Variable Speed ECM to Azure® Motor Conversion (for 2.0, 2.3, 2.5, 3.0 ECM and EMERSON VSM Motors Only)

GLOSSARY

MOTOR POWER: 5-pin connector accepts 120 VAC or 240 VAC connector from defective ECM motor.

TO AZURE® MOTOR (COMMON, LOW SPEED, MEDIUM SPEED, and HIGH SPEED): Connections to Azure® motor.

ECM 2.0, 2.3, & 2.5 CONNECTOR: 16-pin signal connector accepts connector from defective 2.0, 2.3 or 2.5 ECM motor.

ECM 3.0 & EMERSON VSM: 4-pin signal connector accepts connector from defective 3.0 ECM or Emerson VSM motor.

CONFIGURATION SWITCHES: Used to program QwikSwap®.

LOW, MED, HIGH SPEED LEDs: Solid GREEN LEDs indicate which Azure® motor speed tap is energized.

STATUS LED: Flashing YELLOW LED indicates QwikSwap® is receiving line power.

COMMUNICATION LED: Solid RED LED indicates successful communication with the blower motor’s control board. OFF or flashing RED indicates a communication problem, such as a failed ECM air handler control board, faulty wiring or some other issue that will prevent the QwikSwap® from operating properly. Do not proceed with the installation unless this problem can be resolved.

DELAY LED: Solid BLUE LED indicates a delay-on-break is keeping the blower motor operating (for 1, 2 or 3 minutes) after the blower motor has been commanded to turn OFF (ECM 2.0 and 2.3 motors only).

INSTALLATION INSTRUCTIONS

1 Identify defective ECM version using label or pictures below

ECM 2.0, 2.3:
16-pin connector uses most pins.

ECM 2.5:
16-pin connector uses only 4 pins.

ECM 3.0 & EMERSON VSM:
4-pin signal connector

2 Identify ECM motor voltage

Examine 5-pin power connector on defective ECM motor.
- Jumper wire between pin 1 and pin 2: 120 VAC setting on Azure®.
- No jumper wires: 240 VAC setting on Azure®.

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DETERMINING REPLACEMENT MOTOR VOLTAGE
Verify QwikSwap® communications

Prior to replacing the defective ECM motor with a QwikSwap® board and Azure® motor, perform the following steps to verify proper performance when installed.

a. Turn thermostat system to OFF and FAN control to OFF.

b. Turn all humidity controls to OFF.

c. Disconnect power to the air handler.

d. Remove the 5-pin power plug and 16-pin (2.0, 2.3 & 2.5) or 4-pin (3.0 & Emerson VSM) signal plug from the defective ECM motor and reconnect to the mating connectors on the QwikSwap®.

e. For ECM 2.5, 3.0, and Emerson VSM motors only: Use the CONFIGURATION SWITCHES to select the rated horsepower of the defective ECM motor.

<table>
<thead>
<tr>
<th>CONFIGURATION SWITCH NUMBER &amp; POSITION</th>
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<tbody>
<tr>
<td>1</td>
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<tr>
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</tr>
<tr>
<td>1/8</td>
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<td>1/2</td>
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<tr>
<td>3/4</td>
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<td>1</td>
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</tbody>
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f. Reconnect power to the air handler. Leave the thermostat, blower and humidity controls OFF.

NOTE: THE EXISTING SYSTEM’S BLOWER CONTROL BOARD IS CONNECTED TO THE QWIKSWAP®, BUT THE QWIKSWAP® IS NOT CONNECTED TO ANY MOTOR AT THIS TIME.

g. A flashing YELLOW (STATUS) LED and solid RED (COM) LED indicate proper communication, proceed to the next step.

i. Following a short delay (which can take several minutes for the air handler board to send a command), the GREEN (HIGH) LED should initially light, and then settle on one of the GREEN (HIGH), (MED), or (LOW) LEDs. Operate the unit for a few minutes to make sure the air handler control board has accepted the QwikSwap® communication.

h. Set the thermostat to FAN ON.

i. Once all the steps above have been confirmed, proceed to Step 4 to complete the installation of the Azure® motor with the QwikSwap®.

Complete QwikSwap® and Azure® motor installation

Having confirmed successful communication between the QwikSwap® and the existing air handler control board, perform the following steps to install and wire the Azure® motor.

a. Disconnect power to the air handler.

b. Remove defective ECM motor (note the direction of rotation and motor voltage).

c. Install new Azure® motor (with same voltage and direction of rotation).

d. Connect the Azure® motor common wire to the MOTOR COM terminal on the QwikSwap®.

e. Connect three Azure® motor speed taps to the corresponding terminals on the QwikSwap®.

f. Attach the temperature sensor bulb to an elbow closest to one of the inlet distribution lines on the evaporator coil using the mounting hardware provided.

APPENDIX 1: ADJUSTING THE INPUT CONFIGURATION
(For 2.0 & 2.3 ECM motors only)

In rare cases, one or more of the blower motor activation signals may need to be ignored to prevent the blower motor from operating continuously. Follow this procedure when a GREEN LED is ON but it should be OFF. To adjust the configuration, set FAN control at the thermostat to OFF. The YELLOW (STATUS) LED should be flashing. One of the GREEN LEDs should be ON and the BLUE (DELAY) LED should not be lit. If the BLUE (DELAY) LED is lit the QwikSwap® is currently in DELAY-ON-BREAK mode and the QwikSwap® should turn OFF within 3 minutes, requiring no adjusting of the input configuration.

USE AN INSULATED TOOL. DO NOT TOUCH COPPER TRACES OR CONNECTIONS ON THE BOARD.

Step 1. While the QwikSwap® is connected and powered, set all CONFIGURATION SWITCHES to OFF.

Step 2. While the QwikSwap® is connected and powered, set all CONFIGURATION SWITCHES to:

<table>
<thead>
<tr>
<th>SWITCH SETTINGS</th>
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</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>OFF</td>
</tr>
</tbody>
</table>

Step 3. If the input configuration has been accepted, all of the GREEN LEDs should turn OFF and the RED (COM) LED and BLUE (DELAY) LED should be flashing alternately. If any of the GREEN LEDs are still ON, repeat Steps 1-3.

Step 4. Once the configuration has been set, and while the QwikSwap® is still powered, turn all CONFIGURATION SWITCHES to OFF to lock-in the setting. The RED (COM) LED should be solid ON and the YELLOW (STATUS) LED should be flashing to indicate success. All other LEDs should be OFF.

APPENDIX 2: CLEARING THE INPUT CONFIGURATION
(For 2.0 & 2.3 ECM motors only)

This procedure should only be required if the QwikSwap® was previously installed in another system or an input configuration was accidently set. This procedure will clear the input configuration stored memory.

USE AN INSULATED TOOL. DO NOT TOUCH COPPER TRACES OR CONNECTIONS ON THE BOARD.

Step 1. While the QwikSwap® is connected and powered, set all CONFIGURATION SWITCHES to OFF.

Step 2. While the QwikSwap® is connected and powered, set all CONFIGURATION SWITCHES to:

<table>
<thead>
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<td>1</td>
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<tr>
<td>OFF</td>
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</table>

Step 3. If the INPUT CONFIGURATION has been successfully cleared, the RED (COM) LED and BLUE (DELAY) LED should be flashing if not repeat Steps 1-3.

Step 4. Once the input configuration has been cleared, set all CONFIGURATION SWITCHES to OFF. The RED (COM) LED should be solid ON and the YELLOW (STATUS) LED should be flashing to indicate success. All other LEDs should be OFF.

APPENDIX 3: SETTING THE DELAY-ON-BREAK TIMER
(For 2.0 & 2.3 ECM motors only)

This procedure should be the final step of the installation of the QwikSwap®. This procedure will set the Delay-On-Break time feature and the time can be set to either 0, 1, 2, or 3 minutes. USE AN INSULATED TOOL. DO NOT TOUCH COPPER TRACES OR CONNECTIONS ON THE BOARD.

<table>
<thead>
<tr>
<th>DELAY-ON-BREAK TIME SWITCH SETTINGS</th>
</tr>
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<tbody>
<tr>
<td>0 minute (NO DELAY)</td>
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<tr>
<td>1 minute</td>
</tr>
<tr>
<td>2 minutes</td>
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<tr>
<td>3 minutes</td>
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Step 1. While the QwikSwap® is connected and powered, set the CONFIGURATION SWITCHES to the desired delay-on-break time using the switch positions shown in the table above.

Technical Support
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