

Lincoln Mark VII

EATC

Self Test

(Electronic Automatic Temperature Control 1984 – 1987)



The push button electronic automatic temperature control system (EATC), is standard equipment on the Lincoln Mark VII. With the use of a computer, the control assembly analyzes four major sensor inputs:

1. The temperature setpoint and mode selections
2. Cabin temperature
3. Ambient temperature
4. Engine temperature

Using the input from these sensors, the computer determines the correct conditions for the six outputs:

1. A/C compressor clutch
2. Blower speed
3. Blend door position
4. Mode door position
5. Panel/Defrost door position
6. F/A Recirculator door position

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The control head has a self test feature that aids in locating trouble in the EATC system. To get reliable results, the following procedure must be followed.

Turn the ignition switch to ON and turn the control head to OFF.

Raise the temperature setpoint to 90 degrees.

Wait 40 seconds.

If the green vacuum fluorescent display (VFD) begins to flash, then there is a malfunction in the blend actuator wiring, the actuator itself, or the control head.

If the orange light emitting diode (LED) begins to flash then there is a malfunction in one or more of the other actuators' wiring, the actuator (mode, PAN/DEF, or FA/REC) or the control assembly.

If no flashing occurs, lower the setpoint to 60 degrees and select DEF or the button all the way to the right.

Wait 40 seconds, look for a flashing VFD or LED.

If no flashing occurs, then no malfunctions in the actuator drive or feedback circuits have been detected. Whether or not flashing has occurred, the self test mode should now be entered for further diagnostic information.

SELF TEST MODE. To ensure accurate self test results, the above procedure must be followed before entering the self test mode. To enter the self test mode, push the off and defrost mode buttons simultaneously.

Within two seconds, push the AUTO button.

If an 88 is displayed then no malfunctions have been detected by the control assembly. If a control assembly detectable malfunction has occurred, the appropriate error code* will be displayed. The error code sequence(s) will continue until the COOLER button is pushed. When the COOLER button is pushed, the SYSTEM will revert to the AUTO mode at a temperature setpoint -1 from the setting before entering the self test mode. Always exit the self test mode by pushing the COOLER button before turning OFF the ignition switch. This procedure will ensure the proper resetting of the control assembly when the ignition is turned ON.

*ERROR CODES

CODE	SYMPTOM	POSSIBLE SOURCE
1	Blend door actuator is out of position. VFD flashes.	<ul style="list-style-type: none"> • Open circuit in one or more of the actuator leads • Actuator output arm jammed • Actuator inoperative • Control assembly inoperative
2	Mode actuator is out of position. LED flashes.	<ul style="list-style-type: none"> • Open circuit in one or more of the actuator leads • Actuator output arm jammed • Actuator inoperative • Control assembly inoperative
3	Pan/Def actuator is out of position. LED flashes.	<ul style="list-style-type: none"> • Open circuit in one or more of the actuator leads • Actuator output arm jammed • Actuator inoperative • Control assembly inoperative
4	Fresh air/Recirculator is out of position. LED flashes.	<ul style="list-style-type: none"> • Open circuit in one or more of the actuator leads • Actuator output arm jammed • Actuator inoperative • Control assembly inoperative
1, 5	Blend actuator output shorted. VFD flashes.	<ul style="list-style-type: none"> • Outputs A or B shorted to ground or the supply voltage or together • Actuator inoperative • Control assembly inoperative
2, 6	Mode actuator output shorted. LED flashes.	<ul style="list-style-type: none"> • Outputs A or B shorted to ground or the supply voltage or together • Actuator inoperative • Control assembly inoperative
3, 7	Pan/Def actuator output shorted. LED flashes.	<ul style="list-style-type: none"> • The actuator output is shorted to the supply voltage • Actuator inoperative • Control assembly inoperative
4, 8	Fresh air/Recirculator actuator output shorted. LED	<ul style="list-style-type: none"> • The actuator output is shorted to the supply voltage • Actuator inoperative • Control assembly inoperative

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	flashes.	
9	No failures found.	<ul style="list-style-type: none"> • Enjoy your car ☺
10, 11	A/C Clutch never on.	<ul style="list-style-type: none"> • Circuit 321 open. • BSC inoperative. • Control assembly inoperative
10, 11	A/C Clutch always on.	<ul style="list-style-type: none"> • Circuit 321 shorted to ground. • BSC inoperative. • Control assembly inoperative
12	System stays in full heat. Cabin temperature must be stabilized above 60°F for this test to be valid.	<ul style="list-style-type: none"> • Circuit 788, 470, 767, or 790 is open • The ambient or cabin temperature sensor is not working
13	System stays in full A/C.	<ul style="list-style-type: none"> • Remove control assembly connectors. Measure the resistance between pin 10 of connector #1 and pin 2 of connector #2. • If resistance is less than 3000 ohms, check the wiring and cabin and ambient temperature sensors. • If the resistance is greater than 3000 ohms, then replace the control assembly.
14	Blower always at maximum speed.	<ul style="list-style-type: none"> • Turn OFF ignition switch. Remove connector #2 from control assembly. Using a small screwdriver, remove terminal #5 from the connector. Replace connector, tape over terminal end and turn ON ignition switch. • If the blower is still on maximum speed then check circuit #184 and the BSC. • If the blower stops then the control assembly is inoperative.
15	Blower never runs.	<ul style="list-style-type: none"> • Circuit #184 shorted to the power supply. • BSC inoperative • Control assembly inoperative.