Field Configuration and Testing

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

- Fan Motor (B4) Test 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.

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.

Figure 31. Fan Motor (B4) Test
Table 16. Fan Motor Control RPM, LED Code and DC Voltage Output

<table>
<thead>
<tr>
<th>Model</th>
<th>LED Code*</th>
<th>CFM Profile Pin Select</th>
<th>ECM1/Y1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>XP17-024</td>
<td>5</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>XP17-030</td>
<td>6</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>XP17-036, -042</td>
<td>8</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>XP17-048, -060</td>
<td>9</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

* 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

<table>
<thead>
<tr>
<th>Unit Status</th>
<th>Motor Control LED</th>
<th>Possible Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mismatched RPM</td>
<td>Fast flash with no pause</td>
<td>Internal feedback, PWM does not match target</td>
</tr>
<tr>
<td>CRC Failure</td>
<td>Constant ON.</td>
<td>Microcontroller CRC failure</td>
</tr>
</tbody>
</table>

Table 18. Fan Motor Control Stage LED Indicator Codes

<table>
<thead>
<tr>
<th>Unit Status</th>
<th>Unit Status</th>
<th>Fan Motor Control LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Stage Operation</td>
<td>Low Stage — ECM1/Y1 ONLY</td>
<td>One slow flash, then short pause.</td>
</tr>
</tbody>
</table>

Table 20. Fan Motor Control Flash and Pause Durations

<table>
<thead>
<tr>
<th>Flash or Pause State</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Flash</td>
<td>Three flashes per second</td>
</tr>
<tr>
<td>Slow Flash</td>
<td>One flash per second</td>
</tr>
<tr>
<td>Short Pause</td>
<td>Two seconds of OFF time</td>
</tr>
<tr>
<td>Long Pause</td>
<td>Five seconds of OFF time</td>
</tr>
</tbody>
</table>

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.

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 RPM indicator are displayed. Fan motor speeds are not adjustable for a single stage outdoor unit (see table 16).
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.

TOP GRILLE ADJUSTMENT
Loosen the four grille mounting fasteners and push the grille forward. Tighten mounting hardware. If there is still insufficient clearance proceed to Fan Motor Position Adjustment.

FAN MOTOR POSITION ADJUSTMENT
Loosen the four fan motor grille mounting fasteners and push the fan motor forward. Tighten mounting hardware.
Figure 34. Fan Motor Control, Wiring, Jumper Settings, Testing and LED Location
ONE YELLOW WIRE FROM PS (E24) TERMINAL ON HEAT PUMP CONTROL (A175) AND SECOND YELLOW WIRES ON PIGGYBACK TERMINALS GOES TO S4 HIGH PRESSURE SWITCH.

INPUT VOLTAGES DURING DEMAND
ECM/Y1 ONLY - 24VDC

EXT PWR/R (24VAC INPUT DURING DEMAND ONLY)

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 an 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.

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