Field Configuration and Testing

This section provides procedures for configuring, adjusting and testing various components of this unit.

- Fan Motor (B4) Testi Procedure
- Fan Motor Control (A177) Configuration and Testing
- Top Grille and Fan Motor Mounting Adjustment (Fan Clearance)
- Heat Pump Control (A175) Unit Nominal Capacity Code configuration

FAN MOTOR (B4) TEST PROCEDURE

The following procedure can be used to test the fan motor operation. A fully charged 9V battery will be required for this procedure. See figure 31 for complete test procedure.

This is a test that will verify that the motor does operate.

1. Verify main (240 volt) power if **OFF** to unit.
2. Remove both wires (brown and black) from the J2 terminal on the fan motor control (A177).
3. Room thermostat should be in **OFF** position (unit in idle mode - no heating or cooling demands)
4. Turn main power (240 volt) **ON** to unit.
5. Connect 9 Volt battery to fan motor plugs as noted in picture below.
6. Fan motor should run at a reduced fan speed.
7. If fan motor does not run, then replace fan motor assembly.

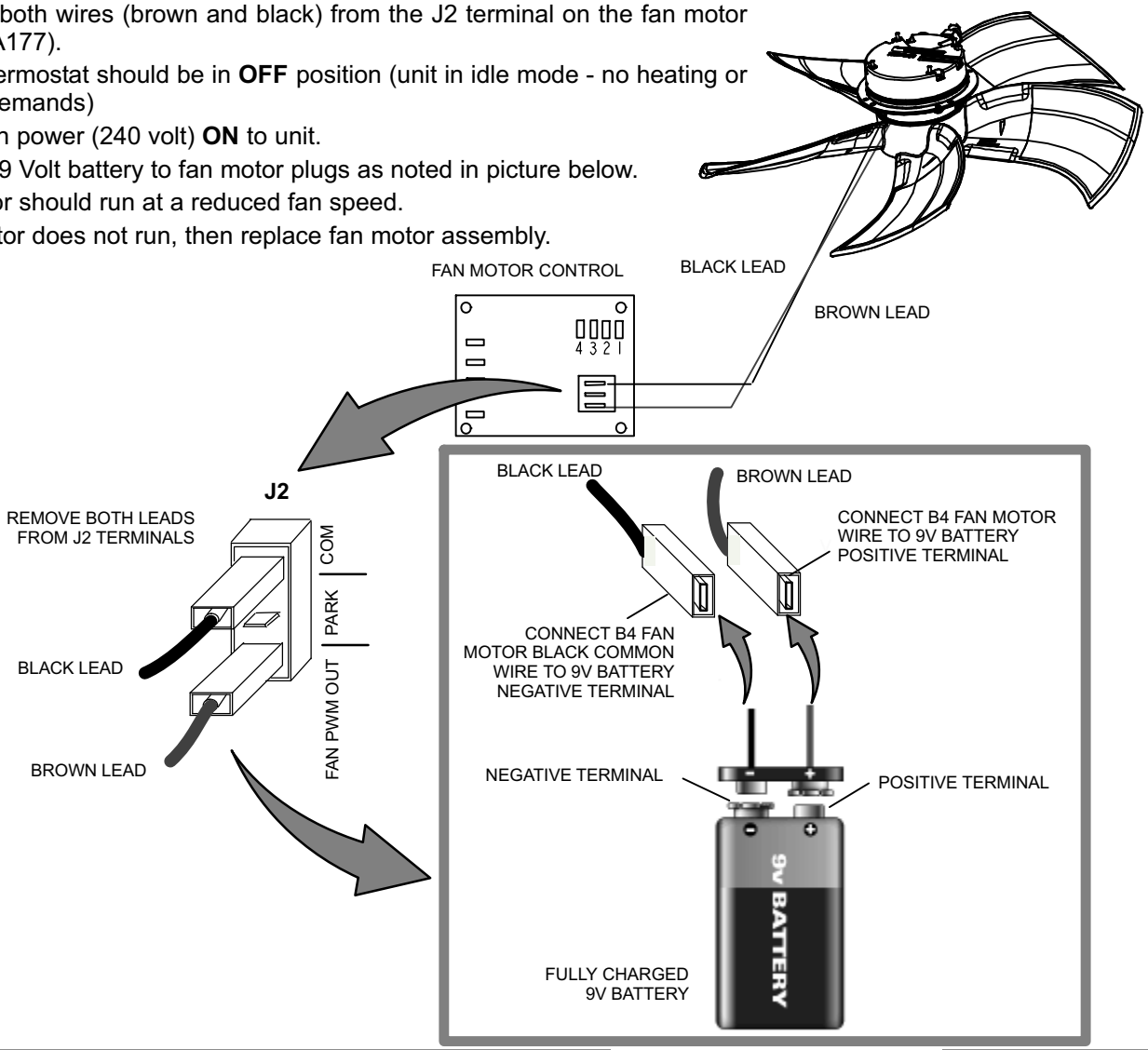


Figure 31. Fan Motor (B4) Test

FAN MOTOR CONTROL (A177) OPERATION, AND TROUBLESHOOTING

This section provides information concerning operation and testing of the fan control.

Fan Motor Control Sequence of Operation

During start up, the following sequence is followed:

1. Display error conditions (see table 17), if present.
2. If no errors are detected, the LED code indicating stage operation (see table 18) will display the applicable code and then a long pause.
3. The fan motor speed / RPM (revolutions per minute) indicator is displayed next (see table 16).
4. There is a short pause.

The above sequence will continue to repeat if a thermostat demand is present. See figure 32 for LED sequence and table 18 for description of flash and pause durations.

Table 16. Fan Motor Control RPM, LED Code and DC Voltage Output

Model	LED Code*	CFM Profile Pin Select				ECM1/Y1	
		4	3	2	1	RPM	(J2) DC Volt
XP17-024	5	OFF	ON	ON	ON	400	12.7
XP17-030	6	OFF	ON	ON	OFF	450	14.3
XP17-036, -042	8	OFF	OFF	ON	ON	600	19.2
XP17-048, -060	9	OFF	OFF	OFF	ON	675	21.6

** LED Code indicates fan motor control LED flash sequence. For example, LED Code 9 indicates 9 slow flashes and pause.*

Table 17. Fan Motor Control Error/Fault LED Codes

Unit Status	Motor Control LED	Possible Cause
Mismatched RPM	Fast flash with no pause	Internal feedback, PWM does not match target
CRC Failure	Constant ON.	Microcontroller CRC failure

Table 18. 19. Fan Motor Control Stage LED Indicator Codes

Unit Status	Unit Status	Fan Motor Control LED
One Stage Operation	**Low Stage — ECM1/Y1 ONLY**	One slow flash, then short pause.

Table 20. Fan Motor Control Flash and Pause Durations

Flash or Pause State	Duration
Flash Flash	Three flashes per second
Slow Flash	One flash per second
Short Pause	Two seconds of OFF time
Long Pause	Five seconds of OFF time

Testing

Use the following subsections to verify and test the fan motor control (A177).

Verifying Jumper Settings (J2)

The unit is shipped from the factory with the default fan motor speed setting (in RPMs) required for each specific model. Use the table 16 verify that jumpers are set correctly for the specific unit.

Verifying LED Status Codes

During start up, the fan motor control (A177) LED will display any error conditions. If error conditions exist then no other codes will display. If no error conditions are present, then the stage status and and RPM indicator are displayed. Fan motor speeds are not adjustable for a single stage outdoor unit (see table 16).

Verifying Correct DC Output Voltage (J2)

The following three methods can be used to determine whether the fan motor (B4) is operating at the correct RPMs based on unit size.

1. Use the information provided in table 16 to verify that all four jumper terminals are set correctly for the specific size unit.
2. Verify LED RPM indicator is displaying the correct flash sequence for the applicable size unit (see table 18).
3. Test DC voltage output on the fan motor control's J2 terminals (see figure 34) while under full load and verify the voltage read to the voltage listed in table 16 for the applicable size unit.
4. If no voltage is detected at the **J2** terminals, verify there is a Y1 demand at the thermostat and applicable voltages detected all fan motor control (A177) voltage inputs, see table 21.

If there is a demand, proceed to the next section for further testing.

Verifying Correct Input Voltage (ECM/Y1, ECM/Y2, ECM C and EXT ECM/R)

Using a voltmeter, check voltages on the following fan motor control inputs using table 21. Voltage will only be present during a thermostat demand. See figure 35 for test example.

If correct voltages are detected at applicable inputs during a demand, and no voltage is present at the J2 terminals, then fan motor control should be replaced.

Table 21. Fan Motor Control Voltage Inputs

Input	Call for Cooling	Voltage Present
ECM/Y1 and ECM C	YES	Between 24VDC and 32 VDC
	NO	NONE
EXT ECM/R and ECM C	YES	24VAC
	NO	NONE

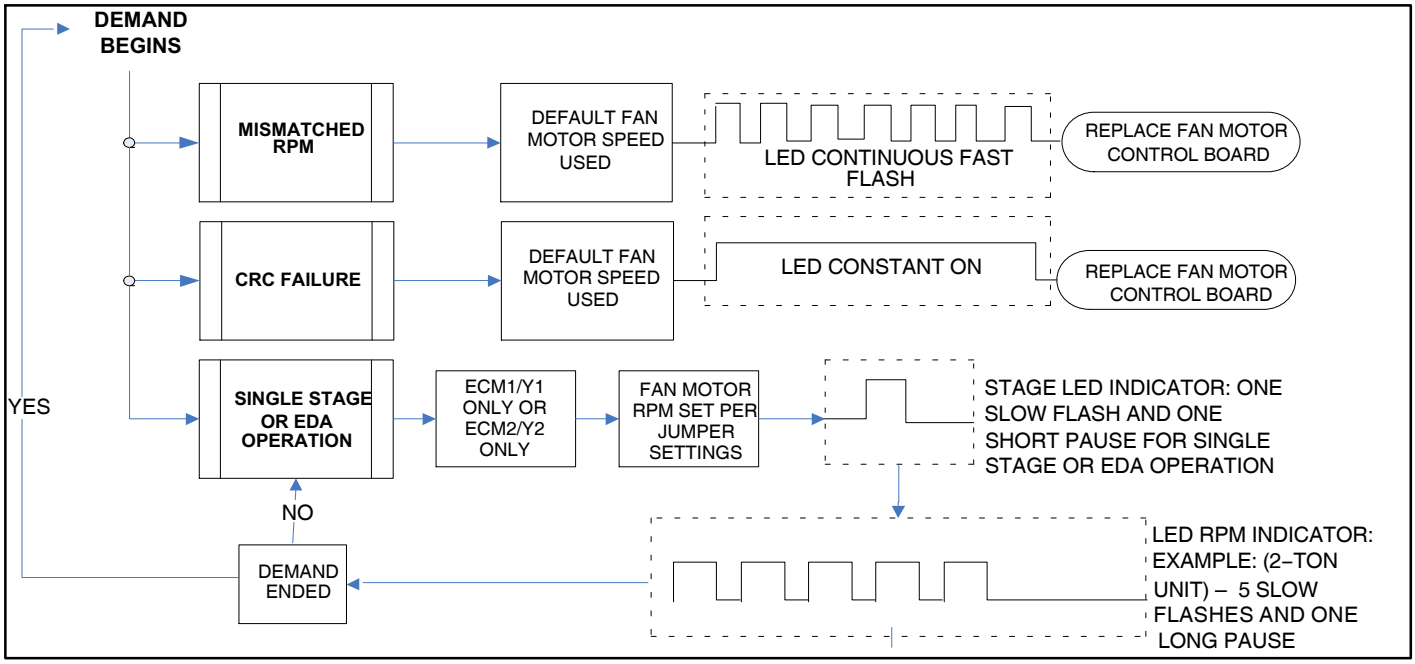


Figure 32. Fan Motor Control One Stage LED Sequence of Operation

TOP GRILLE OR FAN MOTOR MOUNT ADJUSTMENT FOR FAN CLEARANCE

Sometimes during shipping, either the fan motor mounting or top grille may become out of alignment. This may cause the fan motor blade to not clear the orifice ring. If this situation occurs, simply adjust either or both the fan motor mount or top grille positions to allow proper clearance. The top grille four fastener insertion points to the plastic top and motor mount locations are larger than the fasteners used to secure the grille and fan motor mounts. Use the procedures provided in figure 33 to adjust for fan clearance.

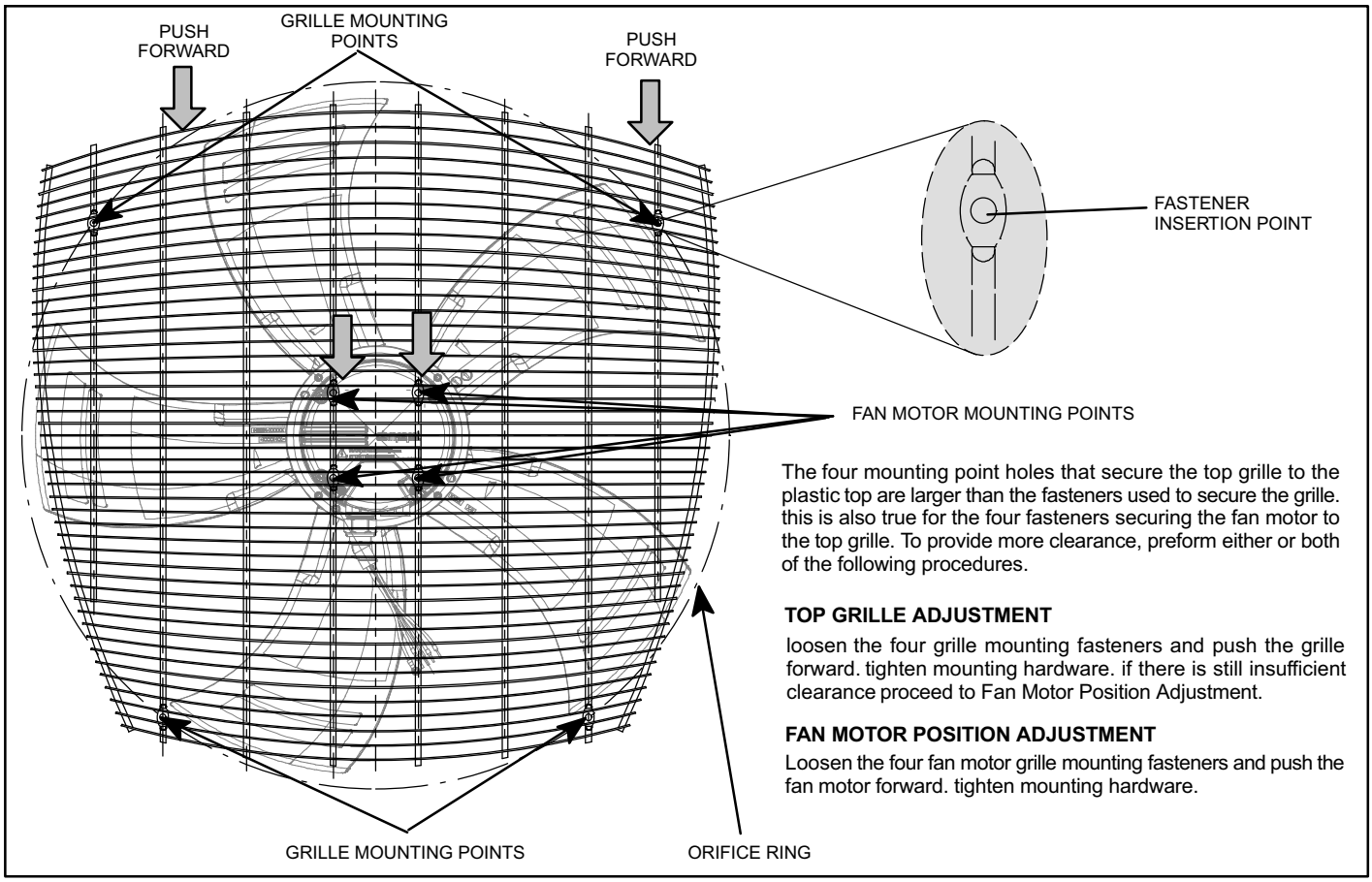


Figure 33. Fan Blade Clearance Adjustment

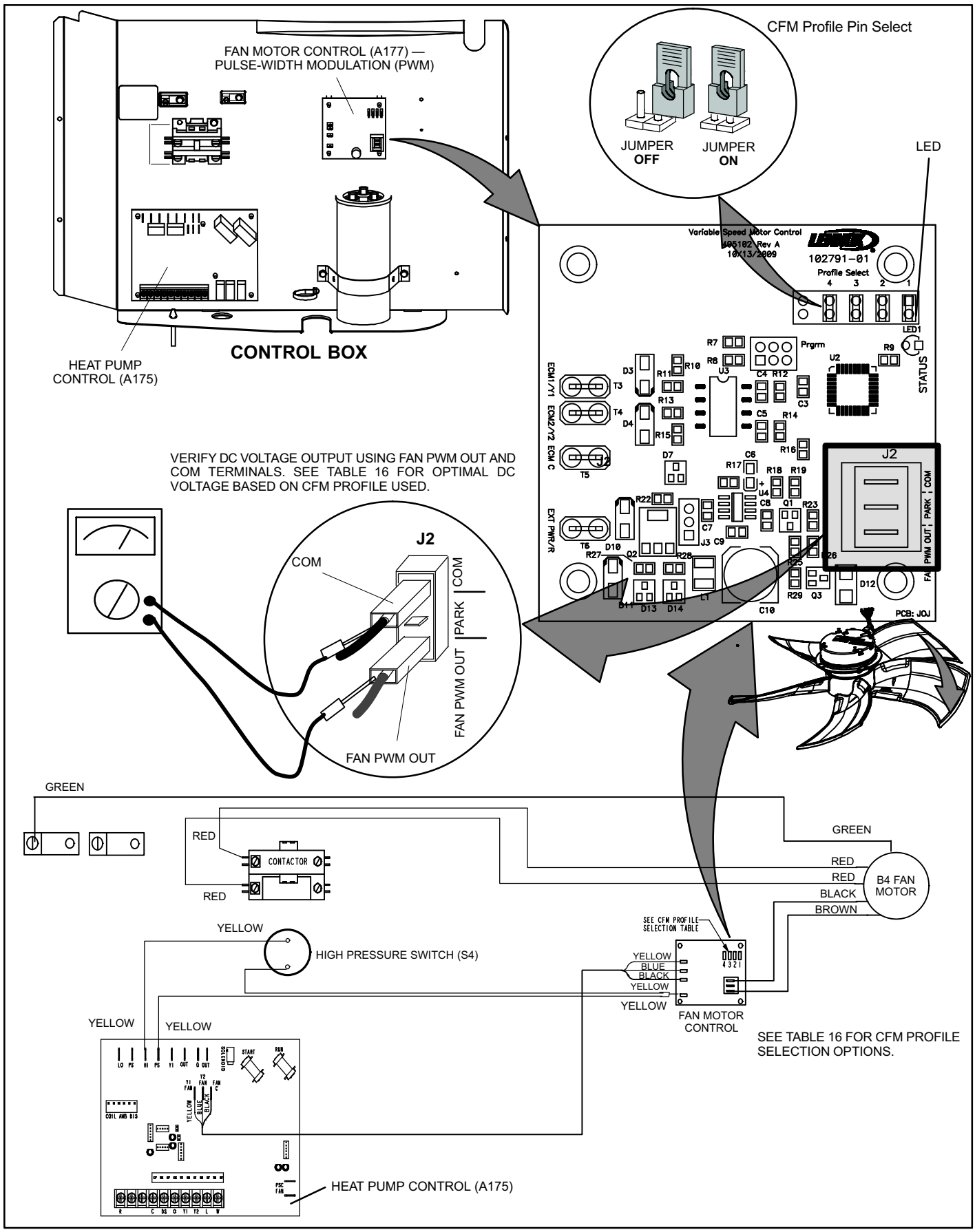


Figure 34. Fan Motor Control, Wiring, Jumper Settings, Testing and LED Location

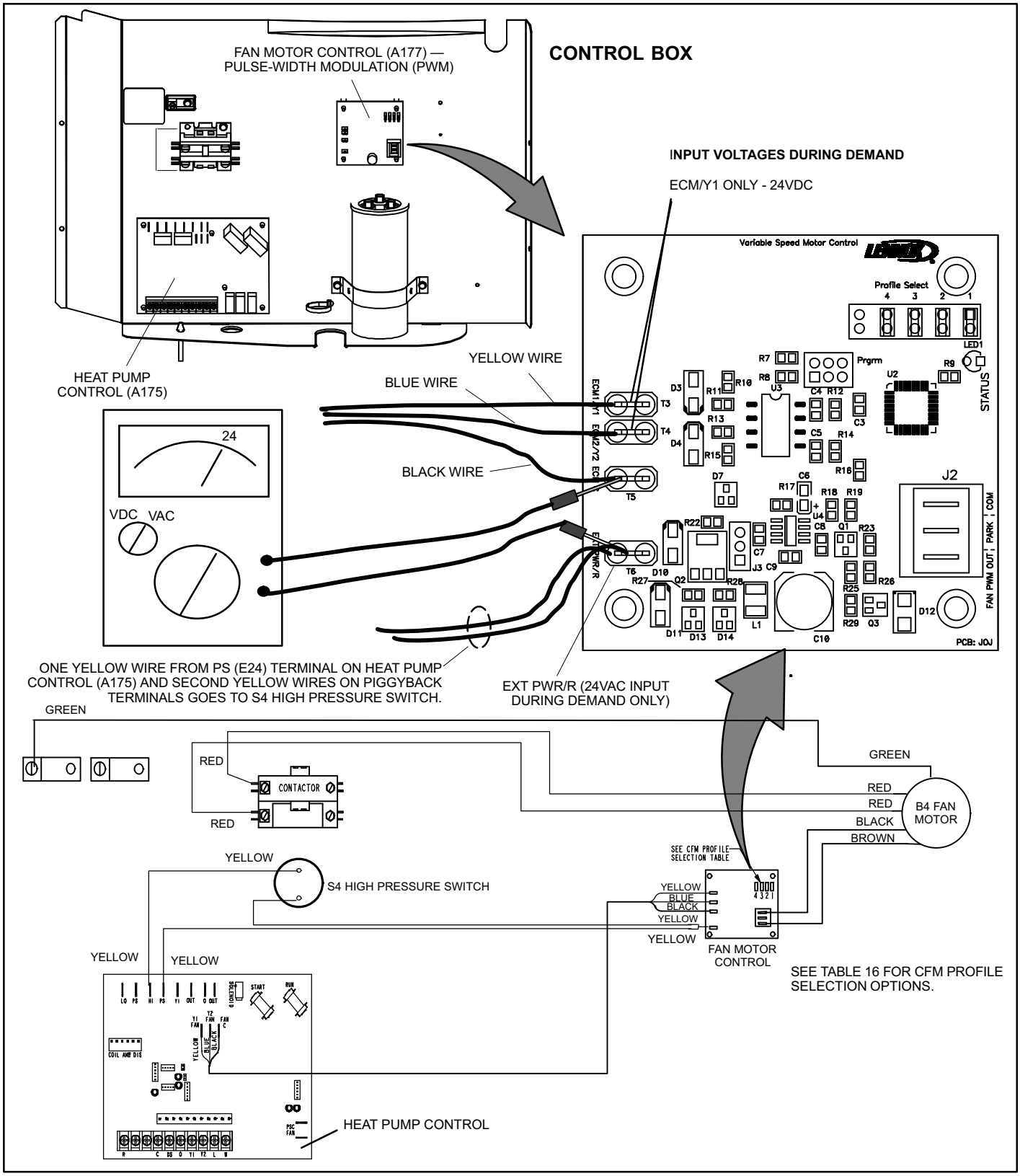
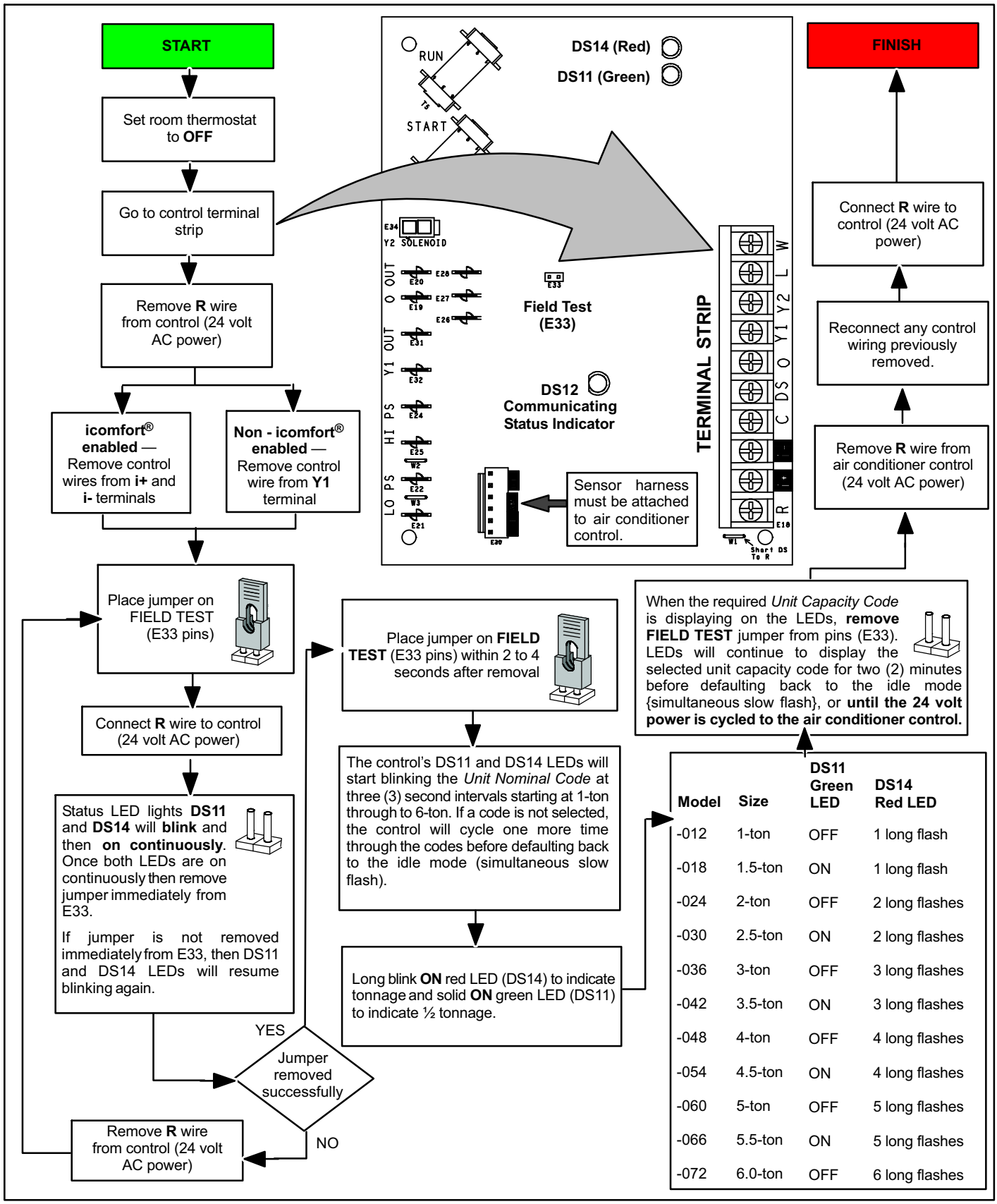


Figure 35. Testing for External Power to Fan Motor Control

HEAT PUMP CONTROL (A175) UNIT NOMINAL CAPACITY CODE CONFIGURATION

In a communicating system, if the room thermostat is indicating either a error code 313, *indoor and outdoor unit capacity mismatch* error code, or error code 34, *must program unit capacity for outdoor unit*. Use the procedure provided in figure 36 to set the unit nominal capacity code.



Model	Size	DS11 Green LED	DS14 Red LED
-012	1-ton	OFF	1 long flash
-018	1.5-ton	ON	1 long flash
-024	2-ton	OFF	2 long flashes
-030	2.5-ton	ON	2 long flashes
-036	3-ton	OFF	3 long flashes
-042	3.5-ton	ON	3 long flashes
-048	4-ton	OFF	4 long flashes
-054	4.5-ton	ON	4 long flashes
-060	5-ton	OFF	5 long flashes
-066	5.5-ton	ON	5 long flashes
-072	6.0-ton	OFF	6 long flashes

Figure 36. Heat Pump Control (A175) Unit Nominal Capacity Code Configuration

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