

# 40VM9100XX Vertical Air Handler Electric Heater Kits for Variable Refrigerant Flow (VRF) Systems

## Installation Instructions

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
### SAFETY CONSIDERATIONS

Prior to installation, thoroughly familiarize yourself with this installation Manual. Observe all safety warnings. During installation or repair, caution is to be observed. It is the qualified installer's responsibility to install the product safely and to educate the customer on its safe use.

Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electrical shock, or other conditions that may cause death, personal injury, or property damage. The qualified installer or agency must use factory authorized kits or accessories when modifying this product.

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Read these instructions thoroughly and follow all warnings or cautions included in literature and attached to the unit. Consult local building codes and the current editions of the National Electrical Code (NEC) ANSI/NFPA (American National Standards Institute/National Fire Protection Association) 70. For Canada, refer to the current editions of the Canadian Electrical Code CSA (Canadian Standards Association) C22.1.

Understand the signal words — **DANGER**, **WARNING**, and **CAUTION**. **DANGER** identifies the most serious hazards, which will result in severe personal injury or death. **WARNING** signifies hazards that could result in personal injury or death. **CAUTION** is used to identify unsafe practices, which could result in minor personal injury or product and property damage.

Recognize safety information. This is the safety-alert symbol (  ). When this symbol is displayed on the unit and in instructions or manuals, be alert for the potential of personal injury. Installing, starting up, and servicing the equipment can be hazardous due to system pressure, electrical components, and equipment location.

#### **WARNING**

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

#### **WARNING**

If this appliance is installed in an enclosed area such as a garage or utility room with any carbon monoxide producing appliance, ensure the area is properly ventilated.

#### **CAUTION**

Ensure that all power is disconnected prior to attempting installation of this heater kit. There may be more than one disconnect servicing the unit.

#### **CAUTION**

A means of strain relief and conductor protection must be provided at the supply wire entrance to the cabinet.

#### **CAUTION**

Use copper conductors only.

#### **CAUTION**

Installation must follow national electric code and other applicable codes.

### SHIPPING COMPONENTS

Table 1 —Components Shipped with Unit

Component	Qty
Electric heating coil assembly with circuit breaker	1
24VAC transformer and relay assembly	1
Grounding terminal	1
Long screws (to install transformer)	2
Short screws (to install circuit breaker)	3
Plastic wire ties	2
Plastic wire clamp	1
Wiring diagram sticker	1
Installation / Operations Manual	1

## INSTALLATION INSTRUCTIONS

1. Remove the upper access panel from the air handler.



**Fig. 1 —Remove Upper Access Panel**

2. Remove the cover plate from the air handler.



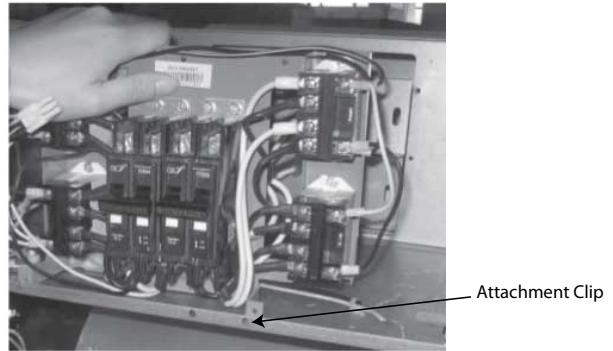
**Fig. 2 —Remove Cover Plate from Air Handler**

3. Slide the heater kit into the slot and secure the element plate with previously removed screws..



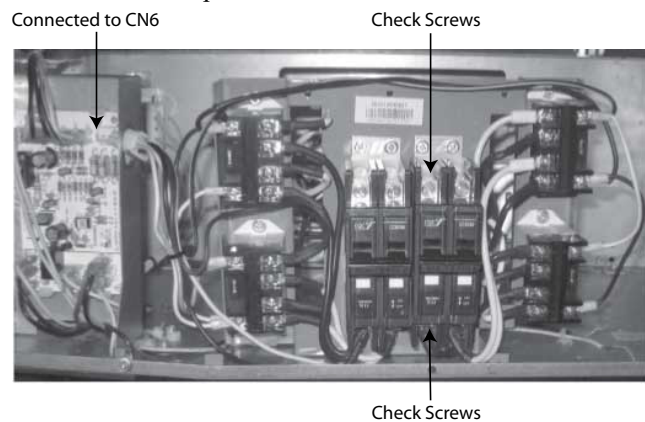
**Fig. 3 —Slide Heater Kit into Slot and Secure with Screws**

4. Align the attachment clip and the hole and secure the loose wires by using tie straps.



**Fig. 4 —Align Attachment Clip with Hole and Secure Loose Wires**

5. Install the circuit breaker into the mounting rail. Break out an appropriate area of the plastic circuit breaker cover on the access panel of the air handler..



**Fig. 5 —Install Circuit Breaker into Mounting Rail**

### **⚠ WARNING**

#### **FIRE, ELECTRICAL SHOCK, HAZARD**

After connecting all of the wires, check all of the breaker screws to ensure they are tight. Failure to do so can result in breaker malfunction, property damage, fire, personal injury, or death.

**Table 1 —Electric Heater Kits**

KIT#	DESCRIPTION	VERTICAL AHU CAPACITY
40VM910005	5kW Heat Strip	012,018, 024, 030, 036, 048, 054
40VM910007	7.5kW Heat Strip	024, 030, 036, 048, 054
40VM910010	10kW Heat Strip	030, 036, 048, 054
40VM910015	15kW Heat Strip	048, 054
40VM910020	20kW Heat Strip	048, 054

#### **NOTES:**

- When indoor control board receives W1/W2 signal, electric heater will be energized and indoor blower will be turned on.
- When W1/W2 signal is off, indoor blower will be turned off after 90 seconds delay.
- Blower motor runs when “G” is energized, and a 90s off delay when “G” is de-energized.

**Table 2 —Electric Heater Kits MCA/MOP Data**

Carrier VM Model Number	Air Handler Model	Electric Heat Kit (kW)	Minimum Circuit Amp Ampacity		MAX.Fuse or Breaker (HACR) Ampacity		Fan Speed (AC/HP)		
			240	208	240	208	Low	Med	High
40VM910005	18	5	26	23	30	25	•	•	•
40VM910007		7.5	39	34	45	40	--	•	•
40VM910010		10	52	45	60	50	--	--	•
40VM910005	24	5	26	23	30	25	•	•	•
40VM910007		7.5	39	34	45	40	•	•	•
40VM910010		10	52	45	60	50	--	•	•
40VM910005	30	5	26	23	30	25	•	•	•
40VM910007		7.5	39	34	45	40	•	•	•
40VM910010		10	52	45	60	50	•	•	•
40VM910005	36	5	26	23	30	25	•	•	•
40VM910007		7.5	39	34	45	40	•	•	•
40VM910010		10	52	45	60	50	•	•	•
40VM910015		15	78	68	90	80	--	•	•
40VM910020		20	104	90	110	100	--	--	•
40VM910005		5	26	23	30	25	•	•	•
40VM910007	42	7.5	39	34	45	40	•	•	•
40VM910010		10	52	45	60	50	•	•	•
40VM910015		15	78	68	90	80	--	•	•
40VM910020		20	104	90	110	100	--	--	•
40VM910005		5	26	23	30	25	•	•	•
40VM910007	48	7.5	39	34	45	40	•	•	•
40VM910010		10	52	45	60	50	•	•	•
40VM910015		15	78	68	90	80	--	•	•
40VM910020		20	104	90	110	100	--	•	•
40VM910005		5	26	23	30	25	•	•	•
40VM910007	60	7.5	39	34	45	40	•	•	•
40VM910010		10	52	45	60	50	•	•	•
40VM910015		15	78	68	90	80	--	•	•
40VM910020		20	104	90	110	100	--	•	•
40VM910005		5	26	23	30	25	•	•	•

**NOTE:** Heat kit suitable for AHU 4-way position installation (• means available, --means not available).

SCHEMATIC DIAGRAMS

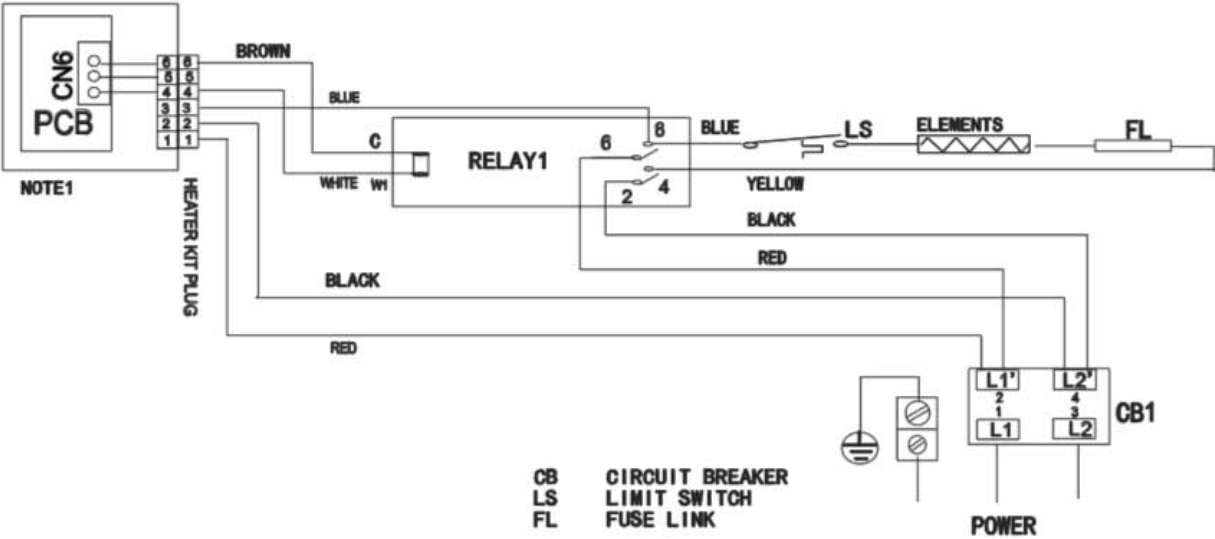


Fig. 6 —5kW Heat Kit

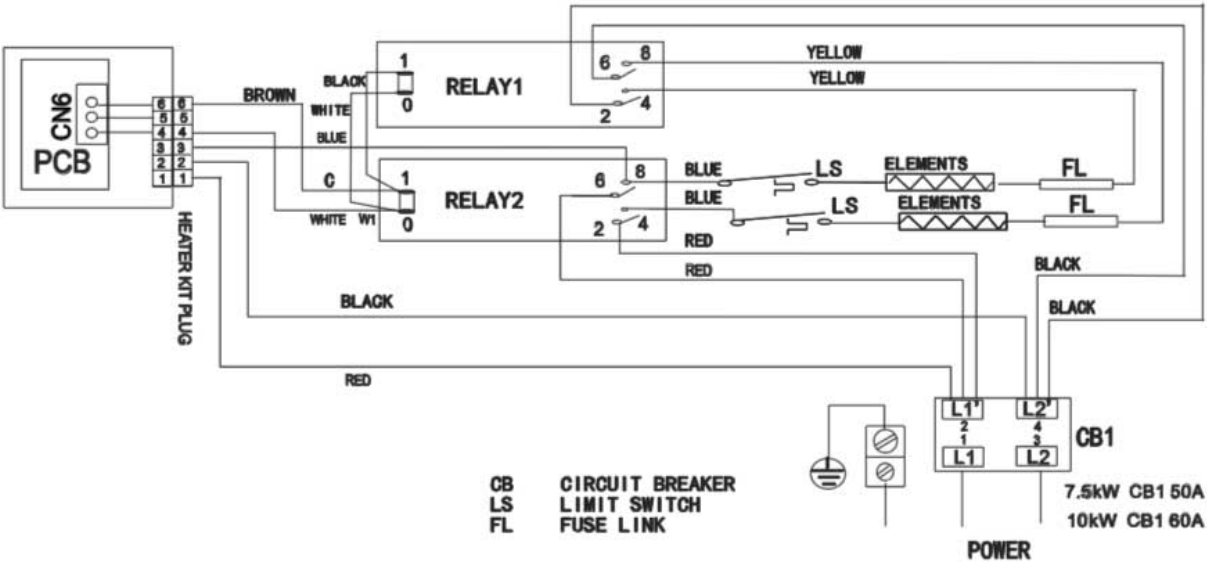
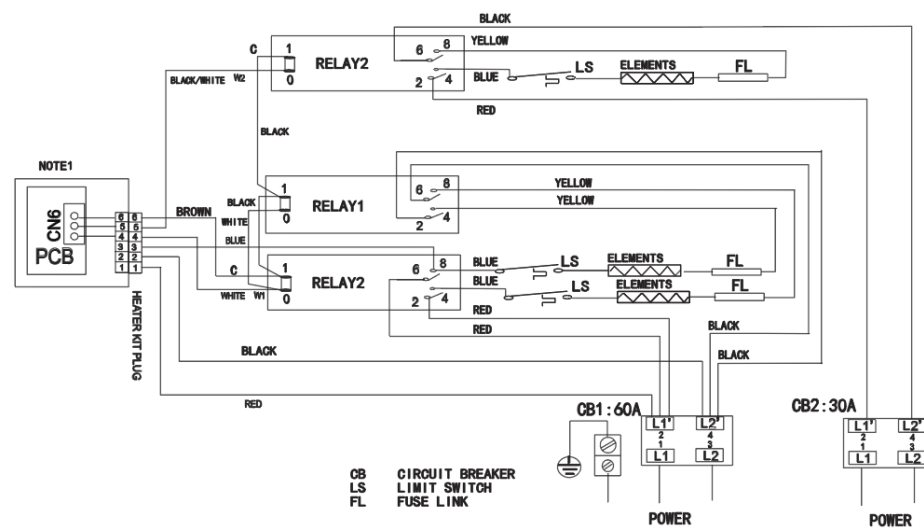


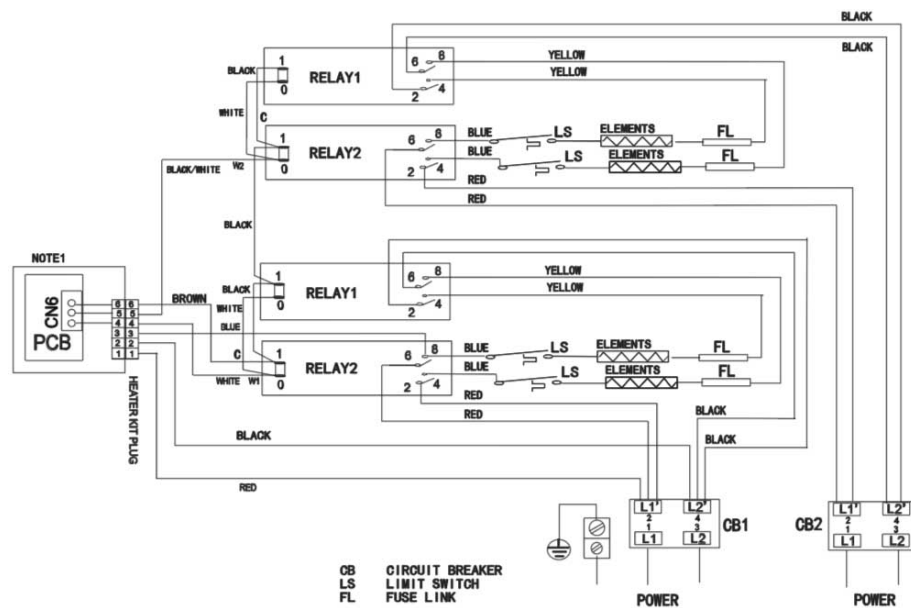
Fig. 7 —7.5kW Heat Kit and 10kW Heat Kit

Manufacturer reserves the right to discontinue, or change at any time, specifications or designs without notice and without incurring obligations.

## SCHEMATIC DIAGRAMS (Cont.)



**Fig. 8 —15kW Heat Kit (10kW) + 5kW**



**Fig. 9 —15kW Heat Kit (7.5kW) + 7.5kW/CB 50A and 20kW Heat Kit/CB 60A**