

IC3602A178 TEST INSTRUCTIONS

1.0 SCOPE

THIS DOCUMENT ESTABLISHES THE PERFORMANCE REQUIREMENTS AND RECOMMENDED TESTS FOR THE MICROSYNCHRONIZER ISOLATION MODULE, IC3602A178.


2.0 TEST EQUIPMENT

- 125VDC SOURCE
- VARIABLE AC SOURCE: 0-132VAC AT 25MA
- OSCILLOSCOPE
- P5 AND P28 POWER SUPPLIES, $\pm 1.0\%$
- AC VOLTMETER TO MEASURE 0-132 VAC, $\pm 0.1\text{VAC}$
- DC/AC VOLTMETER TO MEASURE 0-10VAC/DC $\pm .1\text{MV}$, AND 125VDC $\pm .1\text{VDC}$

2.1 PRELIMINARY INSPECTION

- INSPECT FOR PROPER ASSEMBLY OF HARDWARE PER ASSEMBLY DRAWING. MAKE SURE CAPACITORS C30-33 ARE NOT DAMAGED OR PRESSING AGAINST COVER PLATE. RESOLDER IF NECESSARY.
- WIRE CHECK MODULE WIRING PER ELEMENTARY.

TEST INSTRUCTIONS


REV. 1	REV. 4	REV. 7	PRINTS TO 3EF1 4RA5 4EB2 4RA1	ENGINEER <i>R. E. Grubbs</i>	GENERAL  ELECTRIC	MICROSYNCHRONIZER ISOLATION MODULE
REV. 2	REV. 5	ISSUED 2-13-79				
REV. 3	REV. 6	MADE BY R. E. GRUBBS				
					SALEM, VA. U.S.A.	2 7 7 A6 5 8 7 CONT. ON SH. 2 SH. NO. 1

TEST SET-UP



FIG 3.0 TEST SET-UP FOR IC3602A178

TEST INSTRUCTIONS

REV. 1	REV. 4	REV. 7	PRINTS TO 3EF1 4AAS 4EB2 4RA1	ENGINEER R2 <i>[Signature]</i>	GENERAL  ELECTRIC	MICROSYNCHRONIZER ISOLATION MODULE
REV. 2	REV. 5	ISSUED 2-13-79				
REV. 3	REV. 6	MADE BY R.E. GRUBBS				SALEM, VA. U.S.A.

4.0 TEST PROCEDURE (ALL VOLTAGES DC UNLESS STATED OTHERWISE)

- 4.1 OPEN SW1, SW2, AND SW3. SET THE VARIABLE AC SOURCE TO 0VAC. APPLY POWER PER FIG. 3.0. SET AC SOURCE TO 40VAC \pm 1VAC.
- 4.2 ϕ LVC (TB2-9) AND ϕ GVC (TB2-11) SHOULD READ 4.3 VOLTS \pm 0.8 VOLTS. MONITOR ϕ LVC AND ϕ GVC ON THE SCOPE AND VERIFY THAT NO PULSES OR OSCILLATIONS ARE PRESENT. LED'S LVP AND GVP SHOULD BE OFF.
- 4.3 SLOWLY INCREASE THE AC VOLTAGE UNTIL THE LED-LVP TURNS ON AND STAYS ON. THE AC VOLTAGE SHOULD BE 60VAC \pm 5VAC. LED-GVP SHOULD BE OFF. MONITOR ϕ LVC (TB2-9) ON THE SCOPE. VERIFY THAT THE WAVEFORM AGREES WITH FIG. 4.3. VERIFY THAT THE RISING AND FALLING EDGES ARE CLEAN, NO EXTRA PULSES OR OSCILLATIONS.

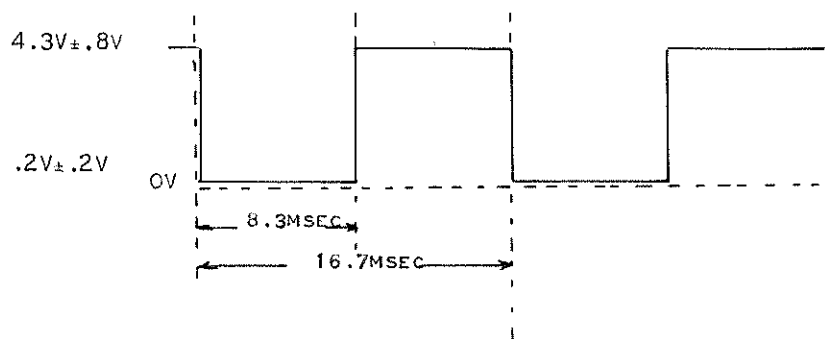


FIG. 4.3 ϕ LVC AND GVC TIMING

TEST INSTRUCTIONS

REV. 1	REV. 4	REV. 7	PRINTS TO 3EF1 4QA5 4EB2 4RA1	ENGINEER R.E. GRUBBS	GENERAL ELECTRIC SALEM, VA. U.S.A.	MICROSYNCHRONIZER ISOLATION MODULE
REV. 2	REV. 5	ISSUED 2-13-79				2 7 7 A 6 5 8 7
REV. 3	REV. 6	MADE BY R.E. GRUBBS				CONT. ON SH. 4 SH. NO. 3

- 4.4 SLOWLY DECREASE THE AC VOLTAGE UNTIL THE LED-LVP TURNS OFF AND STAYS OFF. THE AC VOLTAGE SHOULD BE $58\text{VAC} \pm 6\text{VAC}$.
- 4.5 SLOWLY INCREASE THE AC VOLTAGE UNTIL THE LED-GVP TURNS ON AND STAYS ON. THE AC VOLTAGE SHOULD BE $85\text{VAC} \pm 6\text{VAC}$. LED-LVP SHOULD BE ON. MONITOR ϕGVC (TB2-11) ON THE SCOPE. VERIFY THAT THE WAVEFORM AGREES WITH FIG. 4.3. VERIFY THAT THE RISING AND FALLING EDGES ARE CLEAN, NO EXTRA PULSES OR OSCILLATIONS.
- 4.6 SLOWLY DECREASE THE AC VOLTAGE UNTIL THE LED-GVP TURNS OFF AND STAYS OFF. THE AC VOLTAGE SHOULD BE $82\text{VAC} \pm 6\text{VAC}$.
- 4.7 SET THE AC VOLTAGE TO $130\text{VAC} \pm 0.1\text{VAC}$. MONITOR ϕLVC AND ϕGVC ON THE SCOPE AND MEASURE THE PHASE ERROR AS SHOWN IN FIG. 4.7.
- PHASE ERROR MUST BE LESS THAN $30 \mu\text{SEC}$.
 - VERIFY CLEAN SQUARE WAVES, NO EXTRA PULSES.

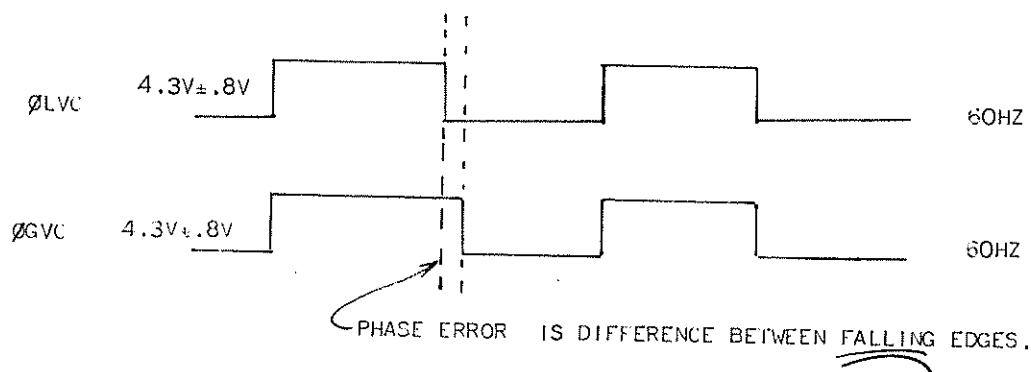



FIG. 4.7 PHASE ERROR

REV. 1	REV. 4	REV. 7	PRINTS TO 3EF1 4QA5 4EB2 4RA1	ENGINEER <i>R. E. Grubbs</i>	GENERAL ELECTRIC SALEM, VA. U.S.A.	TEST INSTRUCTIONS
REV. 2	REV. 5	ISSUED 2-13-79				MICROSYNCHRONIZER ISOLATION MODULE
REV. 3	REV. 6	MADE BY R. E. GRUBBS				277 A 6587 CONT. ON SH. 5 SH. NO. 4.

- 4.8 WITH THE AC VOLTAGE STILL SET TO 130VAC ± 0.1 VAC, READ THE VOLTAGE ON VLINE (TB2-12) TO DCOM TO BE 10VAC $\pm .5$ VAC. THE VOLTAGE ON VGEN (TB2-1) TO DCOM SHOULD ALSO BE 10VAC $\pm .5$ VAC.
- 4.9 REDUCE THE AC VOLTAGE TO ZERO VOLTS. CLOSE SW3. MONITOR THE VOLTAGE ACROSS NO 1 (+TB1-8) TO NO 2 (-TB1-7). THAT VOLTAGE SHOULD BE 125VDC ± 10 VDC. LEAVE SW3 CLOSED.
- 4.10 CLOSE SW2 AND VERIFY THAT NO 1 TO NO 2 IS STILL 125VDC ± 10 VDC. CLOSE SW1 AND VERIFY THAT NO 1 TO NO 2 IS NOW 0VDC $\pm .2$ VDC. OPEN SW2 AND VERIFY THAT NO 1 TO NO 2 IS NOW 125VDC ± 10 VDC.
- 4.11 REMOVE ALL VOLTAGES AND DISCONNECT CARD FROM TEST SETUP.

END OF TEST

REV. 1		REV. 4	REV. 7	PRINTS TO 3EF1 4QA5 4EB2 4RA1	ENGINEER <i>R.E. Grubbs</i>	TEST INSTRUCTIONS MICROSYNCHRONIZER ISOLATION MODULE 2 7 7 A 6 5 8 7 CONT. ON SH. FL. SH. NO. 5
REV. 2		REV. 5	ISSUED 2-13-79		GENERAL  ELECTRIC SALEM, VA. U.S.A.	
REV. 3		REV. 6	MADE BY R.E. GRUBBS			