

DATE <u>6/5/56</u>	TMC SPECIFICATION NO. S-296	REV. <u>B</u>
SH. <u>1</u> OF <u>9</u>		
COMPILED BY	TITLE: <u>PRODUCTION TESTING OF MODEL RTC</u>	JOB <u>E271P</u>

APPROVED O. W. A. J. J.

COMPLETE INSTRUCTIONS for the
PRODUCTION TESTING of the
MODEL RTC

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[Signature] A. J. J.

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1) Purpose and Description: "See Instruction Book"

2) Test Equipment Required:

- A. VTVM, Heath Kit Model V-6 or equivalent
- B. Audio Generator, Heath Kit Model AO-1 or Model AG-8
- C. Oscilloscope, Du Mont Model 304-H or equivalent
- D. AC VTVM, Heath Kit Model AV-2 or equivalent
- E. Frequency Meter, Heath Kit Model AF-1 or equivalent
- F. Distortion Meter, B.W. Model 400 or equivalent

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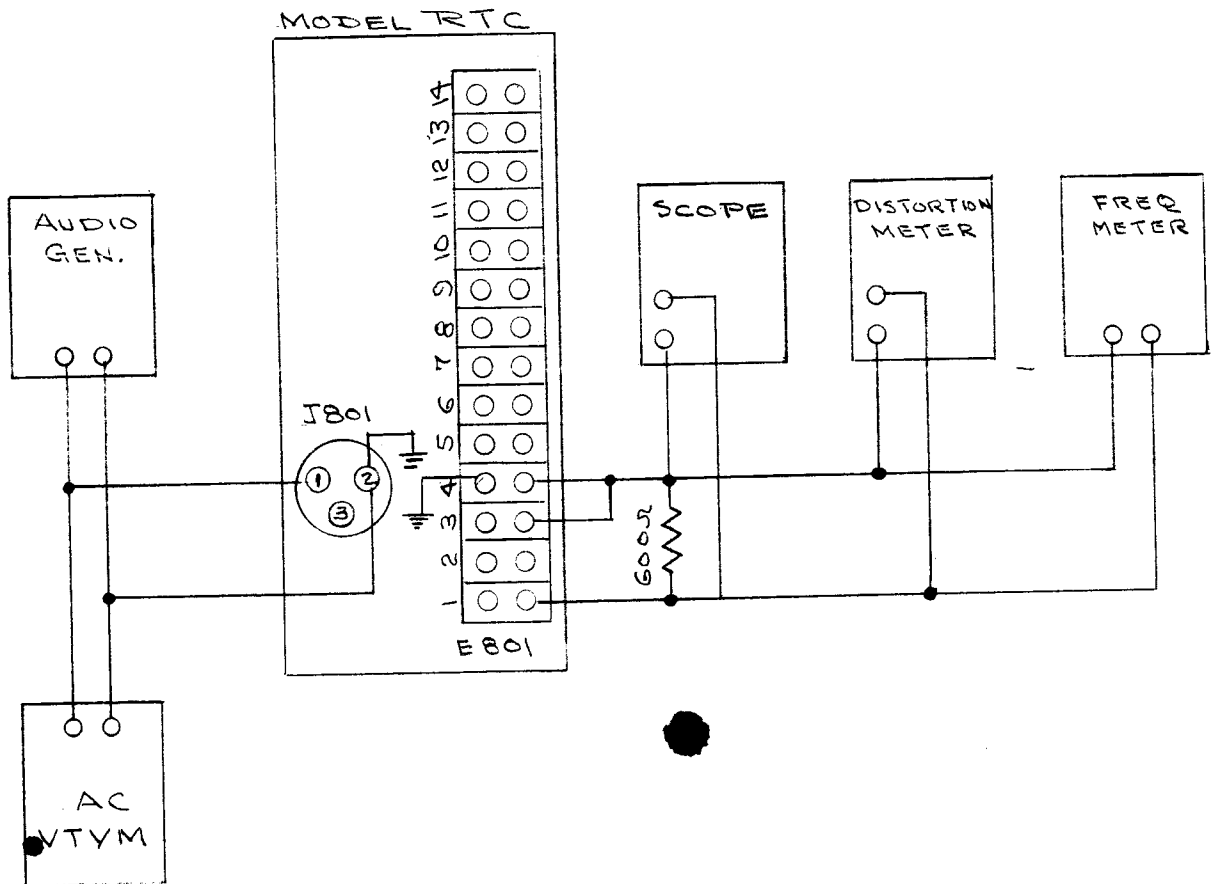
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3) General Instrument Layout:



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4) Test Instructions:

- A. Proceed as outlined in Test Sequence and Procedure, paragraph 5 to follow.
- B. Fill in blanks on Report Sheet, rejecting those units which do not meet the specifications stated herein.
- C. Sign Report Sheet and submit it to your supervisor.

5) Test Sequence and Procedure:

A. General Inspection

- 1. Inspect the total unit for obvious mechanical errors.
- 2. Inspect the total unit for obvious electrical errors.
- 3. Inspect all shielded wires. They may not touch the chassis, except where grounded.
- 4. Carefully inspect for loose screws, especially under the tube sockets.

B. Continuity Check

a) Check For Continuity (less than 1 ohm resistance)

FROM	TO
Pin 2 of E801	Pin 3 & 4 of T801
Pin 12 of E801	Pin 13 of E801
Pin 7 of V803	Ground

With Audio Gain
Control fully
Counter-clock-wise

b) Check for approx. 470 K ohms resistance at E801.

Pin 10 to pin 11.

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C. Initial Rapid Check

1. Connect 600 Ω resistor across terminal 1 and 3 of E801 and place a jumper between terminals 3 and 4 of E801.
2. Connect Audio Frequency Meter, Distortion Meter and oscilloscope to terminal 1 of E801, in respect to ground.
3. Connect Power, 110 VAC at 60 cps to J804 and turn on the power.
4. Throw the operate-stand-by switch to "operat ".
5. Quickly check B_2 -- appx. 222VDC to 250 V
 B_3 -- appx. 140VDC

This indicates that unusual drain does not exist due to faulty wiring. Check if pilot light is on and all filaments are being heated.

6. Place the function switch into 500 cps MCW position.
7. Plug in the key and depress.
8. Turn the Audio Gain Control fully clock-wise. The scope should read appx. 5.6V Peak-to-Peak, and the percentage Modulation Meter should read at least 100% or more.

D. V804 Output Amplifier and V802 Oscillator

1. Key the unit at a slow rate, 5 to 10 cps, and adjust the balance control referring to the scope.
2. Depress the key and measure the frequency. It should be between 450 and 550 cps. Measure the distortion. It must not exceed 3%.
3. Place the function switch to 1000 cps MCW position. Depress the key and measure the frequency. It should be between 925 and 1075 cps. Measure the distortion. It must not exceed 3%.
4. Place the function switch to 1500 cps MCW position. Depress the key and measure the frequency. It should be between 1300 and 1600 cps. Measure the Distortion. It must not exceed 3%.

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5. Lower the AC power to 95 volts. The oscillator must remain operative during this condition. Return the variac to 110 volts.
6. Place the function switch to "normal" position.
7. Turn the clip control fully clock-wise.
8. Measure the noise level. It must be not less than 40 db down.
9. Connect audio signal generator to Pin 1 of J801, set at 1000 cps and 1 millivolt. Slowly run up the gain until the scope will read, again, 5.6V Peak-to-Peak. The Audio Generator voltage under this condition should be approximately 2.4 millivolts.
10. Throw the function switch to "clip" position. The reading of the scope should remain approx. the same (100% modulation).

E. V802 Limiter - V801 Amplifier

1. Set the function switch to "normal" position.
2. Set the audio generator at 6 millivolt output.
3. Adjust the gain control for 100% modulation or 5.6 volts Peak-to-Peak at the scope.
4. Place the function switch to "clip" position and adjust the clip control in such a way that it will start to clip.
5. Raise the audio generator output to approximately 10 millivolts. The output at the scope should show a negligible amount of rise or no rise in voltage.

F. Relay Test

1. Plug head phones into J803. Set the audio gain fully clock-wise.

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AVS *AJS*

2. Return the output of signal generator to 2.4 millivolts and the tone must be heard in the phones.
3. Measure for continuity (less than 1 ohm resistance) at E801.
 - a. pin 13 to pin 14
 - b. pin 10 to pin 11
4. Apply a negative voltage approximately 15 V in series with 10 K ohms to pin 11. Throw the Operate-Stand-by switch into stand-by position. The tone must not be heard in the phones.
5. Short the pin 3 at J-801 to ground. The tone must again be heard in the phones, and the Relay K801 must then be in energized position.
6. Turn the power off and disconnect test equipment.

NOTE:

When all of the preceding tests have been successfully completed, the unit must be placed in its final form, the cabinet, etc., and prepared for shipment. One copy of each Report Sheet shall be enclosed with each Model RTC.

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SAMPLE
TEST REPORT SHEET
MODEL RTC

	<u>ACCEPT</u>	<u>REJECT</u>
TEST A: General Inspection	_____	_____
TEST B: Continuity Check	_____	_____
TEST C: Initial Rapid Check	_____	_____
TEST D: V804 Output Amplifier V802 Oscillator	_____	_____
TEST E: V802 Limiter V801 Amplifier	_____	_____
TEST F: Relay Test	_____	_____

Serial Number _____

Accepted _____

Date _____

Rejected _____

Tested by: _____

