

Installation Instructions for Retrofit Kit for Model ZQYRA Ventilation Unit manufactured prior to 10/2012

Application & Components This kit is designed to improve the operation of the Model ZQYRA ventilation unit. Verify the components with the list below. Follow the instructions carefully.

NOTE: To complete the installation, the technician will also need a Carel "Smart Key" with Version 1.05 software.

Kit P/N by Voltage and Model ZQYRA Size			208/230 Volt (Option AK20)		480 Volt (Option AK7)	
			Size 8	Size 12	Size 8	Size 12
			269984	269986	269985	269987
Code	Components	Qty	Component P/N's			
1	Contactor	1	216386		216386	
2	Electric Element Bracket	1	269982		269982	
3	Electric Heating Element	1	260184	221687	260185	221688
	NOTE: All elements are shipped with factory-wired jumpers, 270104.					
4	Temperature Sensor	1	269894		269894	
5	Mixing Baffle	1	269892	269893	269892	269893
6	Control Display Bracket	1	269895		269895	

FIGURE 1 - Components

Additional Components used in ALL Four Kits (NOTE: Quantity is one unless listed in parenthesis):	
(6) #8-8 x1/2" Self-drilling Screws (used in Steps 1&7), P/N 270414	Wire Assemblies (used in Step 4):
(6) #10-16 x 1/2" Self-drilling Screws (used in Step 3), P/N 37661	86", 12 gauge, black wire - 2 ring terminals, P/N 270059
(30) #10-16 x1/2" Sheetmetal Screws (used in Step 3), P/N 11813	86", 12 gauge, yellow wire - 2 ring terminals, P/N 270060
(2) 7/8" Bushings (used in Step 4), P/N 28786	86", 12 gauge, red wire - 2 ring terminals, P/N 270061
(30) #10-16 x1/2" Sheetmetal Screws (used in Step 4), P/N 11813	32", 12 gauge, black wire -1 ring terminal, P/N 270062
Latest Revised Wiring Diagram Label provided (used in Step 4)	32", 12 gauge, yellow wire - 1 ring terminal, P/N 270063
Hose Clamp (used in Step 6), P/N 269896	32", 12 gauge, red wire - 1 ring terminal, P/N 270064
(3) Wire Ties (used in Step 6), P/N 220724	89", 18 gauge, orange wire - 1 female spade terminal, P/N 270065
6" long piece of Pipe Insulation (used in Step 6), P/N 195635	75", 18 gauge, orange wire - 2 female spade terminals, P/N 270066
	25", 18 gauge, brown wire - 1 female spade terminal, P/N 270067

WARNING

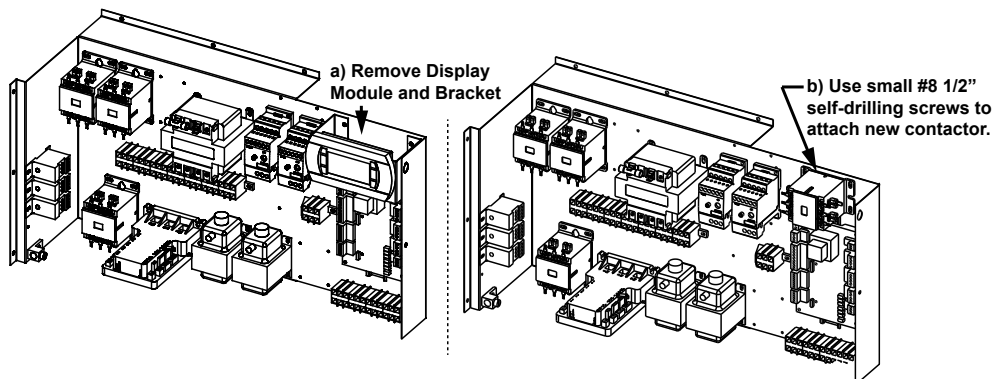
Electrical shock can cause personal injury and death. Shut off all power to this equipment before servicing. There may be more than one disconnect switch. Tag and lockout all disconnect locations to alert others not to restore power until all work is completed.

Installation Instructions

1. Turn off power to the unit and lock the disconnect switch open.
2. Attach the New Contactor, P/N 216386 (FIGURE 2.)
 - a) Remove the Display Module and the Bracket - Open the control compartment door and locate the display module. **Without disconnecting the wiring on the display**, remove the display from the bracket. Remove the bracket and discard. **NOTE:** The display is still wired to the controller. It will be re-located in Step 7.
 - b) Attach the New Contactor - In the area where the display module was removed from in a), position the new contactor. Attach with two of the small #8 1/2" self-drilling screws in the kit. Wires will be connected in Step 4.

FIGURE 2 - Control Compartment before and after Contactor is Installed

NOTE: The display module is not shown in second illustration (right) but will still be there with wiring attached to the controller. For ease of wiring, the display will be re-mounted in Step 7.

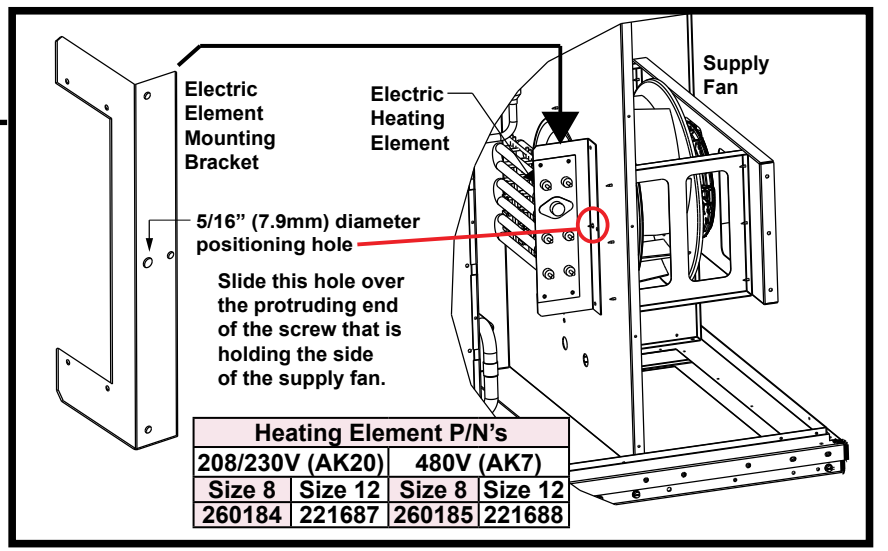
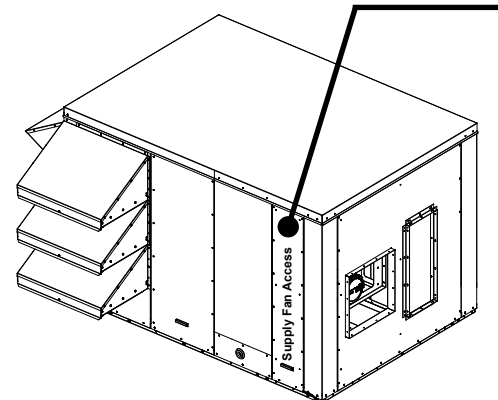


Installation Instructions (cont'd)

3. Install the Electric Heating Element (FIGURE 3)

On the side of the unit opposite the controls, remove the supply fan access panel. On the coil side of the fan panel, position the electric element bracket as shown in **FIGURE 3** with the 5/16" diameter hole over the protruding screw tip. Align the bracket vertically and attach it to the panel with the #10 1/2" self-drilling screws provided. Attach the element to the bracket in the configuration illustrated using the sheetmetal screws.

FIGURE 3 - Install Heating Element Bracket and Heating Element on Supply Fan Panel

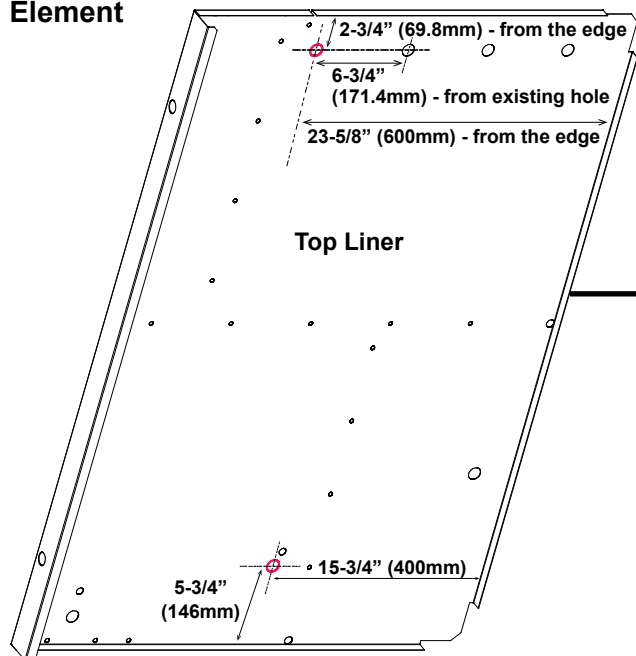


4. Install Wiring for the Heating Element (FIGURES 4A and 4B)

a) To add the new wiring, it is necessary to remove the top panel from the unit. Remove all of the screws and carefully lift off the top panel exposing the insulation. The insulation is in two pieces. Lift out the insulation piece that is above the control compartment and the electric heating element installed in **Step 3**, exposing the top liner and the wiring.

- b) Following the illustration and instructions in **FIGURE 4A**, drill the two holes in the top liner. Install the bushings and run the wires through the openings from the control compartment to the electric element. See **FIGURE 4B** for wire connections.
- c) Replace the insulation and the top panel. Secure the top panel with screws.
- d) On the inside of the control compartment access panel, adhere the new wiring diagram label over the original label.

FIGURE 4A - Drill Holes in the Top Liner and Install the Wiring for the Electric Heating Element



- 1) Mark the locations (left) and drill two 7/8" (or 1/2") holes.
- 2) Install a bushing in each of the holes.
- 3) Refer to the wires listed in **FIGURE 4B** and run the five longest wires into the control compartment, across the top, and down to the heating element. **Be sure that the spade terminal end of the 89" long orange wire is on the heating element side.**

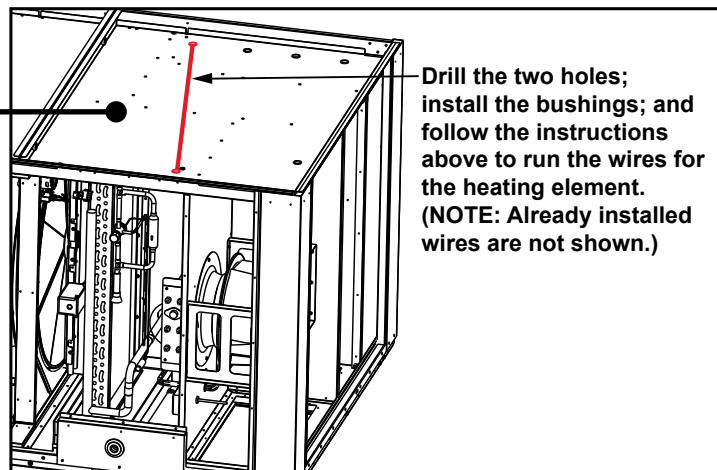


FIGURE 4B - Wiring Connections for Supplemental Heating Element

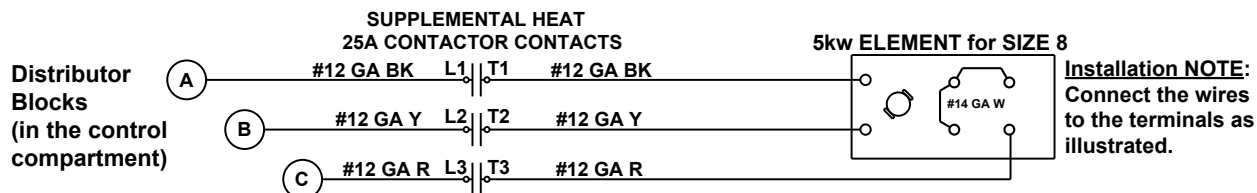
Wires in the kit to connect the Contactor to the Heating Element	86", 12 gauge, black wire - 2 ring terminals, P/N 270059
	86", 12 gauge, yellow wire - 2 ring terminals, P/N 270060
	86", 12 gauge, red wire - 2 ring terminals, P/N 270061
Wires in the kit to connect the Contactor to the Distribution Blocks	32", 12 gauge, black wire -1 ring terminal, P/N 270062
	32", 12 gauge, yellow wire -1 ring terminal, P/N 270063
	32", 12 gauge, red wire -1 ring terminal, P/N 270064

Applies to:

SIZE 8, 208/230V (AK20), Element P/N 260184

SIZE 8, 460V (AK7), Element P/N 260185

**Electric Heating Element
installed in Step 3**

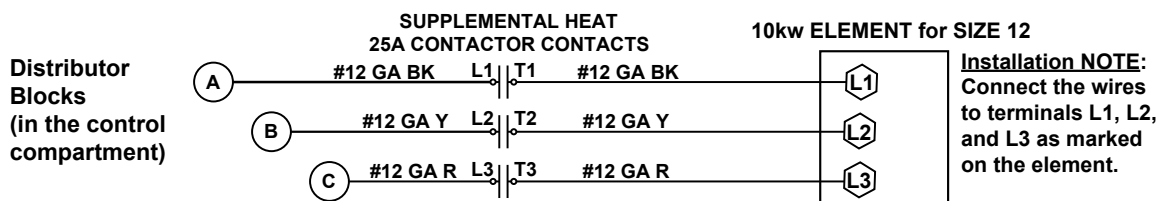


Applies to:

SIZE 12, 208/230V (AK20), Element P/N 221687

SIZE 12, 460V (AK7), Element P/N 221688

(Important NOTE: Because jumper wires on the heating elements vary by voltage and size, all jumper wires are wired at the factory.)



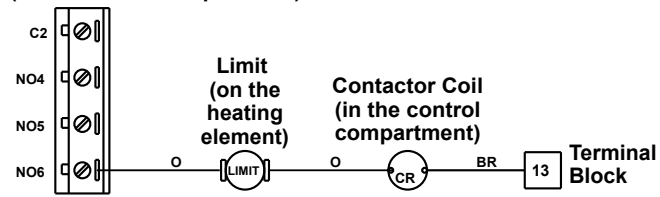
Wires in the kit for Contactor Coil Wiring

89", 18 gauge, orange wire - female 1/4" spade terminal on heating element limit end, **P/N 270065**

75", 18 gauge, orange wire - 2 female spade terminals (contactor coil to heating element limit), **P/N 270066**

25", 18 gauge, brown wire with female spade terminal on contactor end (neutral contactor coil to TB13), **P/N 270067**

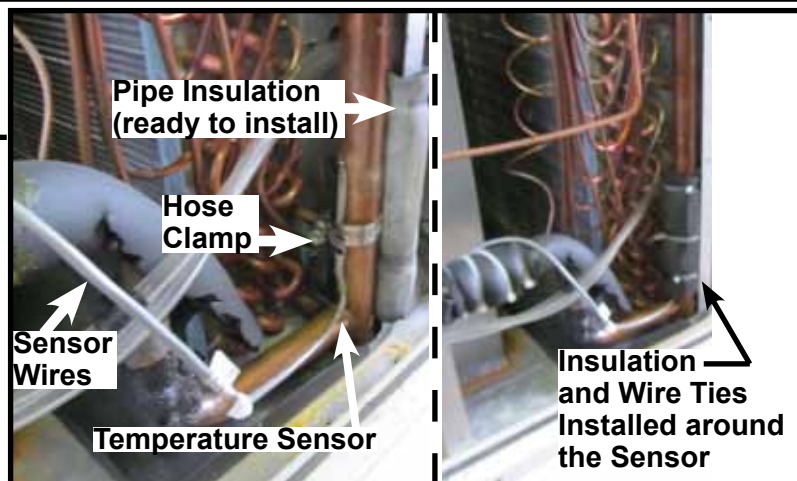
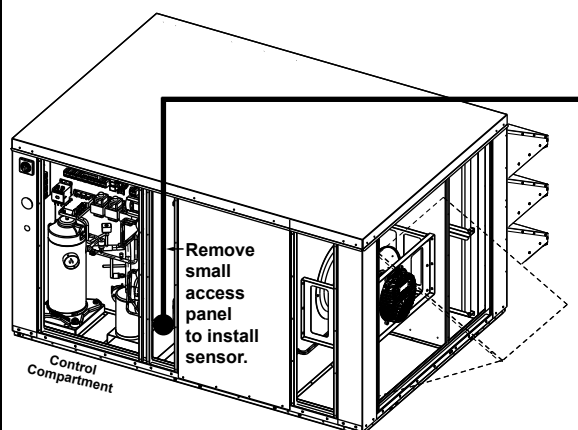
**Control Module
(in the control compartment)**



5. Install the Temperature Sensor, P/N 269894 (FIGURES 5A and 5B.)

- On the control side of the unit, remove the panel next to the control compartment. The sensor will be installed at the base of the header tubing. With the wire end down, place the sensor up along the side of the tube as shown. Use the hose clamp to secure the sensor to the tubing. Wrap the insulation around the sensor and secure the insulation with the three wire ties.

FIGURE 5A - Install the Sensor



Installation Instructions (cont'd)

6. Install the Mixing Baffle, Size 8, P/N 269892; Size 12, P/N 269893 (FIGURE 6.)

b) Extend the sensor wires into the control compartment. Connect the red or yellow wire to Terminal B7 on the controller. Connect the black or yellow wire to Terminal Block 8. See wiring connections in **FIGURE 5B**.

On the non-control side, remove the panel adjacent to the inlet air hoods. **NOTE:** If the Z unit has optional preheat, see the **NOTE** in **FIGURE 6**.) The holes in the baffle are designed to line up with the holes in the header plate of the coil. In the orientation illustrated, position the baffle against the header plate and attach with the sheetmetal screws.

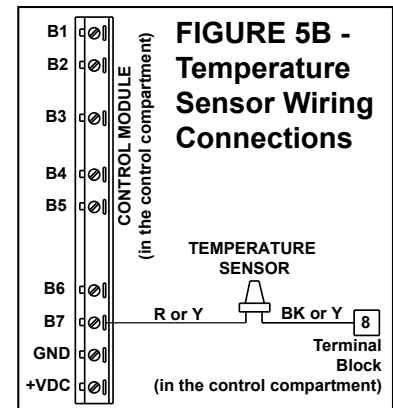
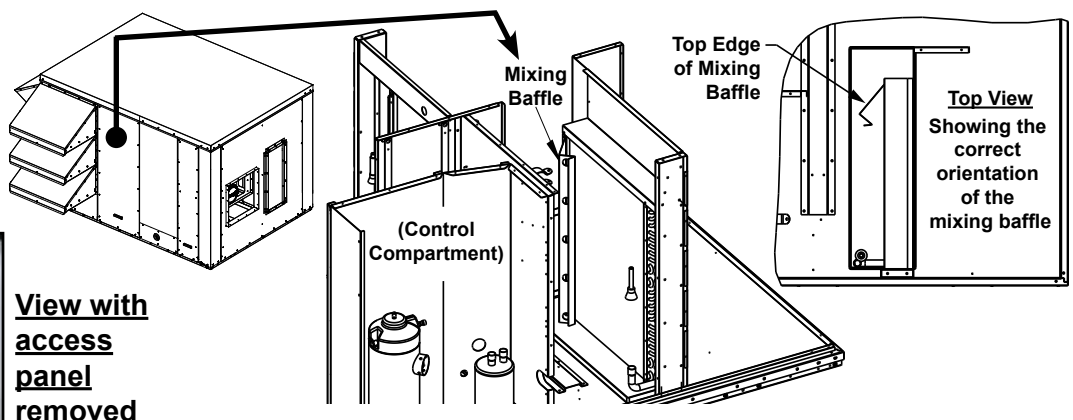


FIGURE 6 - Install the Mixing Baffle (through the side opposite the control compartment)



View with access panel removed



NOTE: The factory-installed optional preheat element has been removed (laying on top in the photo) but wires are not disconnected. Not all units will have optional preheat element(s) but if the unit does have, the element bracket will need to be detached to install the mixing baffle. Re-attach the element(s) after the baffle is installed.

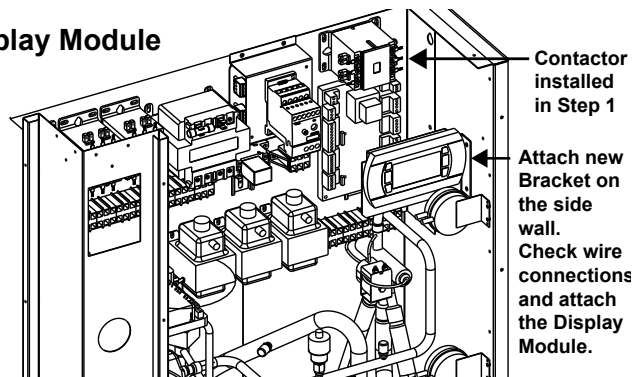
FIGURE 7 - Attach New Bracket to Re-locate the Display Module

7. Re-locate the Display Module

Remove the new display bracket from the kit and determine its orientation with the display module. Position the bracket so that the end is on the side wall of the control compartment as shown. Use the small #8 self-drilling screws to attach the new bracket to the side wall.

Attach the display module to the new bracket.

The mechanical part of the installation is complete. Close all of the panels except the control panel.



8. Download the Software Upgrade (Version 1.05) from Carel "Smart Key"

With the power OFF, unplug the display module from the controller. Plug the Carel "Smart Key" (mouse) into the same connection and turn the power ON.

- Wait for steady illumination of the up arrow and start button on the Carel "Smart Key".
- Press the start button. Up arrow will begin to flash.
- Wait for beeping sound and steady light on the arrow key.

- Turn the power OFF. Unplug the "Smart Key".
- Plug in the display module. Turn ON the power.
- Fill in the "Configuration Data" and toggle down to "Config Complete?". Change to "Yes". Set the time and date as needed and indicate completion when prompted. Turn the power OFF.
- Turn the power ON. Check for proper operation.

Installation of the retrofit kti is complete. Refer to the installation manual, Form I-ZQYRA, Paragraph 9.3, for information on entering new TAB Fan settings.

Specifications & illustrations subject to change without notice and without incurring obligations.

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