



UltraCheck-EZ™ Diagnostic Tool

EMERSON
Climate Technologies

NOTE

Only trained and qualified professionals familiar with ULTRATECH™ motors should service the motor and control unit.



The UltraCheck-EZ™ diagnostic tool allows service professionals to verify the proper operation of Emerson ULTRATECH™ motors without removal from the blower housing.

1. Disconnect or turn off AC power to the furnace, air handler, and/or other equipment being serviced.

2. Disconnect the four wire communication cable from the control unit communication connector [Figure 1].

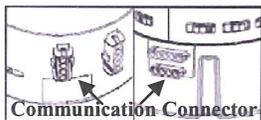


Figure 1

3. Connect the four wire connector of the UltraCheck-EZ™ diagnostic tool [Figure 2] to the control unit communication connector [Figure 1].

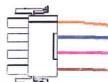


Figure 2

4. Attach one of the alligator clips of the UltraCheck-EZ™ diagnostic tool [Figure 3] to a proper ground source.



Figure 3

NOTE

There is no polarity on the alligator clips.

The UltraCheck-EZ™ diagnostic tool is equipped with a non-replaceable fuse. **DO NOT** connect the UltraCheck-EZ™ diagnostic tool to a power supply over 24VAC. Applying more than 24VAC will make the UltraCheck-EZ™ diagnostic tool inoperable.

5. Attach the other alligator clip [Figure 4] to a proper 24VAC source.



Figure 4

6. Reestablish power to the furnace, air handler, and/or other equipment being serviced.

NOTE

The power button [Figure 5] on the UltraCheck-EZ™ diagnostic tool sends a signal to the ULTRATECH™ motor to rotate when pressed. There may be a few second delay between the time the button is pushed and the motor begins to rotate. If the power button [Figure 5] doesn't illuminate when pressed, the UltraCheck-EZ™ diagnostic tool is not connected to a 24VAC supply or is inoperable.



Figure 5

The green LED [Figure 6] indicates that the ULTRATECH™ motor is communicating with the UltraCheck-EZ™ diagnostic tool. If the green LED [Figure 6] doesn't blink, the control unit should be replaced.



Figure 6

7. Use the scenarios below to determine needed action. Complete steps 8-11 before proceeding to the next check. Press the power button [Figure 5] on the UltraCheck-EZ™ diagnostic tool and wait few seconds for the blower to spin.

	Comments	Motor Blower	Green LED	Power Button
	If button does not illuminate when power button is depressed, verify 24VAC is available at alligator clips.	Not Rotating	Not Lit	Not Lit
	If 24VAC is verified, the UltraCheck-EZ™ diagnostic tool is inoperable.	Rotating	Blinking	Lit
	Motor and control unit are functioning properly.	Rotating	Not Lit	Lit
	Control unit should be replaced.	Not Rotating	Blinking	Lit
	Further investigation required. Refer to ULTRATECH Motor Troubleshooting Manual to verify motor operation.	Not Rotating	Not Lit	Lit
	Control unit should be replaced, refer to ULTRATECH Motor Troubleshooting Manual to verify the motor is still operational.	Not Rotating	Not Lit	Lit

8. Press the power button [Figure 5] again to stop the blower and turn off the UltraCheck-EZ™ diagnostic tool.

9. Disconnect or turn off AC power to the furnace, air handler, and/or other equipment being serviced.

10. Remove both alligator clips [Figure 7] from the 24VAC and ground connections.



Figure 7

11. Reconnect the four wire communication cable to the control unit communication connector [Figure 8].



Figure 8

12. Reestablish power to the furnace, air handler or system being serviced.

16X4W Troubleshooting

- 1) Ensure 16X4W translator box is connected to motor/control assembly.
- 2) Attach 4-wire-to-16X4W harness to UltraCheck EZ Motor Diagnostic Tool.
- 3) Connect UltraCheck tool to 16-pin connector of 16X4W translator box.
- 4) Apply power to motor/control assembly.
- 5) Press button on UltraCheck tool. Button should illuminate.
- 6) Observe the (3) LEDs (PW, RX and TX) on the 16X4W translator box.
 - A) Initially, PW and TX LEDs will blink rapidly.
 - B) The TX and RX will then blink in quick succession (as I call "galloping"), and the PW will stop blinking momentarily before blinking several short blinks (each blink equals 100CFM demand) and the motor will begin to run. The green LED on the UltraCheck tool will also blink with the PW LED.
 - C) **IF** PW and TX continue to blink rapidly after 10 seconds, either the wrong data file has been programmed into the 16X4W box, or the 16X4W box has not been programmed at all, and the motor will not run.

Additional 16X4W Troubleshooting Method

- 1) Connect 16X4W programming cable to 16X4W translator box and open the programming software.
- 2) Click on the "Read 16X4W Info" button on the bottom-center of the screen.
This will tell you what data file is currently loaded into the 16X4W box.

