

Installation and Maintenance Manual

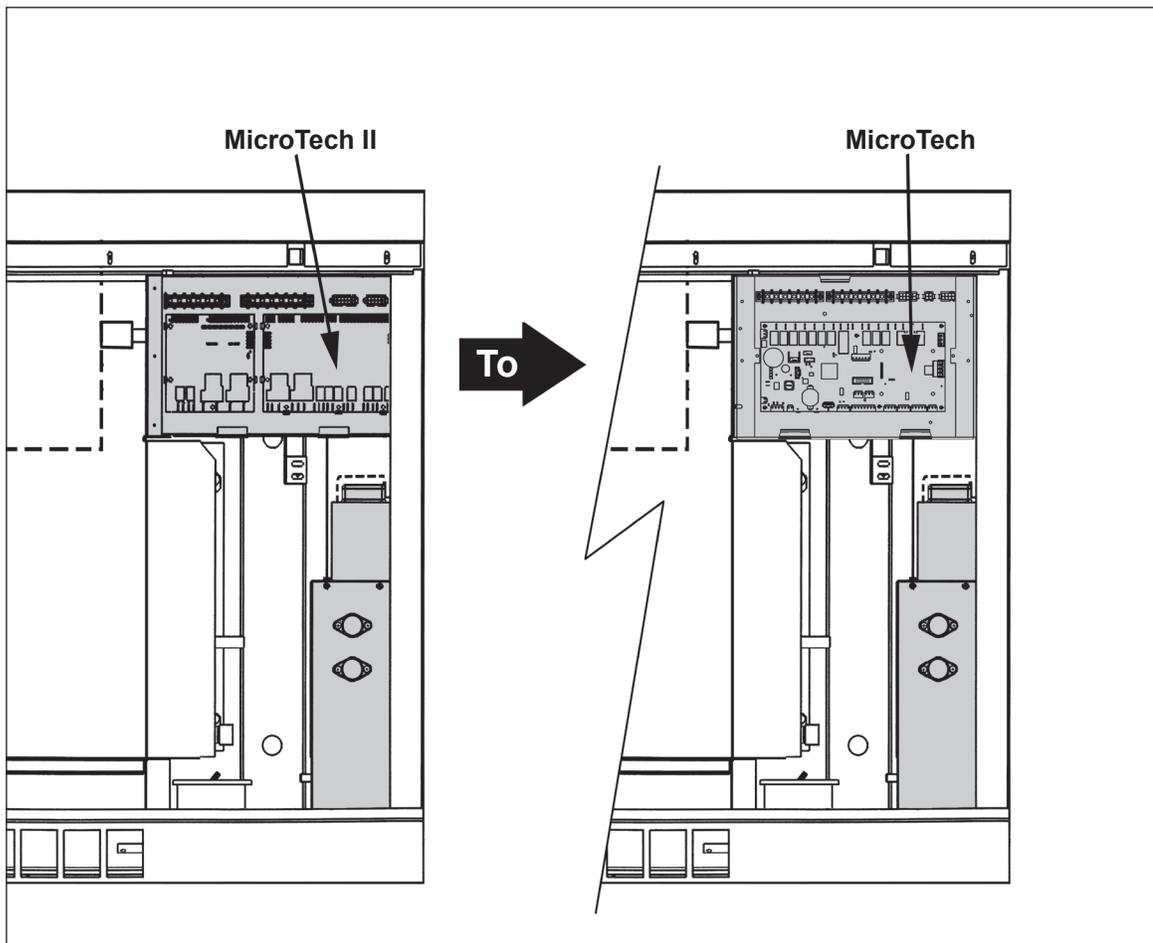
IM 1320-1

Group: **Applied Terminal System**

Document PN: **IM1320-1**

Date: **June 2024**

**Unit Ventilator MicroTech® II
Conversion to MicroTech UV Controller**



Hazard Identification Information

WARNING

This Installation bulletin is intended to provide the proper procedures to retrofit an existing Daikin Applied MicroTech II Controlled Unit Ventilator with new MicroTech Control. Failure to follow these procedures can cause property damage, personal injury or death. Additional, failure to follow these procedures can cause premature failure of this equipment or cause erratic unit operation, resulting in diminished unit performance. Disregarding these directions may further lead to suspension or revocation of the manufacturer's warranty.

DANGER

Danger indicates a hazardous situation which will result in death or serious injury if not avoided.

WARNING

Warning indicates a potentially hazardous situation which can result in property damage, personal injury, or death if not avoided.

CAUTION

Caution indicates a potentially hazardous situation which can result in a minor injury or equipment damage if not avoided.

Note: *Indicates important details or clarifying statements for information presented.*

CAUTION

Installation and maintenance are to be performed by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment.

WARNING

The installer must determine and follow all applicable codes and regulations. This equipment presents hazards of electricity, rotating parts, sharp edges, heat and weight. Failure to read and follow these instructions can result in property damage, personal injury or death. This equipment must be installed by experienced, trained personnel only.

CAUTION

Sharp metal edges are a hazard, use care when servicing to avoid contact with them.

Procedure

Note: *The following pictures and steps were designed around a floor mounted unit ventilator with self-contained compressorized cooling and modulating valve controlled hot water heating. It also has leading edge economizer and dehumidification. Steps for different units will vary. Consult TRC for further information: (315) 282-6434.*

1. Disconnect all electric power to the unit. Switch off the non-fused power disconnect switch ([Figure 1](#))

DANGER



Hazardous Voltage!

LOCKOUT/TAGOUT all power sources prior to wiring or servicing the unit. Hazardous voltage can cause serious injury or death. Disconnect electric power before servicing equipment. More than one disconnect may be required to de-energize the unit.

Figure 1: Non-Fused Disconnect Switch

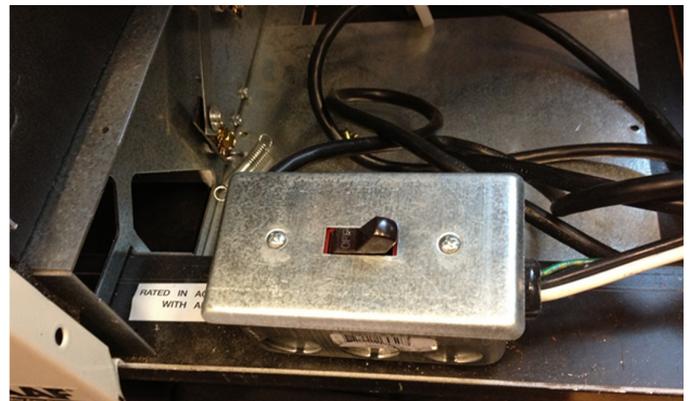


Figure 2: View of Existing MicroTech II Control Box



- Disconnect all wire terminal connections from the MicroTech II control base board and expansion module.

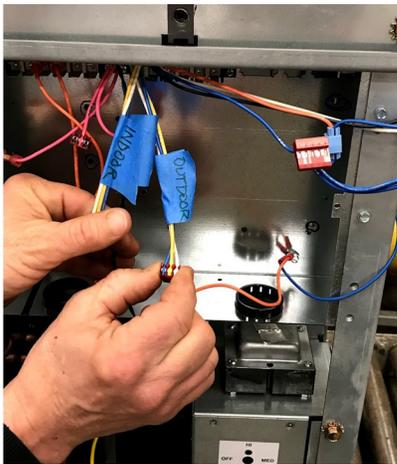
Note: Label and tag the existing wire plugs for the Indoor Humidity Sensor and Outdoor Humidity Sensor as they are disconnected (Figure 3).

Indoor Humidity Sensor (S6) and Outdoor Humidity Sensor (S8)

- Sensors S6 and S8 terminate on terminals J2-1 through J2-6 on the MicroTech II expansion module.

Note: Not all units have humidity sensors.

Figure 3: Label and Tag Indoor Humidity Sensor (S6) and Outdoor Humidity Sensor (S8)



- Completely remove the 1K temperature sensors, [Outdoor Air Temp (OAT), Room Air Temp (RAT), Discharge Air Temp (DAT)]. See note below.

- Outdoor Air Temperature Sensor (S1)
- Room Air Temperature Sensor (S2)
- Discharge Air Temperature Sensor (S3)
- Sensors S1, S2 and S3 terminate on terminals J8-3, J8-4, J8-10 and J8-13 & J8-14 on the MicroTech II base board.

Note: Some units may have more sensors than are listed here. All sensors will need to be replaced with the 10K sensors included with the retrofit kit. The new MicroTech platform will use the 10K sensors included with the retrofit kit. The existing sensor wiring can be used in place of the wires included with the kit, or used for pulling through the new 10K thermistor wires.

- Remove the control box enclosure by removing the four (4) screws holding it to the unit frame. Retain these screws for attaching the replacement MicroTech retrofit kit control box.
- Disconnect the LUI/keypad cable from the MicroTech II base board and any subsequent components. Remove the top panel holding the LUI/keypad.

Note: The existing LUI/keypad and time clock are not compatible with the new MicroTech control board. If an LUI is desired, there is a newer one that can replace it. The new MicroTech board does not require an LUI, but is often used with one as a preference. The new MicroTech board also has a built-in time clock.

Figure 4: Remove the Top Panel with the MicroTech II LUI, (Shown with Optional Time Clock and Override Switch)



- Label and tag, then clip the (orange & blue) wires from the freezestat, close to their termination points on the MicroTech II base board.

Freezestat (T6)

- The Freezestat (T6) terminates on terminals J9-4 and J9-8 on the MicroTech II base board.

Notes:

- On some units, a refrigerant Freezestat (T4) may be used. Consult the existing schematic to determine whether or not these Freezestats are used.
- The orange and blue Freezestat wires will be re-used with the new MicroTech retrofit kit.

Figure 5: Labelled, Tagged and Clipped Orange and Blue Freezestat Wires



Control Box

9. Locate and attach the MicroTech retrofit kit control box in the same position as the previously removed box. Secure the control box with the same four (4) screws as removed in step 5.

Note: To simplify installation many of the I/O points are pre-wired and bundled.

Figure 6: Install the MicroTech Retrofit Kit Control Box

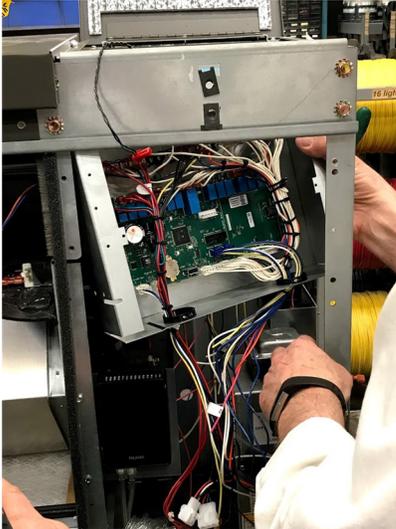
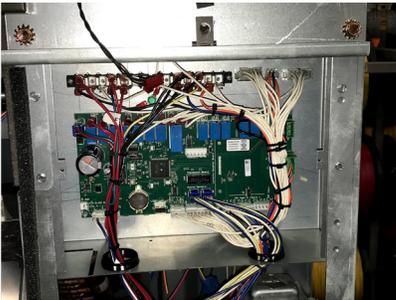


Figure 7: Installed MicroTech Retrofit Kit Control Box



10. Mount the three (3) relays supplied with the retrofit kit to the inside of the existing transformer control box (Figure 8 and Figure 9).

Notes: 1. Relays provided on units with PSC motors only. For units with EC motors, skip to step 13.

2. Removing the transformer control box from the unit prior to mounting the relays will make installation of the relays easier.

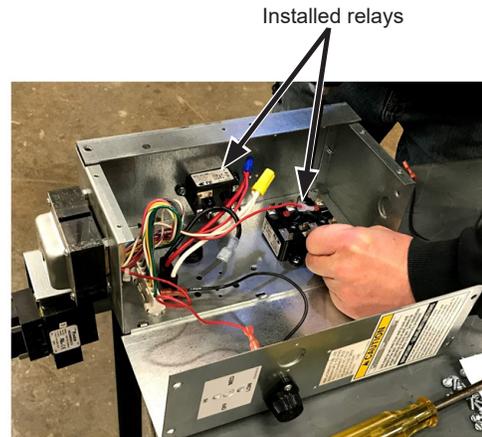
11. It is recommended that the non-fused disconnect switch be repositioned further to the left to provide added clearance.

Note: If the unit has an optional CO₂ sensor, removing the sensor and its mounting bracket will make repositioning the disconnect switch easier.

Figure 8: Installation of Fan Speed Relays in Transformer Control Box

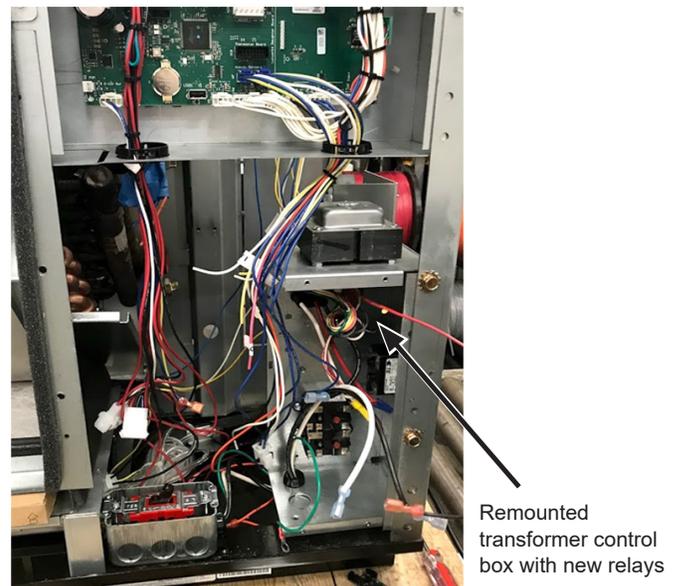


Figure 9: Relays Installed in Transformer Control Box



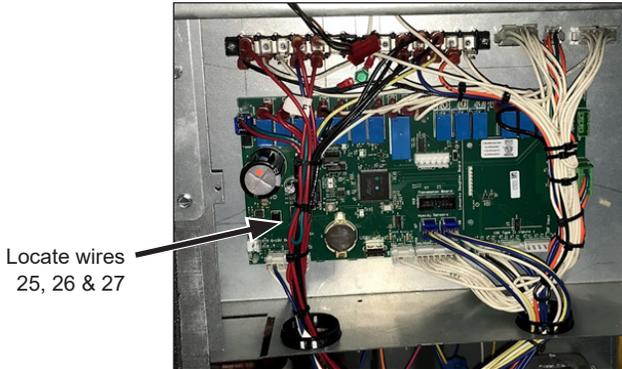
12. Remount the transformer control box with the three (3) new relays.

Figure 10: Transformer Control Box with Relays, with Disconnect Switch Moved to the Left



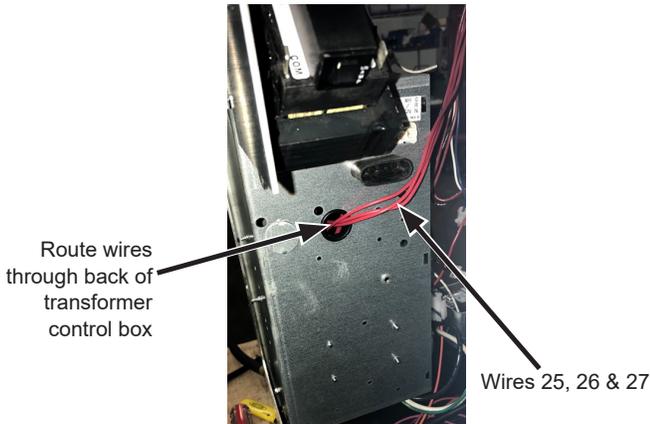
13. Locate wires marked 25, 26 and 27 in the control box (located within the wire bundle on the left).

Figure 11: Locate Wires 25, 26, and 27



14. Feed wires 25, 26 and 27 through the back of the transformer control box (Figure 12).

Figure 12: Feed Wires 25, 26 and 27 Through the Back of the Transformer Control Box



15. Connect wires 25, 26 and 27 to the terminal pins on the Hi-Med-Low fan relay:

- a. 25 to LOW
- b. 26 to MED
- c. 27 to HI

Note: On units with EC motors, wires 25, 26 and 27 connect directly to DO3, DO2 and DO1 respectively.

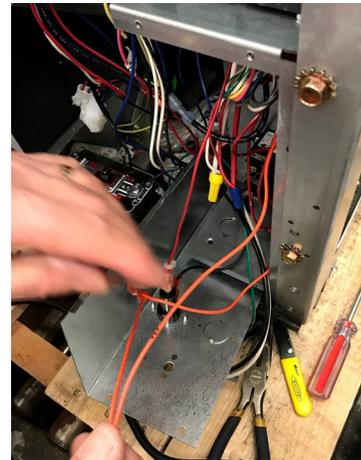
Figure 13: Connect Wires 25, 26 and 27 To Terminal Pins on the Fan Relay



16. Connect (Orange) wires 25A, 26A and 27A from the kit, to the proper terminal pins on the relays.
 - a. 25A to LOW
 - b. 26A to MED
 - c. 27A to HI

Note: On units with EC motors, wires 25, 26 and 27 connect directly to the 16 pin connected to the motor.

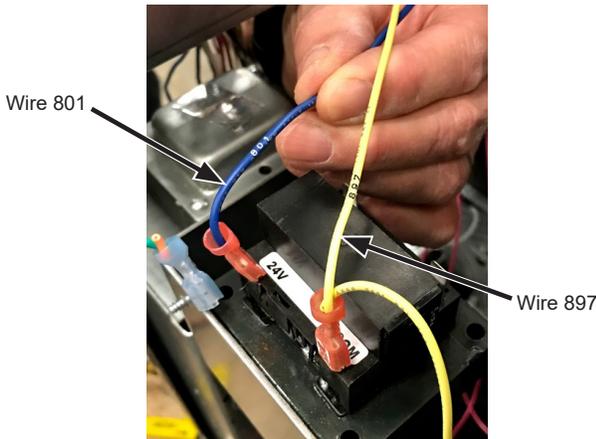
Figure 14: Orange Wires 25A, 26A & 27A



17. Remove the existing low voltage transformer wires and replace with those found in the new MicroTech control board kit.
 - a. New wire 897
 - b. New wire 801
18. Connect replacement wires 897 and 801 to the top of the existing transformer as shown in Figure 15 on page 6.

Note: This will provide 24VAC power to the terminal strips located above the MicroTech controller.

Figure 15: Connect Replacement Wires 897 & 801 to the Transformer



19. Remove the existing green ground wire and replace it with the new yellow ground wire from the kit, [Figure 16](#).

Figure 16: Replace Green Ground Wire with Yellow Ground Wire Provided with Kit

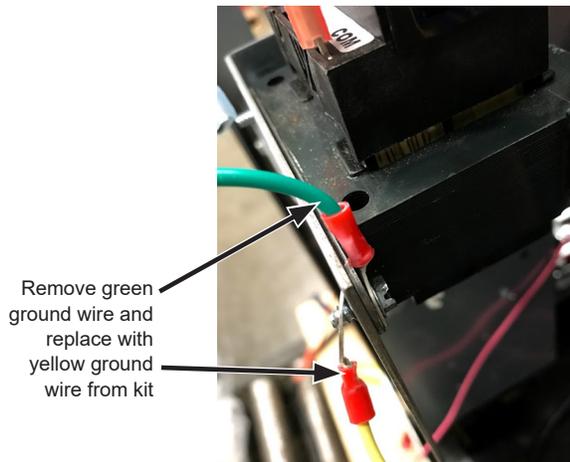
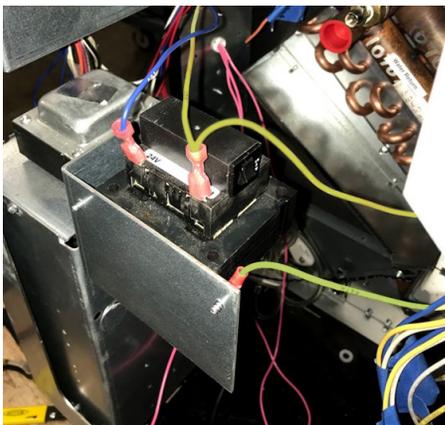


Figure 17: Transformer with New Replacement Wires

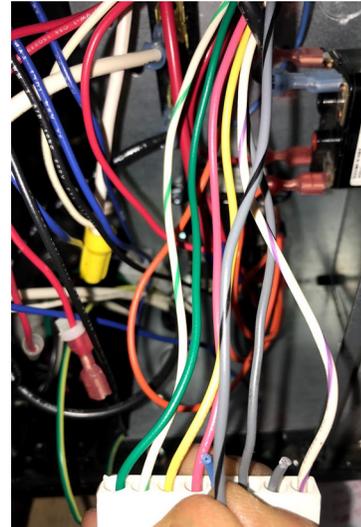


20. Connect the remaining fan relay wiring connections to their relay terminal pins by matching the proper wire color of the existing wires against the colors detailed on the MicroTech II wiring schematic. Land them on the associated relay terminal pin per schematic.

Note: Wire colors will vary depending on unit size and/or motor type: Refer to the applicable MicroTech wiring schematic.

- a. Green
- b. White
- c. Yellow
- d. Pink
- e. Blue
- f. Gray
- g. Gray w/Black Stripe
- h. White w/Violet Stripe

Figure 18: Existing X1 Wire Harness



21. To complete the fan motor relay wiring, connect the existing black wire connected to pin 1 of the motor to terminal 4 of the High Speed Relay (RH). Connect Black 210 to RH on terminal 5 and to the Medium Speed Relay (RM) terminal 4. Connect 211 to RM on terminal 5 and the Low Speed Relay (RL) terminal 4.

Note: This step is required for units with PSC motors only.

22. Locate the black wire connected to the fuse and the Unit Power Switch (SW1) as seen in [Figure 19 on page 7](#).

Figure 19: Fused Wire Harness on Transformer Control Box from SW1



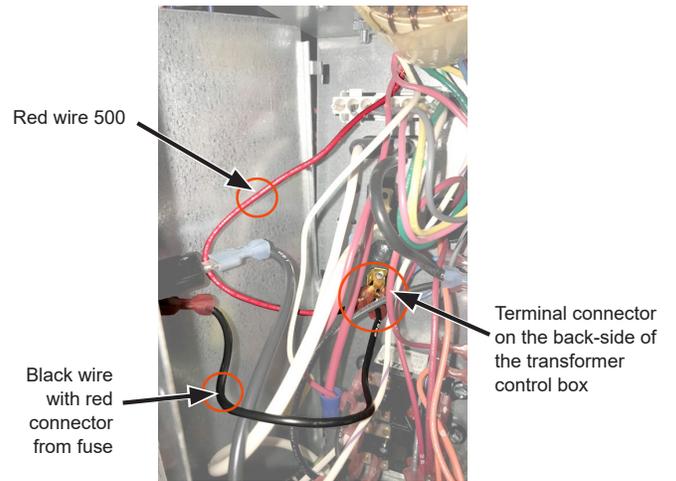
Figure 22: Fused Power from SW1 Tying Into Red Wire (500)



Figure 20: Transformer Control Box with Wiring from SW1



Figure 23: Detail



- 23. Connect the opposite end of the black wire from the fuse (with the red connector) to the back-side of the transformer control box as shown in [Figure 23 Detail](#).
- 24. Connect the red wire (500) to the matching terminal connector as shown in [Figure 23 Detail](#).

- 25. Replace the front panel to the transformer control box.

Figure 21: Black Wire with Red Connector from Fuse

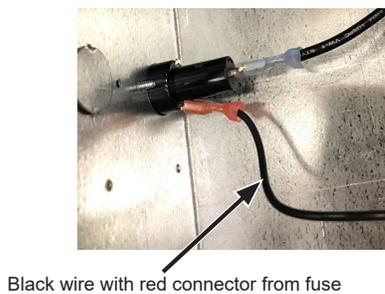
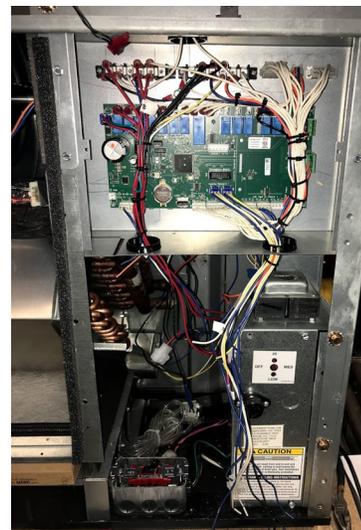


Figure 24: Transformer Control Box with Front Cover Installed



Actuators

26. Disconnect the outside air damper actuator harness (wires 814, 815, 816).

Figure 25: Disconnect Floating-Point OA Damper Actuator Wires



27. Remove the existing floating-point OA damper actuator.
 28. Install the separately purchased Belimo proportional control actuator.
- Note:** *The existing actuators are not compatible with the new control board.*
- a. Adjust the outside air to 0% or the spring-return OA damper is in the fully closed position.

Figure 26: Left End Compartment F&BP Damper Actuator and Economizer Air Damper Actuator



29. Connect the Molex with the new jumper conversion harness provided with the retrofit kit.

Figure 27: Retrofit Kit Wiring Harness for OA and F&BP Damper Actuators



30. Disconnect the F&BP damper actuator on units equipped with F&BP dampers.
31. Remove the existing F&BP damper actuator.
32. Install the separately purchased Belimo proportional control actuator.

- Note:** *The existing actuators are not compatible with the new control board.*
- a. Replace the F&BP damper wires 840, 841 and 842 with 840A, 841A and 842A.
 - b. Set the F&BP actuator to full bypass (0%) by sending power to the actuator until it is in the fully open position.

- Note:** *For units with modulating water valves, replacement actuators must be ordered separately. A similar process to the F&BP damper actuator should be followed for replacement. For wiring, consult the replacement schematic.*

Figure 28: Modulating Valve Actuator



33. Route all wires from the damper actuators to the control box and in through the left grommet opening.

Figure 29: MicroTech Controller Shown with Wire Bundles Passing Through Left and Right Grommet Holes



Humidity Sensors (If Applicable):

34. Splice the outdoor air humidity and Indoor Air Humidity sensors to the new MicroTech terminal ends.

Note: *MicroTech II units have connectors on these wires that must be cut off.*

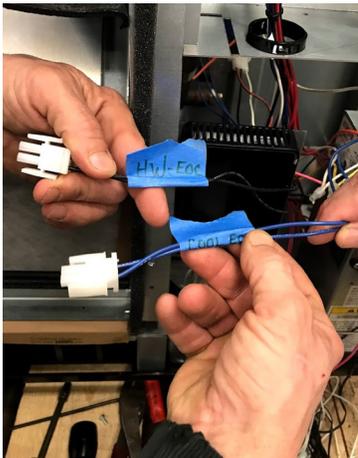
EOC Valves (If Applicable):

Note: *End of Cycle (EOC) valves will be present on F&BP units with hydronic coils. Existing EOC valves can be used with the new MicroTech controller.*

35. Snap-in the Molex connection harnesses from the retrofit kit into the existing valve connector ends (Figure 30).

Note: *The same Molex-to-Molex connector will be present on units equipped with modulating hydronic valves.*

Figure 30: EOC Valve Connectors



Discharge Air Temperature Sensor

Note: *The existing discharge air temperature (DAT) sensor is a 1K thermistor. The replacement DAT sensor provided with the retrofit kit is a 10K thermistor.*

- 36. Remove the front-center panel from the unit to access the fan wheels.
 - a. Remove the foil tape on the fan housing that secures the existing 1K DAT sensor.

Figure 31: Remove Foil Tape To Access 1K DAT Sensor



Note: *The 10K DAT sensor provided with the kit is pre-wired but the existing DAT wire can be reused.*

- b. Replace the 1K thermistor with the retrofit kit 10K thermistor and secure with foil tape.
- 37. Route the new thermistor wiring through the coil-partition grommet and through the right-side unit end compartment.

Figure 32: Route 10K Sensor Wiring Into the Right-Hand End Compartment

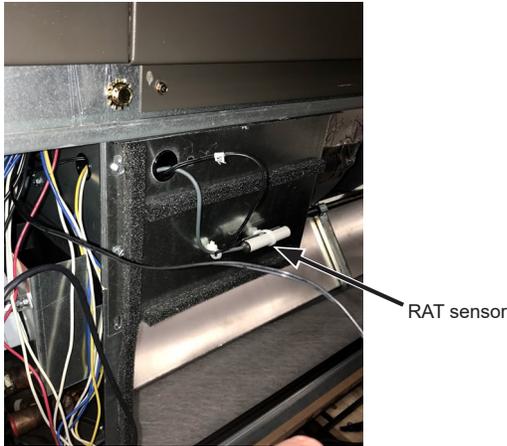


38. Plug the 10K thermistor connector to terminal H9 (pins 1 & 2) on the MicroTech control board. Refer to Figure 36 on page 11

Room Air Temperature Sensor

39. Remove the room air temperature sensor (Figure 33). Replace it with the 10K replacement included with the retrofit kit.

Figure 33: RAT Location



Note: The 10K RAT sensor provided with the kit is pre-wired but the existing RAT wire can be reused.

40. Route the new RAT wiring through the coil-partition grommet and through the right-side unit end compartment.
41. Plug the 10K RAT connector to terminal H9 (pins 3 & 4) on the MicroTech control board. Refer to Figure 36 on page 11

Outside Air Temperature Sensor

Note: The outside air temperature sensor is positioned in the OA intake air stream on the rear of the cabinet (Figure 34).

42. Remove the mounting fasteners located in the right and left end compartments and move the unit away from the wall to gain access to the OAT sensor.
 - a. Or, remove the louver to access the sensor through the wall opening from the outside of the building.

Figure 34: OAT Location



43. Remove the outside air temperature sensor and replace it with the OAT included with the retrofit kit.

Note: The OAT provided with the kit is pre-wired but the existing OAT wire can be reused.

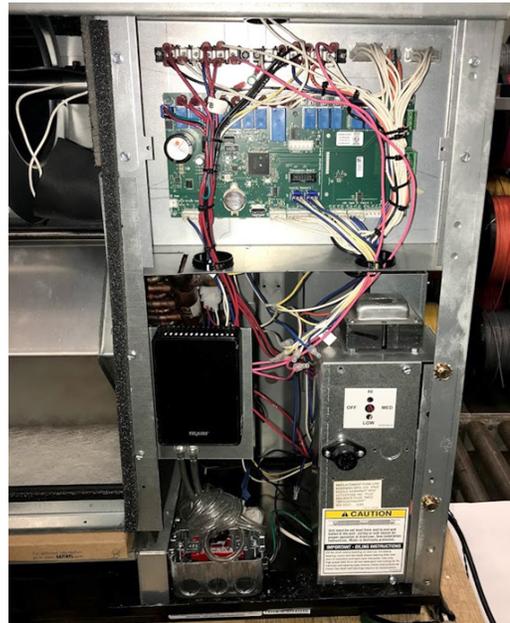
44. Plug the OAT sensor connector to terminal H10 (pins 1 & 2) on the new MicroTech control board. Refer to Figure 36 on page 11
45. Plug the wires from the existing freeze-stat into the new MicroTech control board on terminal H5 (pin 2).

Note: The grommet that allows passage of the freeze-stat wires into the control box may have clearance issues. If so, remove the screws holding the control box, allowing the wires to pass through. Re-secure the control box.

CO2 Sensor (If Applicable):

46. The optional CO2 sensor is supplied with wire 225 on the new MicroTech control board. Splice this wire into the existing 225 wire from the MicroTech II unit.
47. Connect wires from the CO2 sensor to the unit terminal block.
 - a. Wire 806 to TB-1
 - b. Wire 894 to TB-2.

Figure 35: Completed Installation of Retrofit Kit

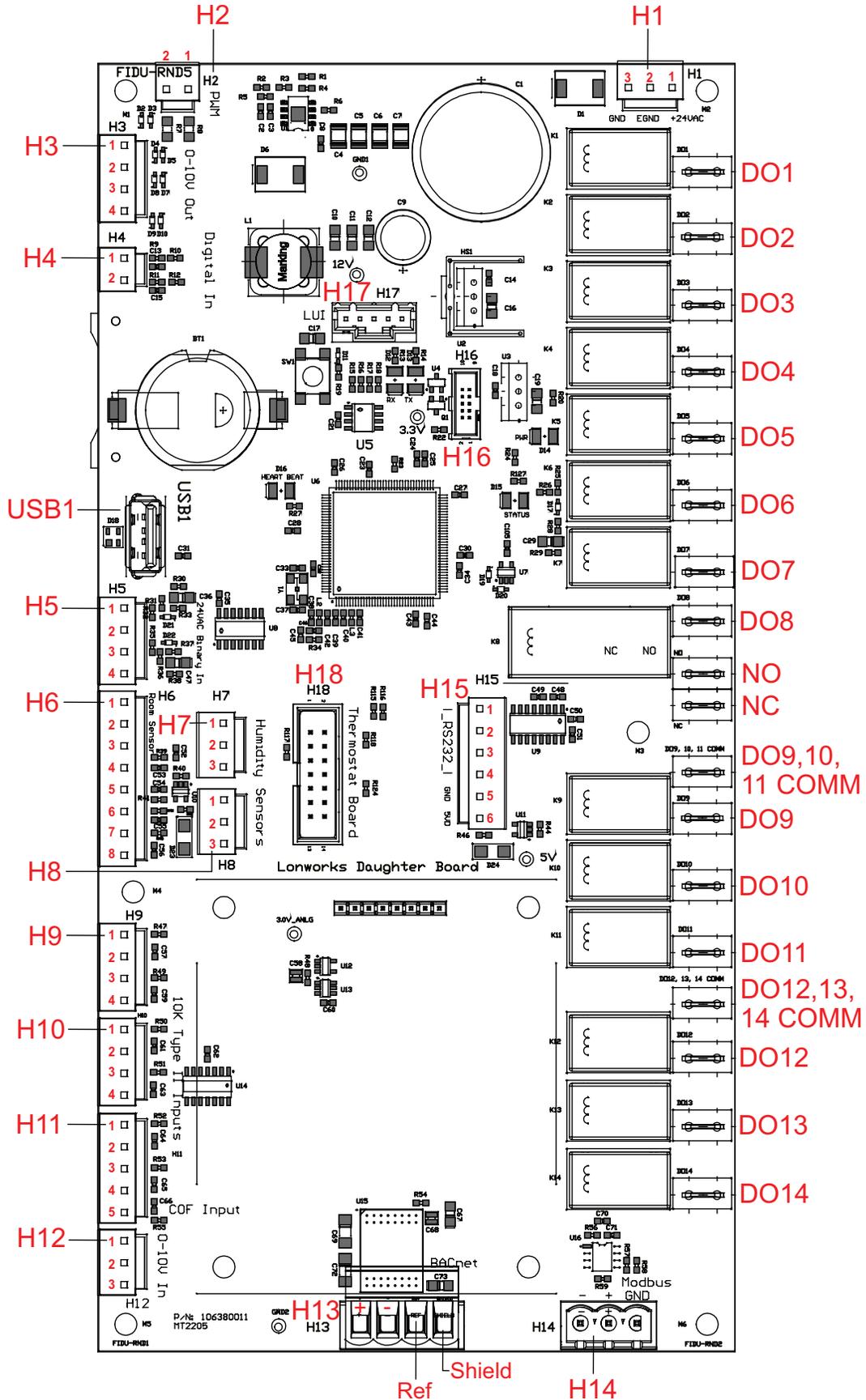


48. Before applying power to the unit, confirm all wiring per the retrofit schematic.

Note: All MicroTech control boards must be properly configured. This can be done through either an LUI or ServiceTools. Consult OM 732 and OM 1280 for more details.

49. After powering up the unit, confirm the application configuration using ServiceTools software or the LUI/keypad. For information on ServiceTools software refer to OM 732. For information on the LUI/keypad refer to OM 1280.

Figure 36: Unit Ventilator Controller Terminals





Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin Applied equipment, its care should be a high priority. For training information on all Daikin Applied HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

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All Daikin Applied equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied representative for warranty details. Refer to Form 933-430285Y. To find your local Daikin Applied representative, go to www.DaikinApplied.com.

Aftermarket Services

To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

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