with respect  
to input by ≈ 20 to 22.56 nsec  
(10 psec per bit)

BACK PANEL CONTROL



1) Delay control connector:

Amphenol 57-40500

Pin connections:

<u>Channel</u>	<u>LSB</u>	<u>MSB</u>
1	1	8
2	9	16
3	17	24
4	26	33
5	34	41
6	42	49
GND		50

<u>Logic Level</u>	<u>Volts</u>
0	0 to +0.8V
1	+2 to +5V

2) Latch control connector:

Amphenol 57-40140

Pin connections:

<u>Channel</u>	<u>Pin</u>
1	1
2	2
3	3
4	4
5	5
6	6

<u>Logic Level</u>	<u>Function</u>
0 (0 VDC)	- 8 bit digital code is active
1 (+5 VDC)	- freezes digital code at corresponding 8 bit input

3) Delay equalization pots:

The minimum delays for the six channels may be equalized (at approx. 20 nsec) by minor adjustments to the one turn pots. Clockwise rotation of the pots increases the propagation delay ( $\pm 100$  psec adjustment range). The propagation delays were matched to within  $\pm 10$  psec prior to shipment.

4) Corcom connector:

Detachable line cord connection. Also contains line voltage switching card (120-240 volts) and line fuse (0.5A SB).

## GENERAL OPERATING INSTRUCTIONS

- 1) The unit requires a warm-up time of at least 30 minutes.
- 2) The minimum delay between the input and output is about 20 nsec. The minimum delay for the six channels may be equalized by means of the six rear panel one turn pots (approx.  $\pm 100$  psec). The delays were matched to within  $\pm 10$  psec prior to shipping.
- 3) 8 bit control words applied to the rear panel 50 Pin D connector vary the propagation delay in 10 psec steps up to 2.56 nsec. The 10 psec step size may be varied by very minor adjustment to the six one turn pots on the AVX-D-BAS4A modules in the instrument interior. To access the pots remove the 4 Phillips screws on the instrument back panel and then remove the instrument top cover. The step size was set to 10 psec prior to shipping.
- 4) With 0 volts applied to the latch control the relative delay through the channel is controlled by the 8 bit control mode. With 5 volts applied to the latch control, the relative delay is frozen at the mode determined by the last 8 bit word.
- 5) The stability of the propagation delay and the step size was checked using the test arrangement shown in Fig. 1.



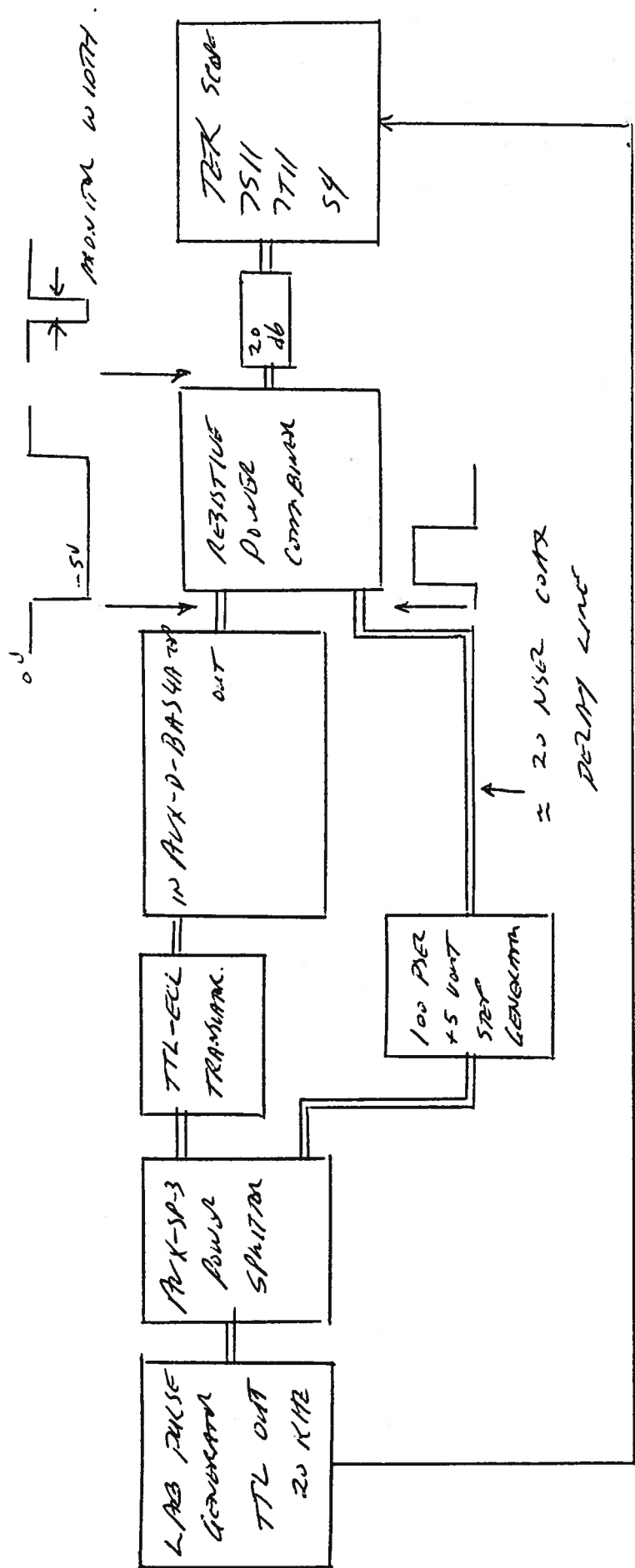


Fig 1 ARK-D-BAS 4A-CO DELAY STABILITY

TEST APPARATUS



08.15.90 Edition C