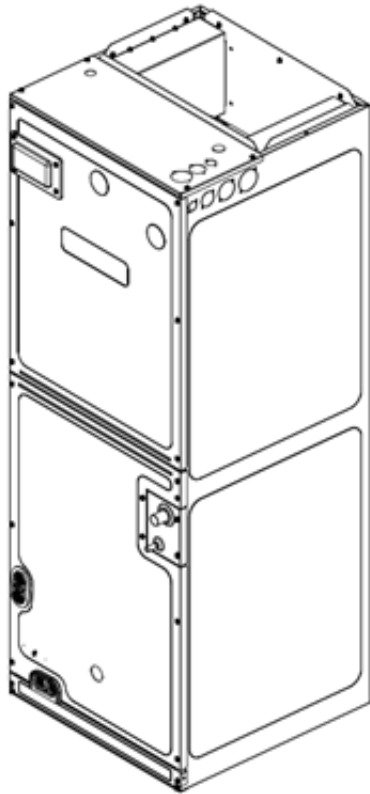


DMVT***P1300**

AIR HANDLERS INSTALLATION & OPERATING INSTRUCTIONS

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DAIKIN COMFORT TECHNOLOGIES MANUFACTURING, L.P.
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 P/N: IOD-4053 Date: July 2024



WARNING

DO NOT BYPASS SAFETY DEVICES.



RECOGNIZE SYMBOL THIS AS A SAFETY PRECAUTION

NOTE: SPECIFICATIONS AND PERFORMANCE DATA LISTED HEREIN ARE SUBJECT TO CHANGE WITHOUT NOTICE

NOTE: THIS EQUIPMENT IS ONLY APPROVED FOR USE WITH R-32 REFRIGERANT.

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WARNING

ONLY PERSONNEL THAT HAVE BEEN TRAINED TO INSTALL, ADJUST, SERVICE, MAINTENANCE OR REPAIR (HEREINAFTER, "SERVICE") THE EQUIPMENT SPECIFIED IN THIS MANUAL SHOULD SERVICE THE EQUIPMENT.

THIS EQUIPMENT IS NOT INTENDED FOR USE BY PERSONS (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR MENTAL CAPACITIES, OR LACK OF EXPERIENCE AND KNOWLEDGE, UNLESS THEY HAVE BEEN GIVEN SUPERVISION OR INSTRUCTION CONCERNING USE OF THE APPLIANCE BY A PERSON RESPONSIBLE FOR THEIR SAFETY.

CHILDREN SHOULD BE SUPERVISED TO ENSURE THAT THEY DO NOT PLAY WITH THE EQUIPMENT.



THE MANUFACTURER WILL NOT BE RESPONSIBLE FOR ANY INJURY OR PROPERTY DAMAGE ARISING FROM IMPROPER SUPERVISION, SERVICE OR SERVICE PROCEDURES. IF YOU SERVICE THIS UNIT, YOU ASSUME RESPONSIBILITY FOR ANY INJURY OR PROPERTY DAMAGE WHICH MAY RESULT. IN ADDITION, IN JURISDICTIONS THAT REQUIRE ONE OR MORE LICENSES TO SERVICE THE EQUIPMENT SPECIFIED IN THIS MANUAL, ONLY LICENSED PERSONNEL SHOULD SERVICE THE EQUIPMENT. IMPROPER SUPERVISION, INSTALLATION, ADJUSTMENT, SERVICING, MAINTENANCE OR REPAIR OF THE EQUIPMENT SPECIFIED IN THIS MANUAL, OR ATTEMPTING TO INSTALL, ADJUST, SERVICE OR REPAIR THE EQUIPMENT SPECIFIED IN THIS MANUAL WITHOUT PROPER SUPERVISION OR TRAINING MAY RESULT IN PRODUCT DAMAGE, PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.




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1 Important Safety Instructions

The following symbols and labels are used throughout this manual to indicate immediate or potential safety hazards. It is the owner's and installer's responsibility to read and comply with all safety information and instructions accompanying these symbols. Failure to heed safety information increases the risk of personal injury, property damage, and/or product damage.

	WARNING
<p>HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.</p>	
	

	WARNING
<p>TO PREVENT THE RISK OF PROPERTY DAMAGE, PERSONAL INJURY, OR DEATH, DO NOT STORE COMBUSTIBLE MATERIALS OR USE GASOLINE OR OTHER FLAMMABLE LIQUIDS OR VAPORS IN THE VICINITY OF THIS UNIT.</p>	


	WARNING
<p>THIS PRODUCT IS FACTORY-SHIPED FOR USE WITH 208V/240V/1PH/60HZ ELECTRICAL POWER SUPPLY. DO NOT RECONFIGURE THIS AIR HANDLER TO OPERATE WITH ANY OTHER POWER SUPPLY.</p>	



	WARNING
<p>TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH DUE TO ELECTRICAL SHOCK, THIS UNIT MUST HAVE AN UNINTERRUPTED, UNBROKEN ELECTRICAL GROUND. THE ELECTRICAL GROUND CIRCUIT MAY CONSIST OF AN APPROPRIATELY SIZED ELECTRICAL WIRE CONNECTING THE GROUND LUG IN THE UNIT CONTROL BOX TO THE BUILDING ELECTRICAL SERVICE PANEL. OTHER METHODS OF GROUNDING ARE PERMITTED IF PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) / AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) / NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 AND LOCAL/STATE CODES. IN CANADA, ELECTRICAL GROUNDING IS TO BE IN ACCORDANCE WITH THE CANADIAN ELECTRIC CODE (CSA) C22.1.</p>	

	CAUTION
<p>WHEN INSTALLING OR SERVICING THIS EQUIPMENT, SAFETY CLOTHING, INCLUDING HAND AND EYE PROTECTION, IS STRONGLY RECOMMENDED. IF INSTALLING IN AN AREA THAT HAS SPECIAL SAFETY REQUIREMENTS (HARD HATS, ETC.), OBSERVE THESE REQUIREMENTS.</p>	

	WARNING
<p>A REFRIGERANT LEAK DETECTION SYSTEM IS INSTALLED. THE UNIT MUST BE POWERED ON AT ALL TIMES EXCEPT FOR SERVICE.</p>	

	WARNING
<p>THIS UNIT SHOULD BE INSTALLED IN A MANNER SO THAT IT IS NOT ACCESSIBLE TO THE PUBLIC.</p>	

	WARNING
<p>IF ANY HOT WORK IS TO BE CONDUCTED ON THE REFRIGERATING EQUIPMENT OR ANY ASSOCIATED PARTS, APPROPRIATE FIRE EXTINGUISHING EQUIPMENT SHALL BE AVAILABLE ON HAND. HAVE A DRY POWDER OR CO2 FIRE EXTINGUISHER ADJACENT TO THE HOT WORK AREA. ENSURE THAT THE AREA IS IN THE OPEN OR THAT IT IS ADEQUATELY VENTILATED BEFORE BREAKING INTO THE SYSTEM OR CONDUCTING ANY HOT WORK. A DEGREE OF VENTILATION SHALL CONTINUE DURING THE PERIOD THAT THE WORK IS CARRIED OUT. THE VENTILATION SHOULD SAFELY DISPERSE ANY RELEASED REFRIGERANT AND PREFERABLY EXPEL IT EXTERNALLY INTO THE ATMOSPHERE.</p>	

 <p>DANGER PELIGRO</p>

CARBON MONOXIDE POISONING HAZARD
Special Warning for Installation of Furnace or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Areas
Carbon monoxide producing devices (such as an automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.
This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.
CO can cause serious illness including permanent brain damage or death. B10259-216
RIESGO DE INTOXICACIÓN POR MONÓXIDO DE CARBONO
Advertencia especial para la instalación de calentadores ó manejadoras de aire en áreas cerradas como estacionamientos ó cuartos de servicio.
Los equipos ó aparatos que producen monóxido de carbono (tal como automóvil, calentador de gas, calentador de agua por medio de gas, etc) no deben ser operados en áreas cerradas debido al riesgo de envenenamiento por monóxido de carbono (CO) que resulta de las emisiones de gases de combustión. Si el equipo ó aparato se opera en dichas áreas, debe existir una adecuada ventilación directa al exterior. Esta ventilación es necesaria para evitar el peligro de envenenamiento por CO, que puede ocurrir si un dispositivo que produce monóxido de carbono sigue operando en el lugar cerrado. Las emisiones de monóxido de carbono pueden circular a través del aparato cuando se opera en cualquier modo.
El monóxido de carbono puede causar enfermedades severas como daño cerebral permanente ó muerte. B10259-216
RISQUE D'EMPOISONNEMENT AU MONOXYDE DE CARBONE
Avertissement special au sujet de l'installation d'appareils de chauffage ou de traitement d'air dans des endroits clos, tels les garages, les locaux d'entretien et les stationnements.
Évitez de mettre en marche les appareils produisant du monoxyde de carbone (tels que les automobile, les appareils de chauffage autonome, etc.) dans des endroits non ventilés tels que les d'empoisonnement au monoxyde de carbone. Si vous devez faire fonctionner ces appareils dans un endroit clos, assurez-vous qu'il y ait une ventilation directe provenant de l'extérieur.
Cette ventilation est nécessaire pour éviter le danger d'intoxication au CO pouvant survenir si un appareil produisant du monoxyde de carbone continue de fonctionner au sein de la zone confinée.
Les émissions de monoxyde de carbone peuvent être recirculés dans les endroits clos, si l'appareil de chauffage ou de traitement d'air sont en marche.
Le monoxyde de carbone peut causer des maladies graves telles que des dommages permanents au cerveau et même la mort. B10259-216

2 Shipping Inspection

Always transport the unit upright; laying the unit on its side or top during transit may cause equipment damage. The installer should inspect the product upon receipt for shipping damage and subsequent investigation is the responsibility of the carrier. The installer must verify the model number, specifications, electrical characteristics, and accessories are correct prior to installation. The distributor or manufacturer will not accept claims from dealers for transportation damage or installation of incorrectly shipped units.

2.1 PARTS

Inspect the unit to verify all required components are present and intact. Report any missing components immediately to the manufacturer or to the distributor. Use only factory authorized replacement parts (see Section 4). Make sure to include the full product model number and serial number when reporting and/or obtaining service parts.

2.2 HANDLING

Use caution when transporting / carrying the unit. Do not move unit using shipping straps. Do not carry unit with hooks or sharp objects. The preferred method of carrying the unit after arrival at the job site is to carry via a two-wheel hand truck from the back or sides or via hand by carrying at the cabinet corners.

2.3 SHIPPING MATERIAL REMOVAL

IMPORTANT: All Shipping Material used to protect the equipment, and the equipment's components, during transit should be removed before final installation.

3 Codes & Regulations

This product is designed and manufactured to comply with national codes such as UL60335 2-40, ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. Installation in accordance with such codes and/or prevailing local codes/regulations is the responsibility of the installer. The manufacturer assumes no responsibility for equipment installed in violation of any codes or regulations.

The United States Environmental Protection Agency (EPA) has issued various regulations regarding the introduction and disposal of refrigerants. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines.

Should you have any questions please contact the local office of the EPA and / or refer to EPA's website www.epa.gov.

4 Replacement Parts

When reporting shortages or damages, or ordering repair parts, give the complete product model and serial numbers as on the unit's Serial and Rating Plate. Replacement parts for this product are available through your contractor or local distributor.

5 Pre-Installation Considerations

5.1 PREPARATION

Keep this document with the unit. Carefully read all instructions for the installation prior to installing the product. Make sure each step or procedure is understood and any special considerations are considered before starting installation. Assemble all tools, hardware and supplies needed to complete the installation. Some items may need to be purchased locally. Make sure everything needed to install the product is on hand before starting.

5.2 SYSTEM MATCHES

The entire system (combination of indoor and outdoor sections) must be manufacturer approved and Air-Conditioning, Heating, and Refrigeration Institute (AHRI) listed.

NOTE: Installation of unmatched systems is not permitted. Damage or repairs due to installation of unmatched systems is not covered under the warranty.

5.3 INTERCONNECTING TUBING

Give special consideration to minimize the length of refrigerant tubing when installing air handlers. Refer to Remote Cooling / Heat Pump Service Manual, and TP-110 Long Line Set Application R-32 for tubing guidelines. If possible, allow adequate length of tubing such that the coil may be removed (for inspection or cleaning services) from the cabinet without disconnecting the tubing.

5.4 CLEARANCES



WARNING

WHEN INSTALLED IN A ROOM WITH AN AREA LESS THAN THAT OUTLINED IN TABLE 10, THAT ROOM SHALL BE WITHOUT CONTINUOUSLY OPERATING OPEN FLAMES (FOR EXAMPLE AN OPERATING GAS APPLIANCE) OR OTHER POTENTIAL IGNITION SOURCES (FOR EXAMPLE AN OPERATING ELECTRIC HEATER, HOT SURFACES).

WARNING

AUXILIARY DEVICES WHICH MAY BE A POTENTIAL IGNITION SOURCE ARE NOT TO BE INSTALLED IN THE DUCT WORK. SUCH POTENTIAL IGNITION SOURCES INCLUDE HOT SURFACES WITH A TEMPERATURE EXCEEDING 650°C AND ELECTRIC SWITCHING DEVICES. FOR EXAMPLE ELECTRONIC AIR FILTERS ARE A POTENTIAL IGNITION SOURCE.



WARNING

THE ONLY AUXILIARY DEVICES APPROVED BY THE APPLIANCE MANUFACTURER OR DECLARED SUITABLE WITH THE REFRIGERANT SHALL BE INSTALLED IN CONNECTING DUCTWORK. IF AN EXISTING DEVICE IS NOT APPROVED BY THE APPLIANCE MANUFACTURER FOR USE WITH THE REFRIGERANT THE DEVICE MUST BE REMOVED FROM THE DUCTWORK.

The unit clearance from a combustible surface may be 0". However, service clearance must take precedence. A minimum of 24" in front of the unit for service clearance is required. Additional clearance on one side or top will be required for electrical wiring connections. Consult all appropriate regulatory codes prior to determining final clearances. When installing this unit in an area that may become wet (such as crawl spaces), elevate the unit with a sturdy, non-porous material. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage. Always install units such that a positive slope in condensate line (1/4" per foot) is allowed.

Refrigerant lines must be routed depending on configuration of unit to maintain the required 24" minimum clearance for service. Consult all appropriate regulatory codes prior to determining final clearances. In installations that may lead to physical damage (i.e. a garage) it is advised to install a protective barrier to prevent such damage. Always install units such that a positive slope in condensate line (1/4" per foot) is allowed.

Further, any joints made in the installation between parts of the refrigerating system must be accessible for maintenance purposes.

5.5 HORIZONTAL APPLICATIONS

If installed above a finished living space, a secondary drain pan with float switch (as required by many building codes), must be installed under the entire unit and its condensate drain line must be routed to a location such that the user will see the condensate discharge.

5.6 ACCESS

This unit should be installed in a manner so that it is **NOT** accessible to the public.

6 Installation Location

NOTE: These air handlers are designed for indoor installation only at a max altitude of 10,500 feet above sea level or a min altitude of -184 feet below sea level.

If the unit is located in an unconditioned area with high ambient temperature and/or high humidity, the air handler may be subject to nuisance sweating of the casing. On these installations, a wrap of 2" fiberglass insulation with a vapor barrier is recommended. A secondary drain pan below the unit is also recommended to protect the installation site.

This product line may be installed in one of the upflow, downflow, horizontal left or horizontal right orientations as shown in Figures 3, 4, 5 and 6. The unit may be installed in horizontal left orientation as shipped (refer to the production Specification for more information).

6.1 UPFLOW AND DOWNFLOW INSTALLATION

(FIGURE 3 & 4)

1. Remove blower access panel, coil access panel, and tubing access panel as shown in figure 11 & 12. The coil access panel and tubing panel may remain screwed together during this procedure. Remove and retain the seven (7) screws securing the coil access panel to the cabinet and the six (6) screws securing the blower access panel to the cabinet.
2. Disconnect the sensor wire from the A2L PCB. Slide the coil assembly out from the cabinet. Use the drain pan to pull the assembly from the cabinet.

IMPORTANT: Do not use manifolds, copper lines, or the flowrator to pull the coil assembly out. Failure to do so may result in braze joint damage and leaks.

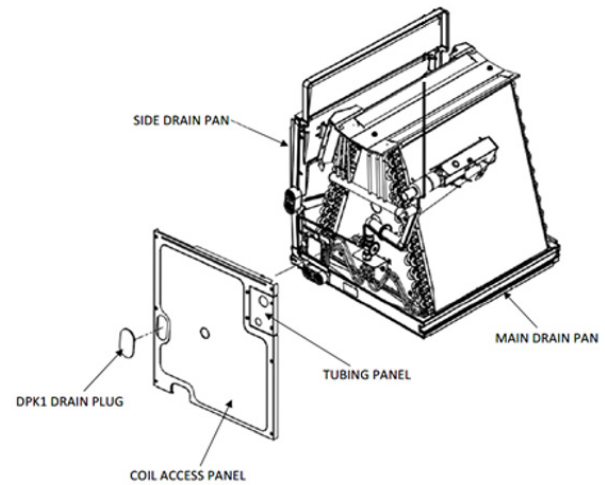
3. Removal of the center support is required on units with 21" wide cabinet. Remove and retain the two (2) screws that secure the center support to the cabinet. Remove the center support refer to Figure 7.
4. The horizontal drip shield, side drain pan, and drain pan extension must be removed. Follow the "Side Drain Pan and Extension Removal Instructions".
5. For Upflow Installation:
 - a. Using the drain pan to hold the coil assembly, slide the coil assembly back into the cabinet.
 - b. Reinstall the center support (if removed) using the two (2) screws removed in Step 3.
 - c. Reinstall the coil access panels and reinstall blower access panel removed in Step 1 as shown in Figure 11.
6. For Downflow Installation:
 - a. Position the unit in the downflow position.
 - b. Using the drain pan to hold the coil assembly, slide the coil assembly back into the cabinet on the downflow brackets as shown in Figure 9.
 - c. Reinstall the center support (if removed) using the two (2) screws removed in Step 3.
 - d. Reinstall the coil access panels and reinstall blower access panel removed in Step 1 as shown in Figure 12.

SIDE DRAIN PAN AND EXTENSION REMOVAL INSTRUCTIONS

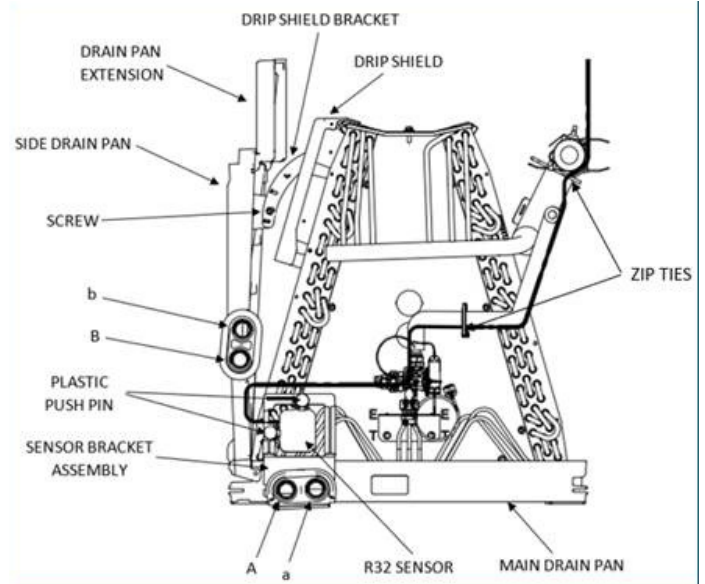
Refer to Figure 2, remove the two (2) screws that secure the drip shield support brackets to the condensate collectors (front and back). Unsnap the side drain pan from the bottom drain pan using a screwdriver or any small lever. The side drain pan, drip shield brackets and the drain pan extension may now be removed. From Figure 2, drain port labeled (A) is the primary drain for this application and condensate drain line must be attached to this drain port. Drain port (a) is for the secondary drain line (if used). When the side drain pan is removed, the drain port opening in the access panel must be covered by the accessory drain port plug (DPK1) as shown in Figure 1. Refer to Table 1 for kit number.

Drain Port Plug Kit		
Kit Number	Description	Application
DPK1	Side Drain Port Plug	All Models

TABLE 1



**DRAIN PAN
FIGURE 1**



**SIDE DRAIN PAN REMOVAL
FIGURE 2**

6.2 HORIZONTAL LEFT INSTALLATION (FIGURE 5)

No field modifications are permissible for this application. Install unit as shown in Figure 5.

Drain port labeled (B) in Figure 2 is the primary drain for this application and condensate drain line must be attached to this drain port. Drain port (b) is for the secondary drain line (if used).

Remove red plugs from side drain pan before connecting condensate drain pipes. Use removed plug to close drain ports on vertical drain pan.

ASSEMBLY FROM UPFLOW TO HORIZONTAL LEFT

1. Take off the blower access panel
2. Take off the drain port gaskets on main drain pan and side drain pan
3. Take off the R-32 sensor bracket assembly
4. Put R-32 sensor bracket assembly to the side drain port correctly as shown in Figure 5. The “FRONT” print on sensor bracket should be in the front
5. Place gaskets back to the drain ports correctly. The “FRONT” print on the gaskets should be in the front.
6. Sensor wiring should be rerouted as shown in Figure 2.
7. Reassemble the blower access panel to the unit.

6.3 HORIZONTAL RIGHT INSTALLATION (FIGURE 6)

NOTE: For DMVT24BP1300 only: If installing a filter, an external filter must be used when installing the unit in Horizontal Right. A filter will not fit on the internal filter rails in these applications.**

1. Before inverting the air handler, remove blower access panel and coil access panel. The coil access panel and tubing panel may remain screwed together during this procedure. Remove and retain the seven (7) screws securing the coil access panel to the cabinet and the six (6) screws securing the blower access panel to the cabinet.
2. Slide the coil assembly out from the cabinet. Use the drain pan to pull the assembly from the cabinet.

NOTE: Do not use manifolds, copper lines, or the flowrator to pull the coil assembly out. Failure to do so may result in braze joint damage and leaks.

3. Removal of the center support is required on units with 21” wide cabinet. Remove and retain the two (2) screws that secure the center support to the cabinet. Remove the center support.
4. Position the unit in the downflow position.
5. Remove side drain pan extension if present.
6. Using the drain pan to hold the coil assembly, slide the coil assembly back into the cabinet on the downflow brackets as shown in Figure 6.
7. Reinstall the center support (if removed) using the two (2) screws removed in Step 3.
8. Reinstall the coil access panels and reinstall blower access panel removed in Step 1 as shown in Figure 10.
9. Drain Connections for Horizontal Right Installation
 - a. Drain port labeled (B) in Figure 2 is the primary drain for this application and condensate drain line must be attached to this drain port. Drain port (b) is for the secondary drain line (if used).
 - b. Remove red plugs from side drain pan before connecting condensate drain pipes. Use removed plug to close drain ports on vertical drain pan.

NOTE: If removing only the coil access panel from the unit, the filter access panel must be removed first. Failure to do so will result in panel damage.

6.4 HUMID ENVIRONMENT INSTALLATIONS

NOTE: Each service kit mentioned in this instruction is available through your local distributor. The kits are not supplied with the air handler and must be used to assist with condensation management in humid environment applications. The individual installation instructions provided with each kit must be followed.

6.4.1 ALL INSTALLATIONS – HUMID ENVIRONMENTS

Installations in areas where the return air environment sees humidity levels above 65% relative humidity, a High Humidity Kit (HHK) must be used. See Table 2 for Model and Kit assignment.

HHK0004	HHK0005	HHK0006	HHK0008
DMVT24B DMVT30B	DMVT36C DMVT42C	DMVT48C	DMVT60D

TABLE 2

6.4.2 DOWNFLOW INSTALLATIONS – HUMID ENVIRONMENTS

To prevent the coil pan “sweating”, the mandatory Downflow Kit (DFK) must also be used in addition to the High Humidity Kit (HHK). See Table 3 for the correct DFK for each model.

DFKE-02	DFKE-03
DMVT24B DMVT30B DMVT36C DMVT42C	DMVT48C DMVT60D

TABLE 3

6.4.3 HORIZONTAL INSTALLATIONS – HUMID ENVIRONMENTS

In addition to the High Humidity Kit (HHK), in applications where the air handler is installed in the horizontal position (Left or Right), and the return air environment sees humidity levels above 65% relative humidity, a Condensate Management Kit (CMK) must be used for field application. Applicable Kit and Model listing can be found in Table 4.

CMK0018	CMK0019	CMK0020
DMVT24B DMVT36C	DMVT30B DMVT42C	DMVT48C DMVT60D

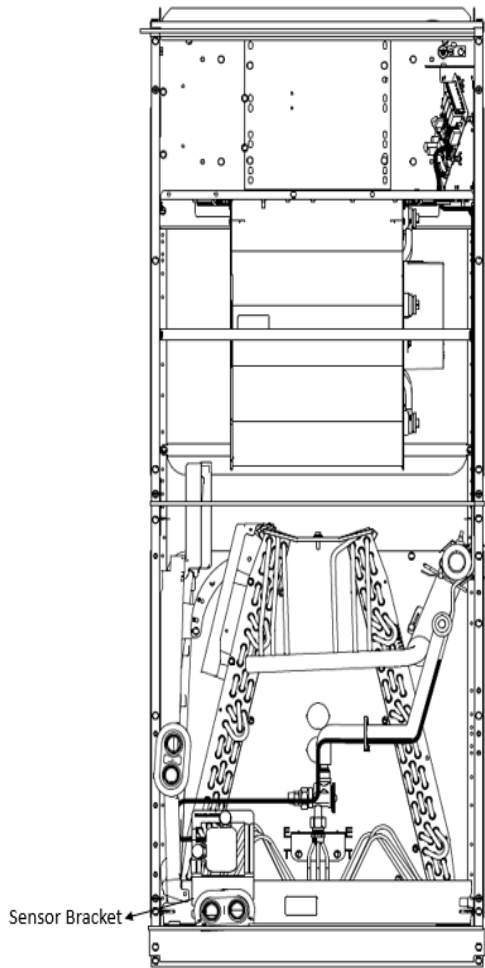
TABLE 4

6.5 ALTITUDE ADJUSTMENT FACTOR

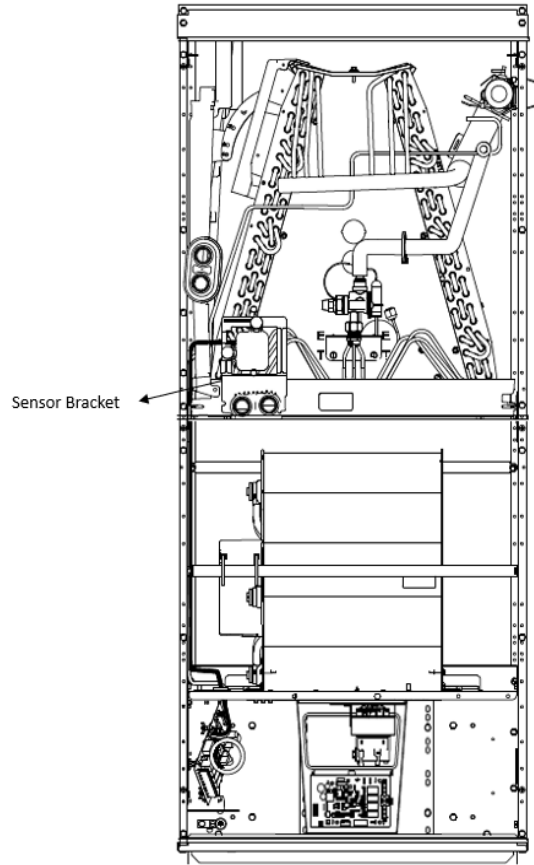
The Indoor equipment mitigation requirements are calculated at sea level. For higher altitudes adjust the minimum room area specified on the Serial Plate by the corresponding altitude adjustment factor shown below. This table is provided as a reference.

Adjusted room area (Amin adj) is the product of the minimum room area specified in the serial plate and the adjustment factor AF, as shown in below formula
 $A_{min\ adj} = A_{min\ (serial\ plate)} * AF$

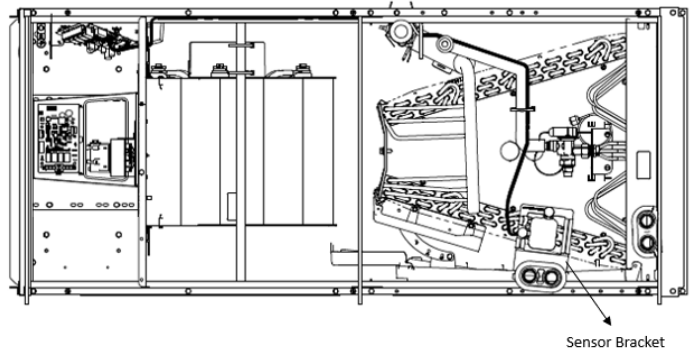
Height in meters	Height in feet	Altitude Adjustment Factor (AF)
At sea level	At sea level	1.00
1~200	1~660	1.02
200~400	660~1320	1.03
400~600	1320~1970	1.05
600~800	1970~2630	1.07
800~1000	2630~3290	1.09
1000~1200	3290~3940	1.11
1200~1400	3940~4600	1.13
1400~1600	4600~5250	1.15
1600~1800	5250~5910	1.17
1800~2000	5910~6570	1.19
2000~2200	6570~7220	1.21
2200~2400	7220~7880	1.24
2400~2600	7880~8540	1.26
2600~2800	8540~9190	1.29
2800~3000	9190~9850	1.31
3000~3200	9850~10500	1.34



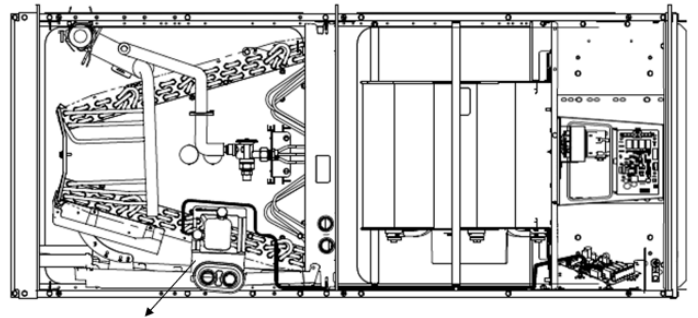
**UPFLOW
FIGURE 3**



**DOWNFLOW
FIGURE 4**



**HORIZONTAL LEFT
FIGURE 5**



**HORIZONTAL RIGHT
FIGURE 6**

7 Refrigerant Lines



WARNING

DO NOT USE MEANS TO ACCELERATE THE DEFROSTING PROCESS OR TO CLEAN, OTHER THAN THOSE RECOMMENDED BY THE MANUFACTURER.

THE APPLIANCE SHALL BE STORED IN A ROOM WITHOUT CONTINUOUSLY OPERATING IGNITION SOURCES (FOR EXAMPLE: OPEN FLAMES, AN OPERATING GAS APPLIANCE OR AN OPERATING ELECTRIC HEATER.) DO NOT PIERCE OR BURN. BE AWARE THAT REFRIGERANTS MAY NOT CONTAIN AN ODOR.



WARNING

THIS PRODUCT IS FACTORY-SHIPED WITH DRY NITROGEN MIXTURE GAS UNDER PRESSURE. USE APPROPRIATE SERVICE TOOLS AND FOLLOW THESE INSTRUCTIONS TO PREVENT INJURY.



WARNING

WORK SHALL BE UNDERTAKEN UNDER A CONTROLLED PROCEDURE TO MINIMIZE THE RISK OF FLAMMABLE GAS OR VAPOR BEING PRESENT WHILE THE WORK IS BEING PERFORMED.



WARNING

ONLY BRAZING TECHNIQUES AND APPROVED MECHANICAL JOINTS SHOULD BE USED TO CONNECT REFRIGERANT TUBING CONNECTIONS. NON-APPROVED MECHANICAL CONNECTORS AND OTHER METHODS ARE NOT PERMITTED IN THIS SYSTEM CONTAINING A2L REFRIGERANT. APPROVED MECHANICAL JOINTS WILL BE DETAILED IN THE PRODUCTS SPECIFICATION SHEETS.

NOTE: Refrigerant tubing must be routed to allow adequate access for servicing and maintenance of the unit.

Do not install the air handler in a location that violates the instructions provided with the condenser. If the unit is located in an unconditioned area with high ambient temperature and/or high humidity, the air handler may be subject to nuisance sweating of the air handler cabinet. On these installations, a wrap of 2" fiberglass insulation with a vapor barrier is recommended.

Follow standards related to ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code or CSA B52 during any installation. Piping must be accessible for inspection prior to being covered or enclosed in compliance with national and local codes

Field-made refrigerant joints indoors shall be tightness tested. The test method shall have a sensitivity of 5 grams (0.176 oz) per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected. (Should be leak tight)

The indoor equipment and pipes must be securely mounted and guarded such that accidental rupture of equipment cannot occur from such events as moving furniture or reconstruction activities. Field-made refrigerant joints indoors shall be tightness tested.

Field pipework must be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging

7.1 TUBING SIZE/LENGTH

Give special consideration to minimize the length of refrigerant tubing when installing air handlers. Refer to Remote Cooling/Heat Pump Service, and TP-110 Long Line Set Application R-32 for tubing guidelines. If possible, airflow adequate length of tubing such that the coil may be removed (for inspection or cleaning services) from the cabinet without disconnecting the tubing.

7.2 TUBING PREPARATION

All cut ends are to be round, burr free, and clean. Failure to follow this practice increases the chances for refrigerant leaks. The suction line is spun closed and requires tubing cutters to remove the closed end.

Installation of pipe-work must be kept to a minimum. Pipe-work including piping material, pipe routing and installation must be protected from physical damage and shall not be installed in an unventilated space. Equipment piping in any occupied space shall be installed in such a way to protect against accidental damage in operation and service. Precautions must be taken to avoid excessive vibration or pulsation to refrigeration piping. Protection devices, piping and fittings shall be protected as far as possible against adverse environmental effects, for example, the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris.



WARNING

THIS UNIT MUST BE CHARGED WITH R-32 REFRIGERANT. ENSURE THAT SENSOR IS INSTALLED CORRECTLY AND IS OPERATIONAL.

7.3 BRAZING

Braze joints should be made only with the connections provided external to the cabinet. Do not alter the cabinet nor braze inside the cabinet. Do not alter the cabinet nor braze inside the cabinet. To avoid overheating after brazing, quench all brazed joints with water or a wet rag.


This system must be charged with R32 refrigerant in order to operate safely.

When breaking into the refrigerant circuit to make repairs - or for any other purpose - conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed, since flammability is a consideration. The following procedure shall be adhered to:

1. Safely remove refrigerant following local and national regulations;
2. Evacuate;
3. Purge the circuit with inert gas;
4. Evacuate;
5. Continuously flush or purge with inert gas when using flame to open circuit; and
6. Open the circuit.

For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for R32). This process shall be repeated until no refrigerant is within the system (optional for R32). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

 CAUTION
<p>APPLYING TOO MUCH HEAT TO ANY TUBE CAN MELT THE TUBE. TORCH HEAT REQUIRED TO BRAZE TUBES OF VARIOUS SIZES MUST BE PROPORTIONAL TO THE SIZE OF THE TUBE. SERVICE PERSONNEL MUST USE THE APPROPRIATE HEAT LEVEL FOR THE SIZE OF THE TUBE BEING BRAZED.</p>

7.4 TUBING CONNECTIONS

An adjustable TXV with bulb is installed on the vapor tube from the factory.

1. Remove refrigerant tubing panel or coil (lower) access panel.
2. Remove red valve cap and depress the valve stem in access fitting to release pressure. No pressure indicates possible leak.
3. Replace the panel.
4. Remove the spin closure on both the liquid and suction tubes using a tubing cutter.
5. Insert liquid line set into liquid tube expansion and slide grommet about 18" away from braze joint.
6. Insert suction line set into suction tube expansion and slide insulation and grommet about 18" away from braze joint.
7. Braze joints. Braze joints should be made only with the connections provided external to the cabinet. Do not alter the cabinet nor braze inside the cabinet. Quench all brazed joints with water or a wet rag upon completion of brazing.
8. Ensure no wet rags or debris left inside cabinet before closing cabinet.
9. Ensure that the red cap is reinstalled on the access fitting and is hand-tight.


7.5 STANDING PRESSURE TEST (RECOMMENDED BEFORE VACUUM)

Using dry nitrogen or dry helium, pressurize the system to 450 PSIG. Allow the pressure to stabilize and hold for 15 Minutes (minimum). The system is considered leak-free if the pressure does not drop below 450 PSIG. If, after 15 Minutes, the pressure drops below 450 PSIG, it implies a leak in the system. Proceed with identifying and sealing the leak and repeating the Standing Pressure Test. Proceed to system evacuation using the Deep Vacuum Method. Leak tests the system using dry nitrogen or dry helium and soapy water to identify leaks. No refrigerant shall be used for pressure testing to detect leaks. Proceed to system evacuation using the Deep Vacuum Method.

7.6 DEEP VACUUM METHOD

The Deep Vacuum Method requires a vacuum pump rated for 500 microns or less. This method effectively and efficiently ensures the system is free of non-condensable air and moisture. The Triple Evacuation Method is detailed in the Service Manual for this product model as an alternative. To expedite the evacuation procedure, it is recommended that the Schrader Cores be removed from the service valves using a core-removal tool.

1. Connect the vacuum pump, micron gauge, and vacuum-rated hoses to both service valves. Evacuation must use both service valves to eliminate system mechanical seals.
2. Evacuate the system to less than 500 microns.
3. Isolate the pump from the system and hold the vacuum for 10 minutes (minimum). Typically, pressure will rise slowly during this period. If the pressure rises to less than 1000 microns and remains steady, the system is considered leak-free; proceed to system charging and startup.
4. If pressure rises above 1000 microns but holds steady below 2000 microns, non-condensable air or moisture may remain, or a small leak may be present. Return to step 2: If the same result is achieved, check for leaks and repair. Repeat the evacuation procedure.
5. If pressure rises above 2000 microns, a leak is present. Check for leaks and repair them. Then, repeat the evacuation procedure.

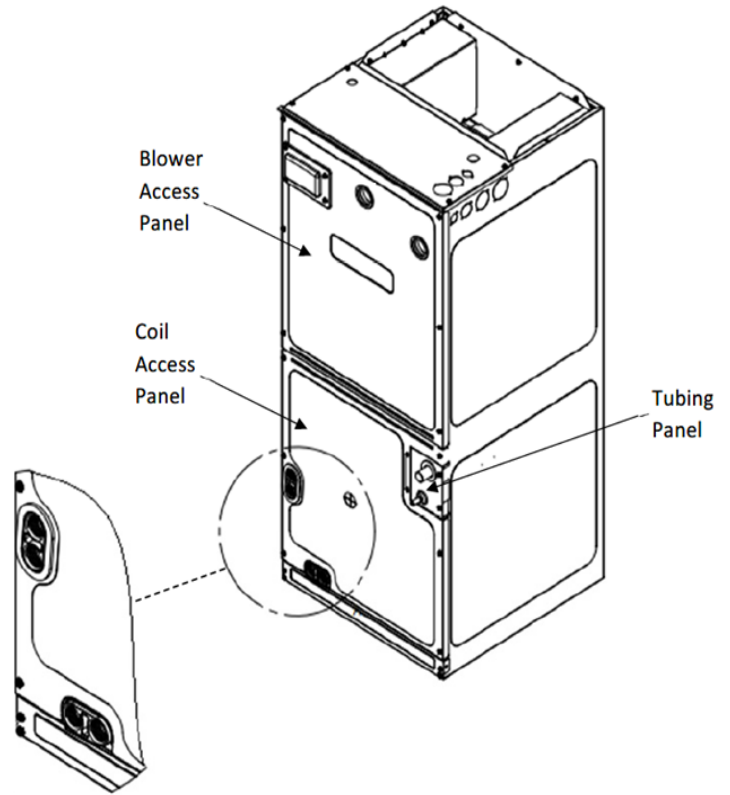
 CAUTION
<p>EXCESSIVE TORQUE CAN CAUSE THE TXV RETAINING RING TO WEAKEN & CREATE A LEAK. THIS WILL MAKE IT DIFFICULT TO RE-INSTALL. THE PROPER TORQUE SETTINGS SHOULD BE CONFIGURED AS BELOW WHEN ADJUSTING: OILED EQUALIZER SHOULD BE SET TO 10-12 FT/LBS. OUTLET AND INLET CHAT FITTING SHOULD BE SET TO 15-20 FT/LBS.</p>

7.7 LEAK DETECTION METHODS

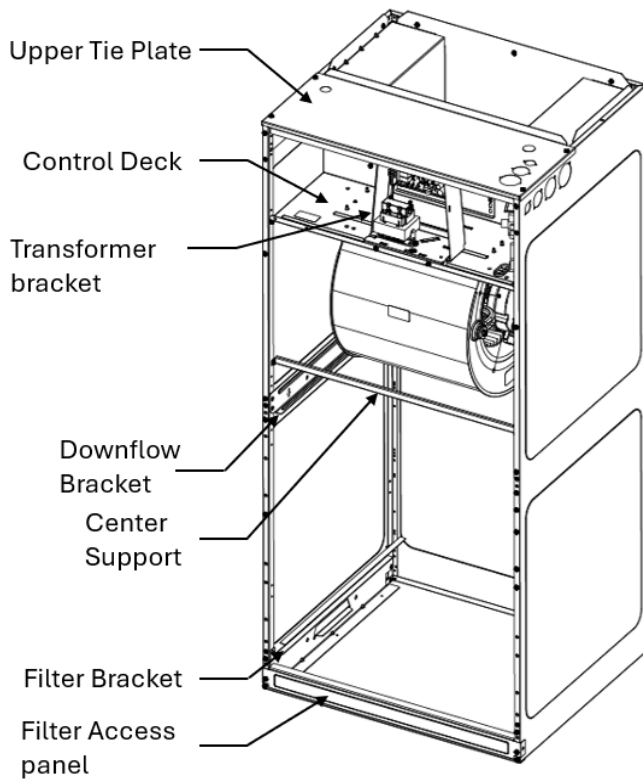
Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used. If a leak is suspected, all naked flames shall be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak.

The following leak detection methods have been deemed acceptable, provided proper care is taken in their implementation:

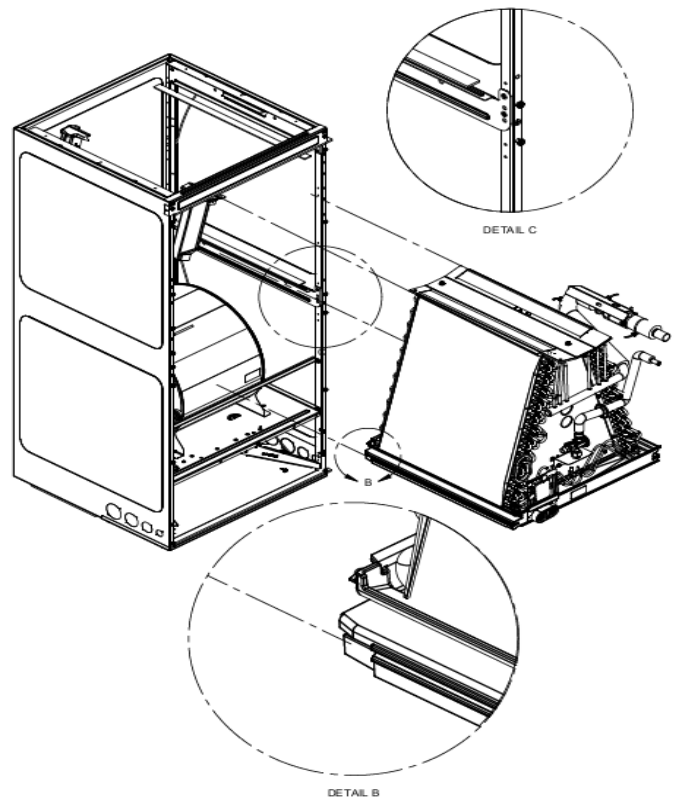
1. A2L compatible electronic leak detectors rated for use with R-32 refrigerant. Ensure the detection equipment is calibrated in a refrigerant-free area and that the leak detector itself is not a potential source of ignition. Leak detection equipment shall be set at a value of no more than 0.075 kg/m³ (1.2 lb/ft³).
2. Leak detection fluids - such as the bubble method or fluorescent method. Ensure that the use of detergents containing chlorine are avoided as the chlorine may react with the refrigerant and corroded the pipe-work.



**EXTERNAL PART TERMINOLOGY
FIGURE 8**

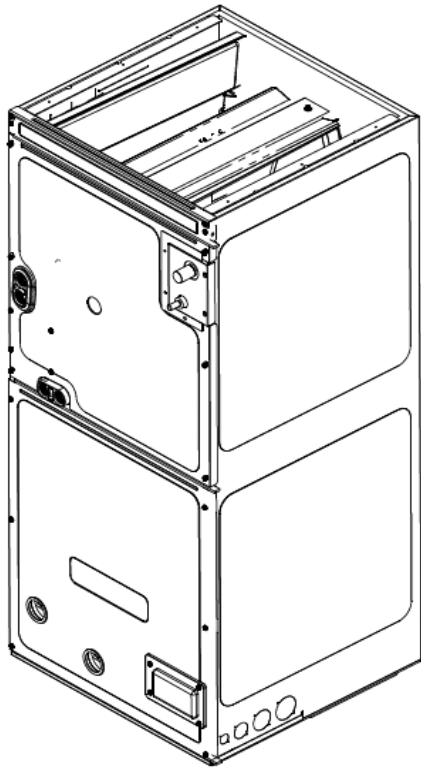


**INTERNAL PART TERMINOLOGY
FIGURE 7**

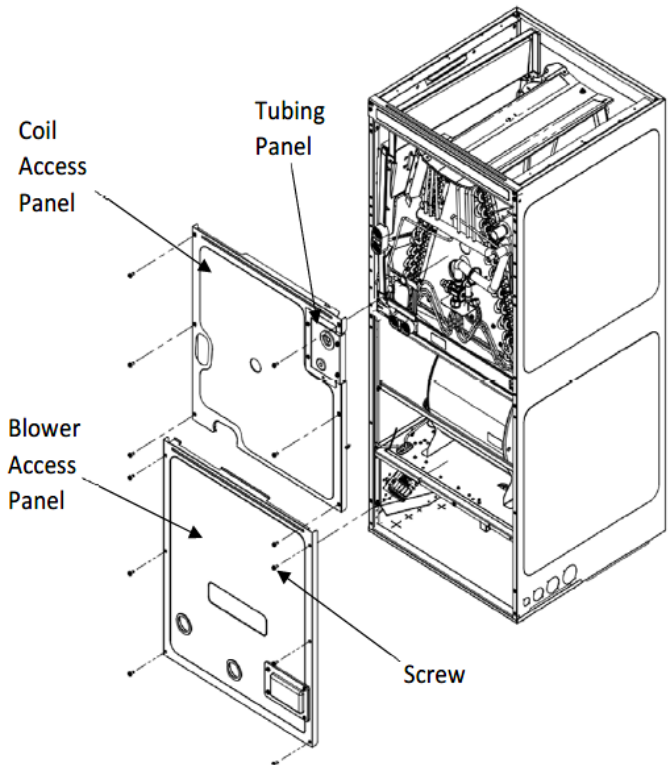


**COIL INSTALLATION FOR DOWNFLOW
FIGURE 9**

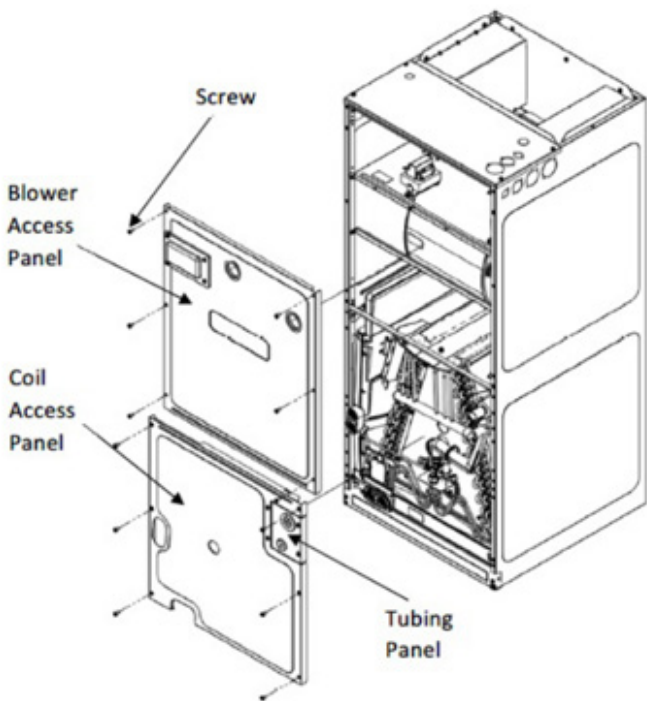
IMPORTANT NOTE: Ensure coil slides on the rails along the groove provided on the drain pan side walls. Failure to do so will result in improper condensate drainage.



**ACCESS PANEL CONFIGURATION FOR DOWNFLOW OR HORIZONTAL RIGHT
FIGURE 10**



**EXPLODED VIEW OF EXTERNAL PART TERMINOLOGY FOR DOWNFLOW
FIGURE 12**



**EXPLODED VIEW OF EXTERNAL PART TERMINOLOGY FOR UPFLOW
FIGURE 11**

8 Condensate Drain Lines

The coil drain pan has a primary and a secondary drain with $\frac{3}{4}$ " NPT female connections. The connectors required are $\frac{3}{4}$ " NPT male, either PVC or metal pipe, and should be hand tightened to a torque of no more than 37 in-lbs. to prevent damage to the drain pan connection. An insertion depth of approximately $\frac{3}{8}$ " to $\frac{1}{2}$ " (3-5 turns) should be expected at this torque.

1. Ensure drain pan hole is not obstructed.
2. To prevent potential sweating and dripping on to finished space, it may be necessary to insulate the condensate drain line located inside the building. Use Armaflex® or similar material.

A secondary condensate drain connection has been provided for areas where the building codes require it. Pitch all drain lines a minimum of $\frac{1}{4}$ " per foot to provide free drainage. Provide required support to the drain line to prevent bowing.

If the secondary drain line is required, run the line separately from the primary drain and end it where condensate discharge can be easily seen.

NOTE: Water coming from secondary line means the coil primary drain is plugged and needs immediate attention.



CAUTION

IF SECONDARY DRAIN IS NOT INSTALLED, THE SECONDARY ACCESS MUST BE PLUGGED.

Insulate drain lines located inside the building or above a finished living space to prevent sweating. Install a condensate trap to ensure proper drainage.

NOTE: When units are installed above ceilings, or in other locations where damage from condensate overflow may occur, it is MANDATORY to install a field fabricated auxiliary drain pan under the coil cabinet enclosure.

The installation must include a "P" style trap that is located as close as is practical to the evaporator coil. See Figure 12 for details of a typical condensate line "P" trap.

NOTE: Units operating in high static pressure applications may require a deeper field constructed "P" style trap than is shown in Figure 13 to allow proper drainage and prevent condensate overflow.

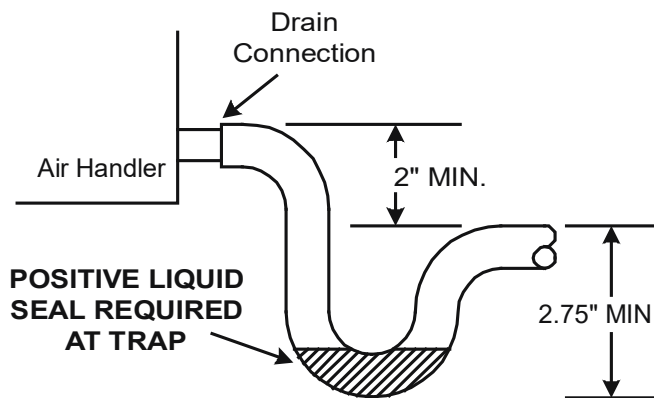


FIGURE 13

NOTE: Trapped lines are required by many local codes. In the absence of any prevailing local codes, please refer to the requirements listed in the Uniform Mechanical Building Code.

A drain trap in a draw-through application prevents air from being drawn back through the drain line during fan operation thus preventing condensate from draining, and if connected to a sewer line to prevent sewer gases from being drawn into the airstream during blower operation.

Use of a condensate removal pump is permitted when necessary. This condensate pump should have provisions for shutting off the control voltage should a blocked drain occur. A trap must be installed between the unit and the condensate pump.

IMPORTANT NOTE: The evaporator coil is fabricated with oils that may dissolve styrofoam and certain types of plastics. Therefore, a removal pump or float switch must not contain any of these materials.

Tip: Priming the "P" trap may avoid improper draining at the initial installation and at the beginning of the cooling season.

9 Ductwork

This air handler is designed for a complete supply and return ductwork system.



WARNING

ALL REQUIRED VENTILATION OPENINGS MUST BE CLEAR OF OBSTRUCTION AND ALL DUCTS CONNECTED TO THE APPLIANCE FREE OF POTENTIAL IGNITION SOURCES.



CAUTION

DO NOT OPERATE THIS PRODUCT WITHOUT ALL THE DUCTWORK ATTACHED.

To ensure correct system performance, the ductwork is to be sized to accommodate 350-450 CFM per ton of cooling with the static pressure not to exceed 0.5" in w.c. Refer to ACCA Manual D, Manual S and Manual RS for information on duct sizing and application. Flame retardant ductwork is to be used and sealed to the unit in a manner that will prevent leakage.

NOTE: A downflow application with electric heat must have an L-shaped sheet metal supply duct without any outlets or registers located directly below the heater.

9.1 RETURN DUCTWORK

Instructions for wiring to external zoning dampers and/or mechanical ventilation, if required to ensure that upon detection of a leak, the zoning dampers are driven fully open and additional mechanical ventilation is activated.

For appliances using R-32 REFRIGERANTS, connected via an air duct system to one or more rooms, the supply and return air shall be directly ducted to the space. Open areas such as false ceilings shall not be used as a return air duct.

For mechanical ventilation the air extraction opening from the room shall be located equal or below the refrigerant release point. For floor mounted units, it shall be as low as practicable. The air extraction openings shall be located in a sufficient distance from the air intake openings to prevent re-circulation to the space.

DO NOT LOCATE THE RETURN DUCTWORK IN AN AREA THAT CAN INTRODUCE TOXIC, OR OBJECTIONABLE FUMES/ODORS INTO THE DUCTWORK. The return ductwork is to be connected to the air handler bottom (upflow configuration).

10 Return Air Filters

NOTE: For DMVT24BP1300 only: If installing a filter, an external filter must be used when installing the unit in Horizontal Right, or if the side drain pan is not removed for Down Flow application. A filter will not fit on the internal filter rails in these applications.**

Each installation must include a return air filter. This filtering may be performed at the air handler using the factory filter rails or externally such as a return air filter grille. When using the factory filter rails, a nominal 16x20x1", 20x20x1" or 24x20x1" (actual dimension must be less than 23-1/2"x20") filter can be installed on a B, C and D cabinet respectively (the cabinet size is the seventh letter of the model number).

IMPORTANT NOTE: If appliance is equipped with UVC coil and air purifier, turn off the appliance before opening filter access door panel to change and install filter.

11 Electric Heat

Refer to the installation manual provided with the electric heat kit for the correct installation procedure. All electric heat must be field installed. Transformer must be detached during heater kit installation process. Refer Figure 16. If installing this option, the ONLY heat kit that is permitted to be used is HKTS* series. Refer to the air handler unit's Serial and Rating plate or the HKTS* specification sheets to determine the heat kits compatible with a given air handler. No other accessory heat kit besides the HKTS* series may be installed in these air handlers.

The heating mode temperature rise is dependent upon the system airflow, the supply voltage, and the heat kit size (kW) selected. Use data provided in Tables 5, 6, AND 7 to determine the temperature rise (°F).

NOTE: For installations not indicated above the following formula is to be used:

$$TR = (kW \times 3412) \times (\text{Voltage Correction}) / (1.08 \times \text{CFM})$$

Where: TR = Temperature Rise
 kW = Heater Kit Actual kW
 3412 = Btu per kW
 VC* = .96 (230 Supply Volts)
 = .92 (220 Supply Volts)
 = .87 (208 Supply Volts)
 1.08 = Constant
 CFM = Measured Airflow

*VC (Voltage Correction)

NOTE: The Temperature Rise Tables can also be used to estimate the air handler airflow delivery. When using these tables for this purpose set the room thermostat to maximum heat and allow the system to reach steady state conditions. Insert two thermometers, one in the return air and one in the supply air. The temperature rise is the supply air temperature minus the room air temperature. Using the temperature rise calculated, CFM can be estimated from the TR formula above. See Service Manual for more information.

CFM	HEAT KIT NOMINAL kW							
	3	5	6	8	10	15	19/20	25
800	12	19	23	31	37	56		
1000	9	15	19	25	30	44		
1200	8	12	15	21	25	37	49	62
1400	7	11	13	18	21	32	42	53
1600	6	9	12	15	19	28	37	46
1800	5	8	10	14	16	25	33	41
2000	5	7	9	12	15	22	30	37

230/1/60 SUPPLY VOLTAGE - TEMP. RISE °F

TABLE 5

CFM	HEAT KIT NOMINAL kW							
	3	5	6	8	10	15	19/20	25
800	11	18	22	30	35	54		
1000	9	14	18	24	28	42		
1200	7	12	15	20	24	35	47	56
1400	6	10	13	17	20	30	40	48
1600	6	9	11	15	18	27	35	42
1800	5	8	10	13	16	24	31	37
2000	4	7	9	12	14	21	28	33

220/1/60 SUPPLY VOLTAGE - TEMP. RISE °F

TABLE 6

CFM	HEAT KIT NOMINAL kW							
	3	5	6	8	10	15	19/20	25
800	10	17	21	28	33			
1000	8	13	17	22	27	40		
1200	7	11	14	19	22	33	45	56
1400	6	10	12	16	19	29	38	48
1600	5	8	10	14	17	25	33	42
1800	5	7	9	12	15	22	30	37
2000	4	7	8	11	13	20	27	33

208/1/60 SUPPLY VOLTAGE - TEMP. RISE °F

TABLE 7

11.1 PCB AND TRANSFORMER BRACKET ASSEMBLY WHILE INSTALLING HEATER KIT

1. Remove upper access panel and secure 6 screws as shown in figure 14
2. Disconnect wires from PCB and transformer prior to removing bracket. Refer Figure 15
3. Remove bracket 2 screws at bottom and front of control panel as shown in figure 16

4. For Electric heat refer to the installation manual provided with the electric heat kit for the correct installation procedure
5. Assembly bracket at original location with 2 screws at bottom and 2 screws at front of the control desk
6. Rewire as shown in wiring diagram. Refer to wiring diagram
7. Reassemble upper access panel by using 6 screws as shown figure 14

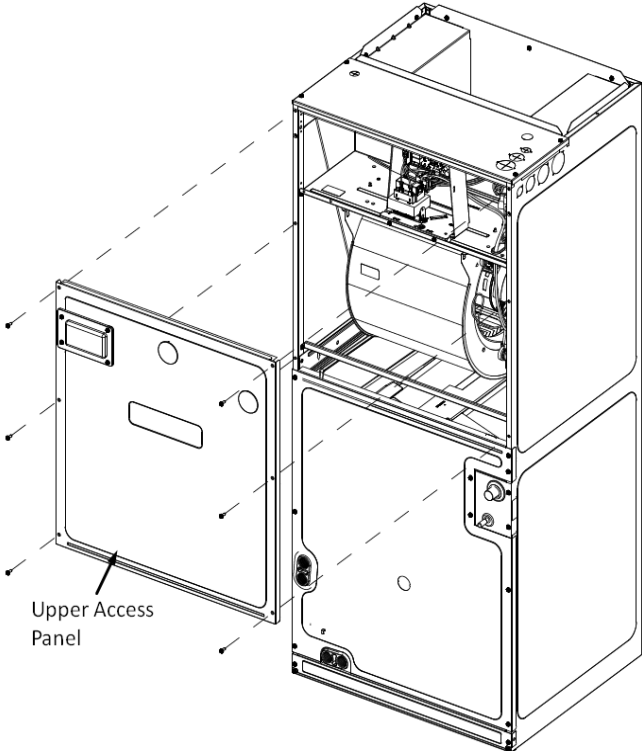


FIGURE 14

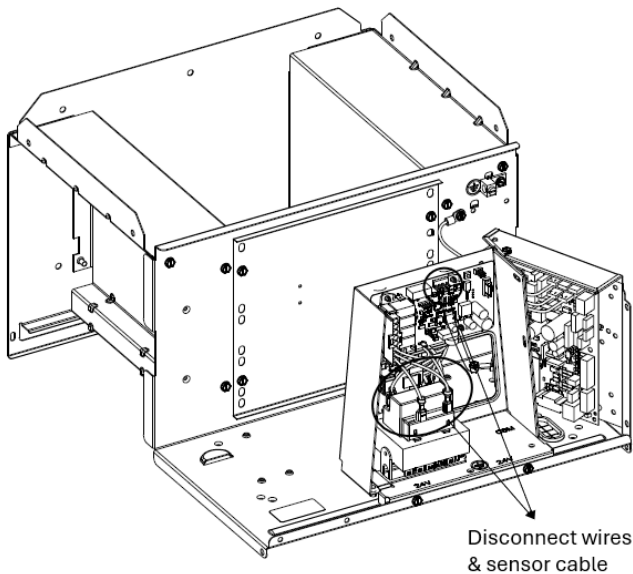


FIGURE 15

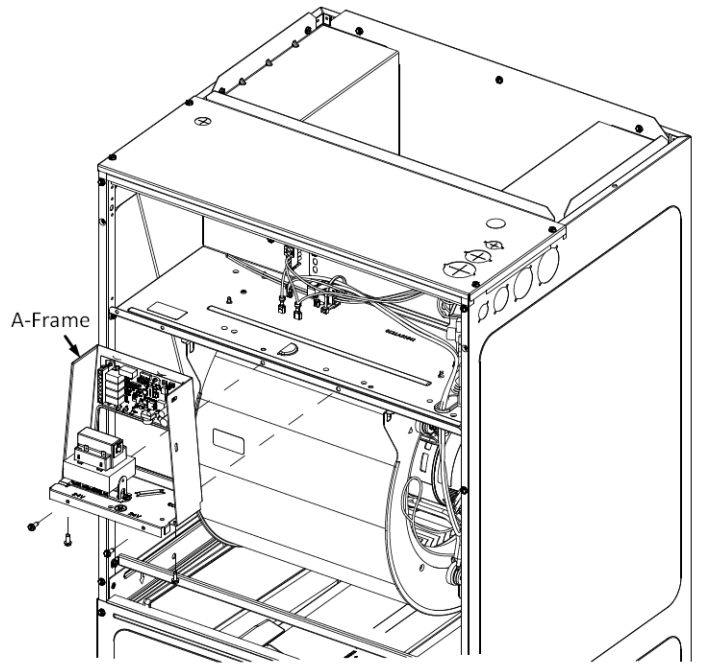


FIGURE 16

12 Electrical and Control Wiring

IMPORTANT: All routing of electrical wiring must be made through provided electrical knockouts. Do not cut, puncture or alter the cabinet for electrical wiring.



WARNING

HIGH VOLTAGE
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



WARNING

HIGH VOLTAGE!
TO AVOID PROPERTY DAMAGE, PERSONAL INJURY OR DEATH DUE TO ELECTRICAL SHOCK, THIS UNIT MUST HAVE AN UNINTERRUPTED, UNBROKEN ELECTRICAL GROUND. THE ELECTRICAL GROUND CIRCUIT MAY CONSIST OF AN APPROPRIATELY SIZED ELECTRICAL WIRE CONNECTING THE GROUND LUG IN THE UNIT CONTROL BOX TO THE BUILDING ELECTRICAL SERVICE PANEL.
OTHER METHODS OF GROUNDING ARE PERMITTED IF PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC)/AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70 AND LOCAL/STATE CODES. IN CANADA, ELECTRICAL GROUNDING IS TO BE IN ACCORDANCE WITH THE CANADIAN ELECTRIC CODE (CSA) C22.1.

12.1 BUILDING ELECTRICAL SERVICE INSPECTION

DO NOT OPERATE THIS UNIT ON A THREE-PHASE POWER SUPPLY, ONLY A THREE-PHASE HEAT KIT CAN UTILIZE THREE-PHASE POWER. Measure the power supply to the unit. The supply voltage must be measured and be in agreement with the unit Serial & Rating plate power requirements and within the range shown.

12.2 WIRE SIZING

Wire size is important to the operation of the equipment. Use the following check list when selecting the appropriate wire size for your unit.

- Wire used must carry the Minimum Circuit Ampacity (MCA) listed on the unit's Serial and Rating Plate.
- Refer to the NEC (USA) or CSA (Canada) for wire sizing. The unit MCA for the air handler and the optional electric heat kit can be found on the unit Serial and Rating Plate.
- Wire must be sized to allow no more than a 2% voltage drop from the building breaker/fuse panel to the unit.
- Wires with different insulation temperature rating have varying ampacities - be sure to check the temperature rating used.

Refer to the latest edition of the National Electric Code or in Canada the Canadian Electric Code when determining the correct wire size.

12.3 MAXIMUM OVERCURRENT PROTECTION (MOP)

Every installation must include an NEC (USA) or CEC (Canada) approved overcurrent protection device. Also, check with local or state codes for any special regional requirements.

Protection can be in the form of fusing or HACR style circuit breakers. The Serial and Rating Plate provides the maximum overcurrent device permissible.

NOTE: Fuses or circuit breakers are to be sized larger than the equipment MCA but not to exceed the MOP.

Nominal Input	Minimum Voltage	Maximum Voltage
208/230 VAC	197	253

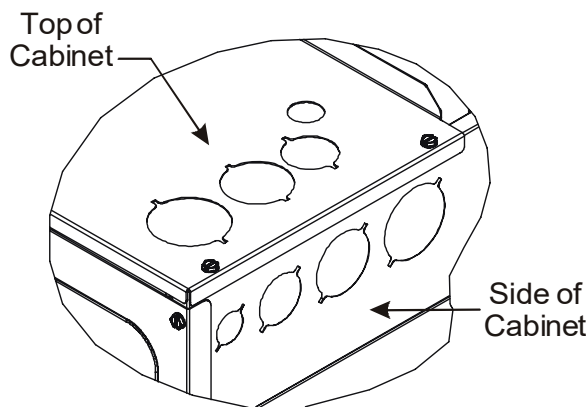
**ELECTRICAL VOLTAGE
TABLE 8**

12.4 ELECTRICAL CONNECTIONS – SUPPLY VOLTAGE

 CAUTION
FIRE HAZARD! TO AVOID THE RISK OF PROPERTY DAMAGE, PERSONAL INJURY OR FIRE, USE ONLY COPPER CONDUCTORS.

IMPORTANT NOTE: Use copper conductors only from disconnect or electrical panel to the air handler.

Knockouts are provided on the air handler top panel and sides of the cabinet to allow for the entry of the supply voltage conductors, as shown in Figure 17. Separate knockouts must be used for two circuit heat kits. Unless Single Point Wiring Kit (SPW-01) is used. If the knockouts on the cabinet sides are used for electrical conduit, an adapter ring must be used in order to meet UL 60335-2-40 safety requirements. An NEC or CEC approved strain relief is to be used at this entry point. Some codes/municipalities require the supply wire to be enclosed in conduit. Consult your local codes.



**KNOCK-OUT FOR ELECTRICAL CONNECTIONS
FIGURE 17**

12.4.1 AIR HANDLER ONLY (NON-HEAT KIT MODELS)

IMPORTANT: Installation of Air Handler must follow any local codes/regulations. The manufacturer recommends that when a heater kit is not installed, a field supplied disconnect switch or breaker should be installed in the electrical circuit that will allow power to be shut-off for service or maintenance.

The building supply connects to the stripped black and red wires contained in the air handler electrical compartment. A ground screw is also contained in this area. Attach the Supply wires to the air handler conductors as shown in the unit wiring diagram using appropriately sized solderless connectors or other NEC or CEC approved means.

12.4.2 AIR HANDLER - NON-CIRCUIT BREAKER HEAT KITS

A terminal block is provided with the HKTS* kit to attach the power supply and air handler connections. Follow the HKTS* Installation Manual and wiring diagram for complete wiring details.


12.4.3 AIR HANDLER WITH CIRCUIT BREAKER HEAT KIT


The air handler has a soft plastic cover which will only allow to access the heater kit circuit breaker. It does not allow to install or replace the circuit breaker. The circuit breakers have lugs for power supply connection. See the HKTS* Installation Instructions for further details.

12.5 LOW VOLTAGE CONNECTIONS

Several combinations of low voltage schemes are possible, depending on the presence of a heat kit and whether the heat kit is single-stage or multi-stage, whether the outdoor section is an air conditioner or heat pump, and whether the outdoor section is single-stage or two-stage. The 24V-control voltage connects the air handler to the room thermostat and condenser. Low voltage wiring must be copper conductors. A minimum of 18AWG must be used for installations up to 100 feet. Low voltage wiring must be connected through the top of the cabinet or either side. See the "Thermostat Wiring" section of this manual for typical low voltage wiring connections.

12.6 24 VOLT THERMOSTAT WIRING

 <b style="font-size: 1.2em;">WARNING
<p>HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.</p>



NOTE: Wire routing must not interfere with the circulator blower operation or routine maintenance.

The air handler's integrated control module provides terminals for "Y1" and "Y2" and "W1" and "W2" thermostat connections. This allows the air handler to support the systems shown in the following table. Refer to the following figures for typical connections to the integrated control module. Thermostat wiring entrance holes are located in the top of the blower. Wire routing must not interfere with circulator blower operation or routine maintenance.

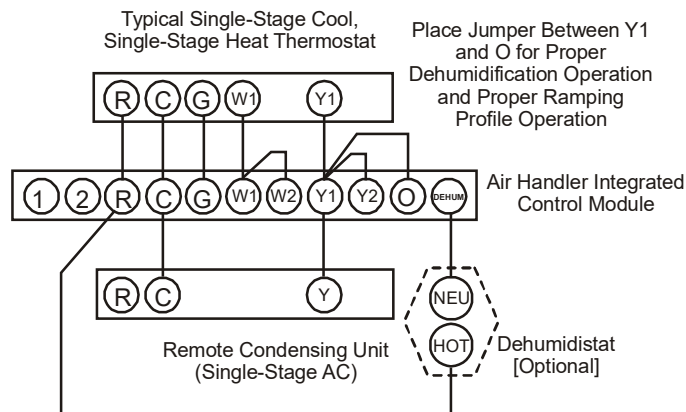
COOLING	HEAT PUMP HEATING	ELECTRIC HEATING
1-STAGE	-----	1- or 2-STAGE
2-STAGE	-----	1- or 2-STAGE
1-STAGE	1-STAGE	-----
2-STAGE	2-STAGE	-----
1-STAGE	1-STAGE	1- or 2-STAGE
2-STAGE	2-STAGE	1- or 2-STAGE

NOTE: A removable plug connector is provided with the control to make thermostat wire connections. This plug may be removed, wire connections made to the plug, and replaced. It is strongly recommended that you do not connect multiple wires into a single terminal. Wire nuts are recommended to ensure one wire is used for each terminal. Failure to do so may result in intermittent operation.

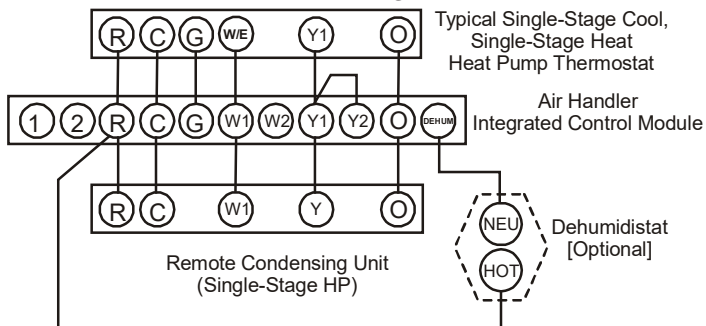
Model	HEATER KIT (Kw)								
	3	5	6	8	10	15	19	20	25
DMVT24BP13	550	650	700	800	850	875			
DMVT30BP13	550	650	700	800	875	1050			
DMVT36CP13		735	810	935	1020	1145	1345		
DMVT42CP13		735	810	935	1020	1145	1345		
DMVT48CP13		880	880	1045	1200	1420	1480		
DMVT60DP13		1135	1265	1375	1455	1815		1860	1925

*Airflows shown are to be considered the absolute minimum allowable for the Air handler and Heat kit combination. The minimum airflow does not represent the recommended airflow by the manufacturer. When selecting a heater kit, the Minimum Blower Setting (M.B.S.) or speed tap listed on the unit's nameplate should be followed.

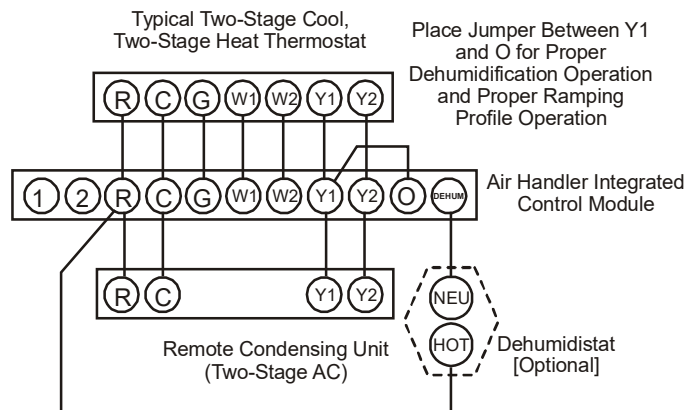
MINIMUM CFM REQUIRED FOR HEATER KITS
TABLE 9



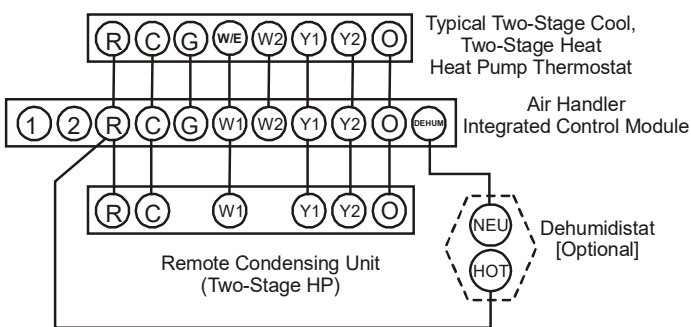
TYPICAL SINGLE-STAGE COOLING WITH SINGLE-STAGE HEATING



TYPICAL SINGLE-STAGE HEAT PUMP WITH AUXILIARY/EMERGENCY HEATING



TYPICAL TWO-STAGE COOLING WITH TWO-STAGE HEATING



TYPICAL TWO STAGE HEAT PUMP HEATING AND AUXILIARY/EMERGENCY HEATING

The optional usage of a dehumidistat allows the air handler's circulator blower to operate at a slightly lower speed during a combined thermostat call for cooling and dehumidistat call for dehumidification. This lower blower speed enhances dehumidification of the conditioned air as it passes through the AC coil. For proper function, a dehumidistat applied to this air handler must operate on 24 VAC and utilize a switch which *opens on humidity rise*.

To install/connect a dehumidistat:

1. Turn OFF power to air handler.
2. Secure the dehumidistat neutral wire (typically the white lead) to the screw terminal marked "DEHUM" on the air handler's integrated control module.
3. Secure the dehumidistat hot wire (typically the black lead) to the screw terminal marked "R" on the air handler's integrated control module.
4. Secure the dehumidistat ground wire (typically the green lead) to the ground screw on the air handler. NOTE: Ground wire may not be present on all dehumidistats.
5. To enable the dehumidification function, move the dehumidification dip switch (S7) from OFF to ON. See following figure.

Turn ON power to air handler.

13 Achieving 1.4% Low Leakage Rate

Ensure all the gaskets remain intact on all surfaces as shipped with the unit. These surfaces are areas between the upper tie plate and blower access panel, blower access and coil access panels, and between the coil access and filter access panels. Ensure upon installation, that the plastic breaker cover is sitting flush on the blower access panel and all access panels are flush with each other and the cabinet. With these requirements satisfied, the unit achieves less than 1.4% airflow leakage when tested in accordance with ASHRAE Standard 193.

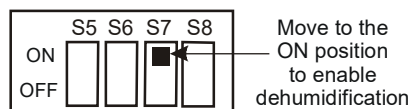
14 Circulator Blower

AUXILIARY ALARM SWITCH

The control is equipped with two Auxiliary Alarm terminals labeled CAS which can be utilized with communicating mode setups (typically used for condensate switch wiring but could be used with compatible CO2 sensors or fire alarms).

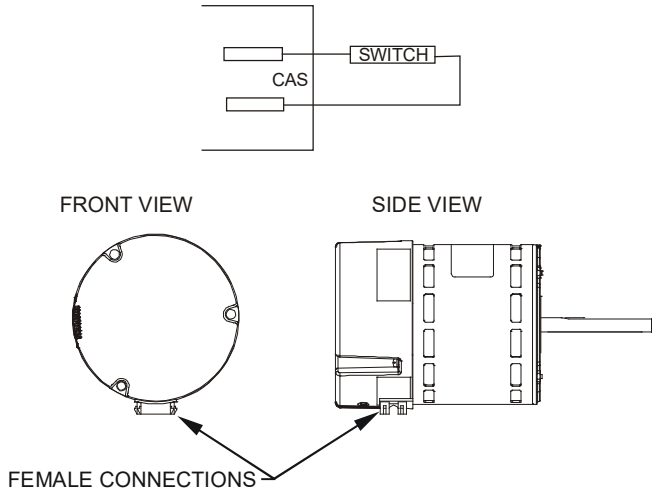
Legacy Mode Use

In a legacy system (Non-communicating), this feature is not operational. Any auxiliary alarm switch must be used to interrupt the Y1 signal either to the indoor or outdoor unit.



Communication Mode Use

This feature can be activated or deactivated through the thermostat user menus. An auxiliary alarm switch must be normally closed and open when the base pan's water level in the evaporator coil reaches a particular level. The control will respond by turning off the outdoor compressor and display the proper fault codes. If the switch is detected closed for 30 seconds, normal operation resumes and the error message will be removed.



MOTOR ORIENTATION

If the unit is in the upflow position, there is no need to rotate the motor. If the unit is in the downflow position, loosen motor mount and rotate motor as shown in the Motor Orientation figure below. Be sure motor is oriented with the female connections on the casing down. If the motor is not oriented with the connections down, water could collect in the motor and may cause premature failure. This air handler is equipped with a multi-speed circulator blower. This blower provides ease in adjusting blower speeds. The Specification Sheet applicable to your model provides an airflow table, showing the relationship between airflow (CFM) and external static pressure the relationship between airflow (CFM) and external static pressure (E.S.P.), for the proper selection of heating and cooling speeds. The heating blower speed is shipped set at 21kW or 25kW, and the cooling blower speed is set at "D". These blower speeds should be adjusted by the installer to match the installation requirements so as to provide the correct electric heating CFM and correct cooling CFM.

Use the CFM LED (green) to obtain an approximate airflow quantity. The green CFM LED blinks once for each 100 CFM of airflow.

1. Determine the tonnage of the cooling system installed with the air handler. If the cooling capacity is in BTU/hr divide it by 12,000 to convert capacity to TONS.

EXAMPLE: Cooling Capacity of 30,000 BTU/hr.
 $30,000/12,000 = 2.5$ Tons

Annex GG - Mitigation Mode Table

Model	Qmin CFM	Minimum Room Area	Minimum Room Area
	Requirement	Requirement (TAmin-m2)	Requirement (TAmin – ft2)
DMVT24BP1300	384	19.78	213
DMVT30BP1300	384	19.78	213
DMVT36CP1300	448	23.09	249
DMVT42CP1300	448	23.09	249
DMVT48CP1300	678	34.93	376
DMVT60DP1300	613	31.55	340

QMIN IS THE MINIMUM CIRCULATION AIRFLOW CIRCULATED TO THE TOTAL CONDITIONED SPACE

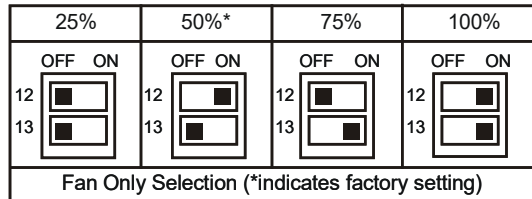
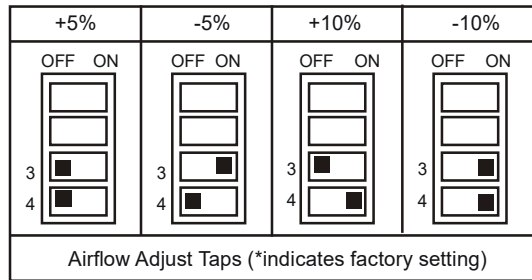
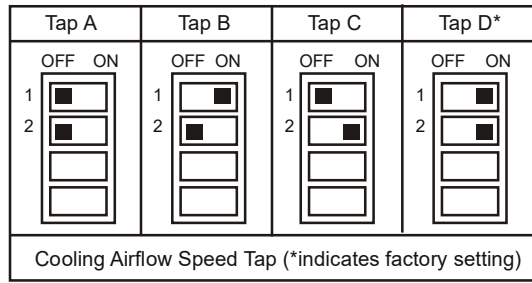
TAMIN IS THE REQUIRED MINIMUM AREA OF THE TOTAL CONDITIONED SPACE

TABLE 10

- Determine the proper airflow for the cooling system. Most cooling systems are designed to work with airflows between 350 and 450 CFM per ton. Most manufacturers recommend an airflow of about 400 CFM per ton.
EXAMPLE: 2.5 tons X 400 CFM per ton = 1000 CFM

The cooling system manufacturer's instructions must be checked for required airflow. Any or other devices may require a specific airflow; consult installation instructions of those devices for requirements.

- Knowing the air handler model, locate the high stage cooling airflow charts in the Specification Sheet applicable to your model. Look up the cooling airflow determined in step 2 and find the required cooling speed and adjustment setting.
EXAMPLE: A DMVT30BP13 air handler installed with a 2.5 ton air conditioning system. The airflow needed is 1000 CFM. Looking at the cooling speed chart for DMVT30BP13, find the airflow closest to 1000 CFM. A cooling airflow of 1000 CFM can be attained by setting the cooling speed to "C" and the adjustment to "0" (no adjustment).
- Locate the blower speed selection DIP switches on the integrated control module. Select the desired "cooling" speed tap by positioning switches 1 and 2 appropriately. If airflow adjustment is required, set dip switch S8 (trim enable) to ON (trim enable default is off). Then select the desired "adjust" tap by positioning switches S3 and S4 appropriately. Refer to the following Airflow Adjust Taps figure for switch positions and their corresponding taps. Verify CFM by counting the number of times the green CFM LED blinks.
- Continuous fan speeds that provide 25, 50, 75, and 100% of the air handler's maximum airflow capability are selectable via dip switches S12 and S13. If the air handler's maximum airflow capability is 2000 CFM and 25% continuous fan speed is selected, the continuous fan speed will be $0.25 \times 2000 \text{ CFM} = 500 \text{ CFM}$.
- The multi-speed circulator blower also offers several custom ON/OFF ramping profiles. These profiles may be used to enhance cooling performance and increase comfort level. The ramping profiles are selected using DIP switches 5 and 6. Refer to the following Dip Switches - Cooling Airflow. *Ramping Profiles* figure for switch positions and their corresponding taps. Refer to the bullet points below for a description of each ramping profile. Verify profile selection by counting the green CFM LED blinks and timing each step of the ramping profile. The CFM LED blinks once for each 100 CFM of air flow.

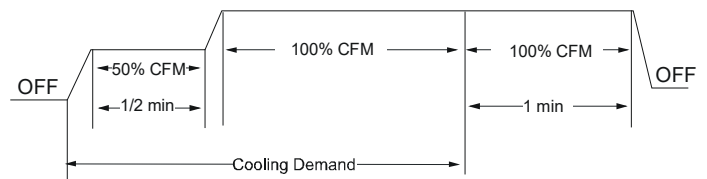


DIP SWITCHES - COOLING AIRFLOW AND AIRFLOW ADJUST TAPS

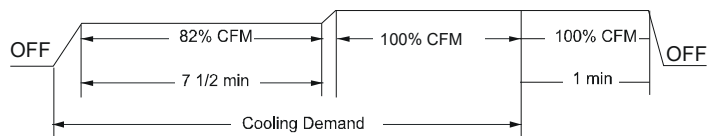
- Profile A provides only an OFF delay of one (1) minute at 100% of the cooling demand airflow.

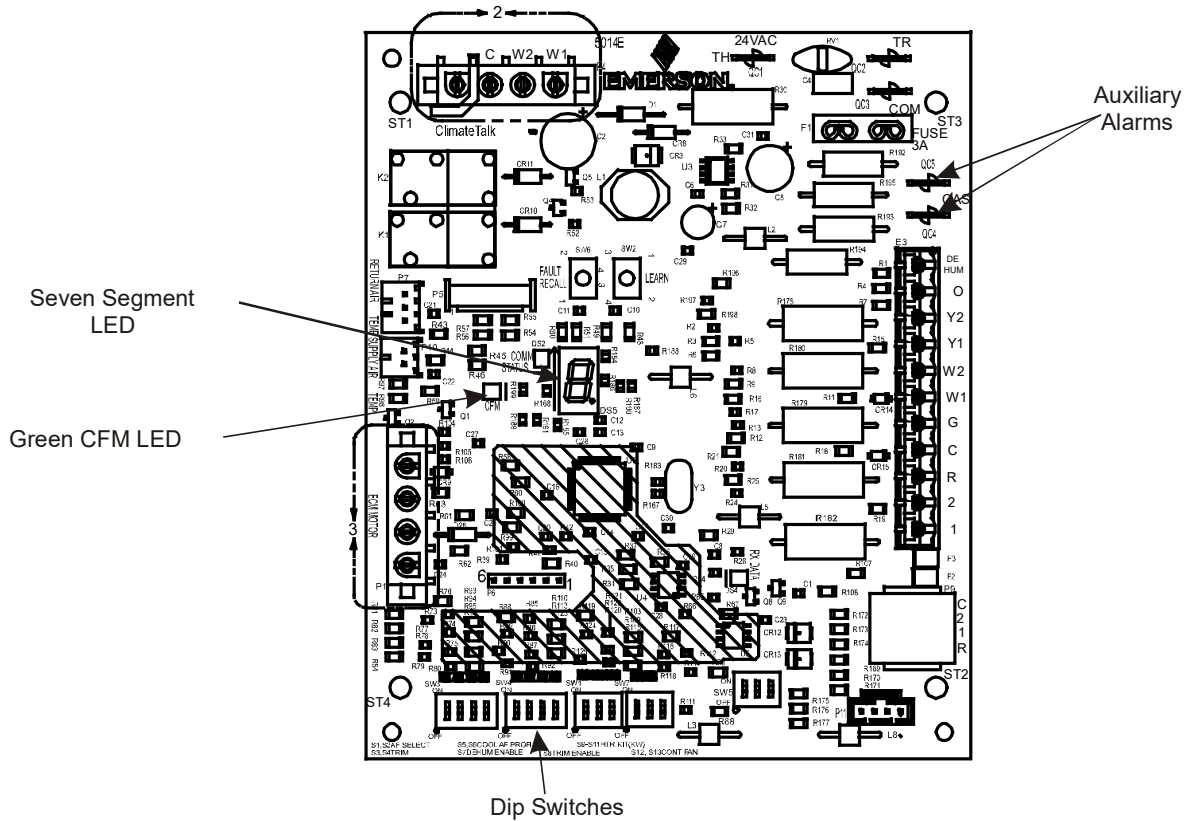


- Profile B ramps up to full cooling demand airflow by first stepping up to 50% of the full demand for 30 seconds. The motor then ramps to 100% of the required airflow. A one (1) minute OFF delay at 100% of the cooling airflow.



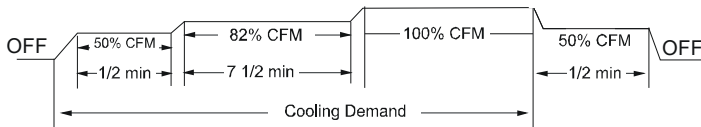
- Profile C ramps up to 82% of the full cooling demand airflow and operates there for approximately 7 1/2 minutes. The motor then steps up to the full demand airflow. Profile C also has a one (1) minute 100% OFF delay.





MOTOR ORIENTATION - COMMUNICATING BOARD

- Profile D ramps up to 50% of the demand for ½ minute, then ramps to 82% of the full cooling demand airflow and operates there for approximately 7 ½ minutes. The motor then steps up to the full demand airflow. Profile D has a ½ minute at 50% airflow OFF delay.



Tap A*	Tap B	Tap C	Tap D																																								
<table border="1"> <tr><td>OFF</td><td>ON</td></tr> <tr><td>S5</td><td>■</td></tr> <tr><td>S6</td><td>■</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	OFF	ON	S5	■	S6	■					<table border="1"> <tr><td>OFF</td><td>ON</td></tr> <tr><td>S5</td><td>■</td></tr> <tr><td>S6</td><td>■</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	OFF	ON	S5	■	S6	■					<table border="1"> <tr><td>OFF</td><td>ON</td></tr> <tr><td>S5</td><td>■</td></tr> <tr><td>S6</td><td>■</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	OFF	ON	S5	■	S6	■					<table border="1"> <tr><td>OFF</td><td>ON</td></tr> <tr><td>S5</td><td>■</td></tr> <tr><td>S6</td><td>■</td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>	OFF	ON	S5	■	S6	■				
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Cooling Airflow Ramping Profiles (*indicates factory setting)																																											

- If an electric heater kit has been installed, determine the heater kilowatt (kW) rating. Using the Electric Heat Airflow table on page 16, set dip switches 9, 10, and 11 for the installed heater. The adjust setting (already established by the cooling speed selection) also applies to the electric heater kit airflow. Thus, the electric heater airflow is adjusted by the same amount. This does not apply to systems setup with a communicating thermostat. See Set-Up section in the Air Handler Advanced Features Menu on page 22. Verify selected CFM by counting the green CFM LED blinks. If an electric heater kit has not been installed, set dip switches 9, 10, and 11 to any valid heater kit setting (see airflow table for valid settings). This will prevent an Ec Error code from being displayed.

NOTE: For installations not indicated in the preceding Temperature Rise Tables, the following formula is to be used:

$$TR = (kW \times 3412) \times (\text{Voltage Correction}) / (1.08 \times CFM)$$

Where: TR = Temperature Rise

kW = Heater Kit Actual kW

3412 = Btu per kW

Voltage Correction = .96 (230 Supply Volts)

= .92 (220 Supply Volts)

= .87 (208 Supply Volts)

























= Constant

= Measured Airflow

1.08
CFM

NOTE:

- Airflow data indicated is at 230V without air filter in place.

21 kW* or 25 kW*	19 kW or 20 kW	15 kW	10 kW	8 kW	6 kW	5 kW	3 kW
OFF ON S9  S10  S11 	OFF ON S9  S10  S11 	OFF ON S9  S10  S11 	OFF ON S9  S10  S11 	OFF ON S9  S10  S11 	OFF ON S9  S10  S11 	OFF ON S9  S10  S11 	OFF ON S9  S10  S11 
Electric Heating Airflow (*indicates factory setting)							

NOTE: Upon start up in communicating mode the circuit board may display an “Ec” error. This is an indication that the dip switches on the control board need to be configured in accordance with the Electric Heating Airflow Table. Configuring the dip switches and resetting power to the unit will clear the error code. Within the Daikin communicating thermostat user menu, will display 20 kW for OFF-OFF-ON dip switch selection and 21 kW for OFF-OFF-OFF dip switch selection.

- The cooling/heat pump speed tap should be selected based on the AHRI rating. Otherwise, select a speed tap that provides a minimum 350 CFM per outdoor ton. For satisfactory operation, external static pressure must not exceed 0.5" WC.

EXAMPLE: For a 2 ton outdoor, C -10% trim is the lowest valid speed for DMVT24BP1300 (702 SCFM at 0.5" WC).

	Outdoor Unit Tonnage						
	1.5	2	2.5	3	3.5	4	5
Minimum Cooling/Heating CFM @ .5" WC ESP	525	700	875	1050	1225	1400	1750

- Use the CFM adjustment factors of 0.98 for horizontal left and 0.96 for horizontal right and downflow orientations.

15 Troubleshooting

HEAT KIT SELECTION

For heat kit selection, see the Specification Sheet for each specific Air Handler.


15.1 ELECTROSTATIC DISCHARGE (ESD) PRECAUTIONS

NOTE: Discharge body's static electricity before touching unit. An electrostatic discharge can adversely affect electrical components.


Use the following precautions during air handler installation and servicing to protect the integrated control module from damage. By putting the air handler, the control, and the person at the same electrostatic potential, these steps will help avoid exposing the integrated control module to electrostatic discharge. This procedure is applicable to both installed and uninstalled (ungrounded) blowers.

- Disconnect all power to the blower. Do not touch the integrated control module or any wire connected to the control prior to discharging your body's electrostatic charge to ground.

- Firmly touch a clean, unpainted, metal surface of the air handler blower near the control. Any tools held in a person's hand during grounding will be discharged.
- Service integrated control module or connecting wiring following the discharge process in step 2. Use caution not to recharge your body with static electricity; (i.e., do not move or shuffle your feet, do not touch ungrounded objects, etc.). If you come in contact with an ungrounded object, repeat step 2 before touching control or wires.
- Discharge your body to ground before removing a new control from its container. Follow steps 1 through 3 if installing the control on a blower. Return any old or new controls to their containers before touching any ungrounded object.

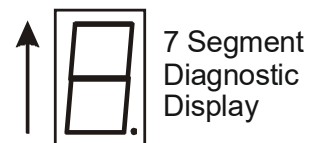

WARNING

HIGH VOLTAGE
TO AVOID PERSONAL INJURY OR DEATH DIE TO ELECTRICAL SHOCK, DISCONNECT ELECTRICAL POWER BEFORE PERFORMING ANY SERVICE OR MAINTENANCE.



15.2 DIAGNOSTIC CHART

Refer to the Troubleshooting Chart at the end of this manual for assistance in determining the source of unit operational problems. The 7 segment LED display will provide any active fault codes. An arrow printed next to the display indicates proper orientation (arrow points to top of display). See following image.



Airflow Label

Speed Selection Dip Switches									
TAP	Cool Selection Switches		Adjust Selection Switches		Profile Selection Switches		Continuous Fan Speed		
	S1	S2	S3	S4	S5	S6	S12	S13	
A	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
B	ON	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
C	OFF	ON	OFF	ON	OFF	ON	OFF	OFF	ON
D	ON	ON	ON	ON	ON	ON	ON	ON	ON
Profiles		Pre-Run		Short-Run		OFF Delay			
A		-----		-----		60 sec/100%			
B		-----		30 sec/50%		60 sec/100%			
C		-----		7.5 min/82%		60 sec/100%			
D		-----		7.5 min/82%		30 sec/50%			

To set Airflow: (1) Select model and desired High Stage Cooling Airflow. Determine the corresponding tap (A, B, C, D). Set dip switches S1 and S2 to the appropriate ON / OFF positions. (2) Select model and installed electric heater size. Set dip switches S9, S10, and S11 to the appropriate ON / OFF positions. (3) If airflow adjustment is required set Trim Enable Switch S8 to ON (OFF = 0% Trim) and set S3 and S4 to appropriate ON / OFF positions. Tap A is +5%, Tap B is -5%, Tap C is +10%, Tap D is -10%.

To Set Comfort mode: Select desired Comfort Mode Profile (see profiles above). Set dip switches S5 and S6 to appropriate ON / OFF positions.

Dehumidification: To enable, set dip switch S7 to ON. Cooling airflow will be reduced to 85% of nominal value during cool call when Dehum command is present. To disable, set S7 to OFF.

Continuous Fan Speed: Use dip switches S12 and S13 to select one of 4 continuous fan speeds, Tap A is 25%. Tap B is 50%, Tap C is 75%, Tap D is 100%.

Cooling/Heat Pump Airflow Table				
Model	Tap	Low Stage Cool	High Stage Cool	
DMVT24BP13*	A	370	550	
	B	440	660	
	C	525	780	
	D	655	975	
DMVT30BP13*	A	395	590	
	B	480	720	
	C	575	860	
	D	705	1050	
DMVT36CP13*	A	530	790	
	B	635	950	
	C	755	1125	
	D	805	1200	
DMVT42CP13*	A	670	1000	
	B	805	1200	
	C	870	1300	
	D	940	1400	
DMVT48CP13*	A	805	1200	
	B	870	1300	
	C	935	1395	
	D	1000	1490	
DMVT60DP13*	A	940	1400	
	B	1005	1500	
	C	1165	1740	
	D	1195	1785	


Notes:

- Airflow data shown applies to legacy mode operation only. For a fully communicating system, please see the outdoor unit's installation instructions for cooling and heat pump airflow data. See *ComfortNet System-Airflow Consideration section for details.*
- Airflow blink codes are approximations of actual airflow.

Electric Heat Airflow Table									
Htr Kw	S9	S10	S11	DMVT24BP13*	DMVT30BP13*	DMVT36CP13*	DMVT42CP13*	DMVT48CP13*	DMVT60DP13*
3	ON	ON	ON	550	550	630	NR	NR	NR
5	ON	ON	OFF	650	650	735	735	880	1135
6	ON	OFF	ON	700	700	810	810	880	1265
8	ON	OFF	OFF	800	800	925	925	1045	1375
10	OFF	ON	ON	850	875	1020	1020	1200	1455
15	OFF	ON	OFF	875	1050	1145	1145	1420	1815
19	OFF	OFF	ON	NR	NR	1345	1345	1480	NR
20	OFF	OFF	ON	NR	NR	NR	NR	NR	1860
25	OFF	OFF	OFF	NR	NR	NR	NR	NR	1925

Note: Airflow data shown applies to the electric heat only in either legacy mode or communicating mode operation.

NR- Not Rated.



0140A01613-A

TABLE 11

15.3 FAULT RECALL

The integrated control module is equipped with a momentary push-button switch that can be used to display the last six faults on the 7 segment LED display. The control must be in Standby Mode (no thermostat inputs) to use the feature. Depress the push-button for approximately two seconds and less than five seconds. The LED display will then display the six most recent faults beginning with the most recent fault and decrementing to the least recent fault. The faults may be cleared by depressing the button for greater than five seconds.

NOTE: Consecutively repeated faults are displayed a maximum of three times. Example: A clogged return air filter causes the air handler's motor to repeatedly enter a limiting condition. The control will only store this fault the first three consecutive times the fault occurs.

16 Fully Communicating Daikin System

16.1 OVERVIEW

NOTE: For a detailed procedure of thermostat commissioning process, please visit the Daikin One+ website at <http://daikinone.com>.

The Communicating system is a system that includes a Communicating compatible air handler and air conditioner or heat pump with a Daikin Communicating thermostat. Any other system configurations are considered invalid Communicating systems and must be connected as a traditional (or non-communicating) system (see the 24 Volt Thermostat Wiring - Non-Communicating Thermostat Connections section for details).

A Communicating heating/air conditioning system differs from a non-communicating/traditional system in the manner in which the indoor unit, outdoor unit and thermostat interact with one another. In a traditional system, the thermostat sends commands to the indoor and outdoor units via analog 24 VAC signals. It is a one-way communication path in that the indoor and outdoor units typically do not return information to the thermostat. On the other hand, the indoor unit, outdoor unit, and thermostat comprising a Communicating system "communicate" digitally with one another. It is now a two-way communications path. The thermostat still sends commands to the indoor and outdoor units. However, the thermostat may also request and receive information from both the indoor and outdoor units. This information may be displayed on the Communicating thermostat. The indoor and outdoor units also interact with one another. The outdoor unit may send commands to or request information from the indoor unit. This two-way digital communications between the thermostat and subsystems (indoor/outdoor unit) and between subsystems is the key to unlocking the benefits and features of the Communicating system.

Two-way digital communications is accomplished using only two wires. The thermostat and subsystem controls are powered with 24 VAC. Thus, a maximum of 4 wires between the equipment and thermostat is all that is required to operate the system.

16.2 AIRFLOW CONSIDERATION

Airflow demands are managed differently in a fully communicating system than they are in a non-communicating wired system. The system operating mode (as determined by the thermostat) determines which unit calculates the system airflow demand. If the indoor unit is responsible for determining the airflow demand, it calculates the demand and sends it to the ECM motor. If the outdoor unit or thermostat is responsible for determining the demand, it calculates the demand and transmits the demand along with a fan request to the indoor unit. The indoor unit then sends the demand to the ECM motor. The following table lists the various Communicating systems, the operating mode, and airflow demand source.

For example, assume the system is a heat pump matched with an air handler. With a call for low stage cooling, the heat pump will calculate the system's low stage cooling airflow demand. The heat pump will then send a fan request along with the low stage cooling airflow demand to the air handler. Once received, the air handler will send the low stage cooling airflow demand to the ECM motor. The ECM motor then delivers the low stage cooling airflow. See the applicable Communicating air conditioner or heat pump installation manual for the airflow delivered during cooling or heat pump heating.

In continuous fan mode, the thermostat provides the airflow demand. Depending on which thermostat has been installed three or four continuous fan speeds may be available. If the thermostat provides three speeds (low, medium, high) they correspond to 25%, 50% and 75%, respectively, of the air handlers' maximum airflow capability. If the thermostat provides four continuous fan speeds then a 100% airflow option is added. During continuous fan operation, the thermostat sends a fan request along with the continuous fan demand to the air handler. The air handler, in turn, sends the demand to the ECM motor. The ECM motor delivers the requested continuous fan airflow.

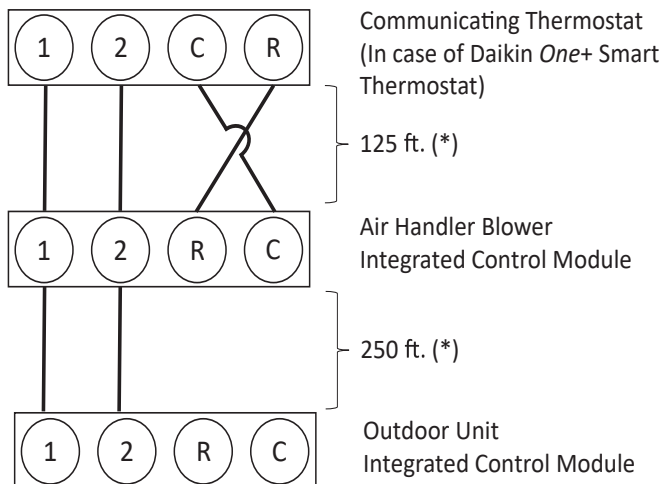
System	System Operating Mode	Airflow Demand Source
Air Conditioner + Air Handler	Cooling	Air Conditioner
	Heating	Air Handler
	Continuous Fan	Thermostat
Heat Pump + Air Handler	Cooling	Heat Pump
	Heat Pump Heating Only	Heat Pump
	HP + Electric Heat Strips	> of Heat Pump or Air Handler Demand
	Electric Heat Strips Only	Air Handler
	Continuous Fan	Thermostat

16.3 CONTROL WIRING

NOTE: Refer to section Electrical Connections for 208/230 volt line connections to the air handler.

NOTE: A plug connector is provided with the control to make thermostat wire connections. Wire nuts are recommended to ensure one wire is used for each terminal. Failure to do so may result in intermittent operation.

Typical 18 AWG thermostat wire may be used to wire the system components. One hundred and fifty (150) feet is the maximum length of wire recommended between indoor unit and outdoor unit, or between indoor unit and thermostat. Only the data lines 1 and 2 are required between the indoor and outdoor units. A 40VA, 208/230 VAC to 24 VAC transformer in the outdoor unit to provide 24 VAC power to the outdoor unit's electronic control.



(*) Allowable Maximum Length

ATTENTION INSTALLER - IMPORTANT NOTICE

PLEASE READ CAREFULLY BEFORE INSTALLING THIS UNIT.

- POWER LINE TERMINAL #C FROM INDOOR UNIT MUST CONNECT TO TERMINAL #C ON THERMOSTAT AND POWER LINE TERMINAL #R FROM INDOOR UNIT MUST CONNECT TO TERMINAL #R ON THERMOSTAT. VERIFY WIRES ARE NOT REVERSED. (NOTE: THE ORDER OF THE TERMINALS OF THE INDOOR UNIT AND THE DAIKIN ONE+ THERMOSTAT MAY BE DIFFERENT.)
- DO NOT ATTACH ANY WIRES TO THE R&C TERMINALS ON THE AC/HP, AS THEY ARE NOT NEEDED FOR INVERTER UNIT.
- DATA LINE TERMINAL #1 FROM AC/HO MUST CONNECT TO TERMINAL #1 ON INDOOR UNIT AND THERMOSTAT AND DATA LINE TERMINAL #2 FROM AC/HP MUST CONNECT TO TERMINAL #2 ON INDOOR UNIT AND THERMOSTAT. VERIFY WIRES ARE NOT REVERSED.

16.4 FULLY COMMUNICATING DAIKIN SYSTEM ADVANCED FEATURES

The Communicating system permits access to additional system information, advanced set-up features, and advanced diagnostic/troubleshooting features. These advanced features are organized into a menu structure. If you are using a Daikin One+ Smart Thermostat, please visit website at <https://www.daikinone.com> for instructions.

16.5 DIAGNOSTICS

Accessing the air handler's diagnostics menu provides ready access to the last six faults detected by the air handler. Faults are stored most recent to least recent. Any consecutively repeated fault is stored a maximum of three times. Example: A clogged return air filter causes the air handler's motor to repeatedly enter a limiting condition. The control will only store this fault the first three consecutive times the fault occurs.

NOTE: It is highly recommended that the fault history be cleared after performing maintenance or servicing the air handler.

16.5.1 NETWORK TROUBLESHOOTING

The Communicating system is a fully communicating system, and thus, constitutes a network. Occasionally the need to troubleshoot the network may arise. The integrated air handler control has some on-board tools that may be used to troubleshoot the network. These tools are: red communications LED, green receive (Rx) LED, and learn button. Refer to the Communications Troubleshooting Chart at the end of this manual for error codes, possible causes and corrective actions.



- Red communications LED – Indicates the status of the network. The table below indicates the LED status and the corresponding potential problem.
- Green receive LED – Indicates network traffic. The table below indicates the LED status and the corresponding potential problem.
- Learn button – Used to reset the network. Depress the button for approximately 2 seconds to reset the network.

16.5.2 SYSTEM TROUBLESHOOTING

NOTE: Refer to the instructions accompanying the Communicating compatible outdoor AC/HP unit for troubleshooting information.

Refer to the Troubleshooting Chart at the end of this manual for a listing of possible air handler error codes, possible causes and corrective actions.

17 Start-Up Procedure

 WARNING
<p>HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.</p> 

- Prior to start-up, ensure that all electrical wires are properly sized and all connections are properly tightened.
- All panels must be in place and secured. For Air Tight application, gasket must be positioned at prescribed locations to achieve 1.4% leakage.
- Tubing must be leak free.
- Condensate line must be trapped and pitched to allow for drainage.
- Low voltage wiring is properly connected.
- Auxiliary drain is installed when necessary and pitched to allow for drainage.
- Unit is protected from vehicular or other physical damage.
- Return air is not obtained from, nor are there any return air duct joints that are unsealed in, areas where there may be objectionable odors, flammable vapors or products of combustion such as carbon monoxide (CO), which may cause serious personal injury or death.

17.1 THERMAL EXPANSION VALVE SYSTEM ADJUSTMENT

In addition to conventional charging procedures, the following requirements shall be followed:

1. Ensure that contamination of different refrigerant does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
2. R-32 Refrigerant Cylinders shall be kept in an appropriate position.
3. Ensure that the refrigeration system is grounded prior to charging the system with refrigerant.
4. Label the system when charging is complete (if not already).
5. Extreme care shall be taken not to overfill the refrigerating system.

The following information for the indoor unit should be verified before attempting to charge system or adjust TXV if necessary.


1. Total static pressure is .5" WC or less.
2. Airflow is correct for installed unit
3. Airflow tables are in the installation manual and Specification Sheet for Indoor Unit.
4. Complete airflow tables and charging information as in Service Manual.
5. The outdoor temperature must be 60°F or higher.
6. Set the room thermostat to COOL, fan switch to AUTO
7. Set the temperature control well below room temperature.

Superheat adjustments should not be made until indoor ambient conditions have stabilized. This could take up to **24 hours** depending on indoor temperature and humidity. Before checking superheat run the unit in cooling for 10 minutes or until refrigerant pressures stabilize. Use the following guidelines and methods to check unit operation and ensure that the refrigerant charge is within limits.

NOTE: Charge two stage units on low stage.

1. Purge gauge lines. Connect service gauge manifold to base-valve service ports. The CFM blinks once for each 100 CFM of air flow.
2. Temporarily install a thermometer on the liquid line at the liquid line service valve and 4-6" from the compressor on the suction line. Ensure the thermometer makes adequate contact and is insulated for best possible readings. Use liquid line temperature to determine subcooling and vapor temperature to determine superheat.
3. If subcooling and super heat are low, adjust TXV superheat, then check subcooling as specified in Outdoor Installation and Instruction manual.
 - a. If subcooling is low and superheat is high, add charge to raise subcooling to 8°F +/- 1°F, then check superheat.
 - b. If subcooling and superheat are high, adjust TXV superheat, then check subcooling as specified in Outdoor Installation and Instruction manual.

For optimum system performance subcool and superheat should be matched as specified in Outdoor Installation and Instruction manual. Outdoor should be matched with approved AHRI combination, other approved system shall have subcooling set to 8°F +/- 1°F and superheat set to 12°F +/- 1°F,

 CAUTION
<p>EXCESSIVE TORQUE CAN CAUSE THE TXV RETAINING RING TO WEAKEN & CREATE A LEAK. THIS WILL MAKE IT DIFFICULT TO RE-INSTALL. THE PROPER TORQUE SETTINGS SHOULD BE CONFIGURED AS BELOW WHEN ADJUSTING: OILED EQUALIZER SHOULD BE SET TO 10-12 FT/LBS. OUTLET AND INLET CHAT FITTING SHOULD BE SET TO 15-20FT/LBS.</p>

Superheat Adjustments (Only if necessary)

1. Attach a pipe clamp thermometer near the suction line service valve at the outdoor unit.
 - a. Ensure the thermometer makes adequate contact for the best possible readings.
2. Adjust Superheat by turning the TXV valve stem clockwise to **increase** and **counterclockwise** to **decrease**. Adjustments should be made opening or closing the valve by no more than ¼ turn at a time. Allow the system to stabilize 15 to 20 minutes before making additional adjustments if necessary.
3. After adjustments are complete replace cap on adjustment stem and tighten ½ turn.
4. Remove gauges and check the Schrader ports for leaks and tighten valve cores if necessary. Install caps finger tight.

NOTE: In situations where the TXV must be removed and replaced or re-installed into the system, the TXV should be hand tightened first and then apply a half turn to fully set the TXV. No more than 20 ft-lb torque should be applied to the joints of the TXV.

SATURATED SUCTION PRESSURE TEMPERATURE CHART	
SUCTION PRESSURE	SATURATED SUCTION
PSIG	R-32
50	1
52	3
54	4
56	6
58	7
60	8
62	10
64	11
66	13
68	14
70	15
72	16
74	17
76	19
78	20
80	21
85	24
90	26
95	29
100	31
110	36
120	41
130	45
140	49
150	53
160	56
170	60

TABLE 12

SUBCOOL FORMULA = SAT. LIQUID LINE TEMP. - LIQUID LINE TEMP.

SUPERHEAT FORMULA = SUCT. LINE TEMP. - SAT. SUCT. TEMP.

SATURATED LIQUID PRESSURE TEMPERATURE CHART	
LIQUID PRESSURE	SATURATED LIQUID TEMPERATURE °F
PSIG	R-32
200	70
210	73
220	76
225	78
235	80
245	83
255	85
265	88
275	90
285	92
295	95
305	97
325	101
355	108
375	112
405	118
415	119
425	121
435	123
445	125
475	130
500	134
525	138
550	142
575	145
600	149
625	152

TABLE 13

18 Regular Maintenance

18.1 CIRCULATING AIR FILTERS

Circulating Air filters should be maintained on a regular basis by the user. Filter should be cleaned or replaced regularly, typically once per month. A certified service technician must perform all other services.

IMPORTANT NOTE: If thumb screws are used to access the filter, ensure the washer installed on the screw behind the access panel remains in place after re-installation.

18.2 REFRIGERATION DETECTION SYSTEM (RDS)

Function: Refrigerant Detection System (RDS) is installed in this equipment to detect any R32 leakage from the coil and take action to mitigate any risk of ignition/ fire.

Operation: When refrigerant is detected, the RDS shall send signals for the unit to perform these actions:


1. Turn off the heating and cooling operation
2. Turn on the blower for air circulation

Servicing: Before servicing identify the Mode of operation of the system by reading the LED flashing pattern on the PCB which can be seen through the round glass view on top access panel and matching the LED flashing pattern with mode of operation in A2L PCB fault code label which is attached on the front side of the blower access panel (Figure 18). After identifying the mode of operation take recommended actions as specified in Table 14.

Instruction to replace A2L PCB: Take off the blower access panel, disconnect the PCB harness and R32 sensor wire connected to the PCB, detach the PCB from the 4 plastic standoffs, install new PCB on 4 plastic standoffs which is installed on metal bracket, re-connect the PCB harness and R32 sensor wire to the new PCB per wiring instruction as attached to the equipment, reassemble the blower access panel to the unit.

Instruction to replace R32 sensor: Take off the blower access panel and coil access panel, take off the drain port gasket on the drain pan in front of the sensor bracket, disconnect the R32 sensor wire from the A2L PCB, take off sensor bracket assembly from the drain pan, remove plastic push pins and R32 sensor off the sensor bracket, install new R32 sensor and plastic push pins to sensor bracket, re-install A2L sensor bracket assembly to the drain port correctly as shown in the figures 10, 11, 12 and 13. The "FRONT" print on sensor bracket should be facing away from the equipment, place gaskets back to the drain ports correctly. The "FRONT" print on the gaskets should be in the front facing away from the equipment, reassemble the blower access panel and coil access panel to the unit.

IMPORTANT: The R32 Sensor shall only be replaced with sensors specified by the appliance manufacturer.

LEAK DETECTION SYSTEM INSTALLED. UNIT MUST BE POWERED EXCEPT FOR SERVICE.	
RED LED'S STATUS (REFER I/O FOR RECOMMENDED ACTION)	
MODE	LED FLASHING PATTERN
NORMAL OPERATION	SLOW LED FLASHING PATTERN (2 SECONDS ON 2 SECONDS OFF)
R-32 LEAK ALARM *	FAST LED FLASHING PATTERN
DELAY MODE	LED WILL BE ON CONTINUOUSLY
SYSTEM VERIFICATION MODE	SAME AS R32 LEAK ALARM MODE
CONTROL BOARD INTERNAL FAULT	LED WILL FLASH 2 TIMES AND THEN BE OFF FOR 5 SECONDS
R32 SENSOR COMMUNICATION FAULT	LED WILL FLASH 3 TIMES AND THEN BE OFF FOR 5 SECONDS
R32 SENSOR FAULT	LED WILL FLASH 4 TIMES AND THEN BE OFF FOR 5 SECONDS
<p>* IF R-32 LEAK ALARM IS OBSERVED, DO NOT OPEN THE UNIT OR TURN IT OFF.</p>	
 0140A01138-B	

A2L PCB FAULT CODE
FIGURE 18

RED LED'S STATUS					
	MODE	Definition	LED Flashing Pattern	Recommended actions	Notes:
1	Normal Operation	No faults to report	Slow LED flashing pattern (2 seconds on and 2 seconds off)	No action	
2	R32 Leak Alarm	R32 leak is currently being detected	Fast LED Flashing Pattern	The controls and sensor are working properly. Identify where the leak is coming from and address the leak.	
3	Delay Mode	After R32 leak or Alarm has been cleared, the unit will remain in alarm mode for 5 minutes before returning to normal operation	LED will be on continuously	Check HVAC performance (Cooling and Heating Modes). Check system pressures and lines for any leaks. Re-Check HVAC performance after addressing any issues.	After any alarm or fault, it is required to remain in R32 mitigation mode for 5 minutes.
4	System Verification Mode	Manual test run by contractor to simulate R32 Leak Alarm (test will last for 5 minutes max)	Fast LED Flashing Pattern	No actions needed	To Enter system verification test mode, press the button on the control 2 times within 5 seconds. The control will enter a simulated R32 Leak Alarm state and remain in that mode for 5 minutes. After 5 minutes, the control will return to Normal Operation automatically. If the contractor wants to end the test early, they need to press the button one time.
5	Control Board Internal Fault	Control board has detected an issue with the R32 detection system	LED will flash 2 times and then be off for 5 seconds before repeating the pattern	1) Unplug and plug the R32 sensor back in. Cycle power to the system. 2) If control is in Normal Operation or Delay mode, there is no more issue. If not, continue with diagnostics. 3) Unplug R32 sensor and leave unplugged. Cycle power to the system 4) If control still displays "Control Board Internal Fault" (2 flash pattern) replace the control. If control now displays "R32 Sensor Communication Fault" (3 flash pattern) replace the sensor	These steps will determine if the error is on the board or external to the board.
6	R32 Sensor Communication Fault	Control board does not have communications with R32 sensor	LED will flash 3 times and then be off for 5 seconds before repeating the pattern	1) Unplug and plug the R32 sensor back in. Cycle power to the system. 2) If control is in Normal Operation or Delay mode, there is no more issue. If not, continue with diagnostics. 3) If control still displays "R32 Sensor Communication Fault" (3 flash pattern), Relace both the sensor and the PCB	If the control cannot talk to the sensor there could be a problem with the sensor, a problem with the sensor harness or a problem internal to the control. The field will not be able to measure anything to reliably fix this error assuming the connector is properly secured to the control. Replacing both is the only option.
7	R32 Sensor Fault	R32 Sensor has reported an internal issue	LED will blink 4 times and then be off for 5 seconds before repeating the pattern	1) Unplug and plug the R32 sensor back in. Cycle power to the system. 2) If control is in Normal Operation or Delay mode, there is no more issue. If not, continue with diagnostics. 3) If control still displays "R32 Sensor Fault" (4 flash pattern), Relace both the sensor.	This means communications to the sensor are perfectly fine. The sensor itself is reporting an internal fault.

RECOMMENDED ACTION FOR A2L PCB LED FLASHING CODES

FIGURE 14

19 Troubleshooting Chart

COMMUNICATIONS TROUBLESHOOTING CHART

LED	LED Status	Indication	Possible Causes	Corrective Action(s)	Notes & Cautions
Red Communications LED	Off	<ul style="list-style-type: none"> • Normal condition 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
	1 Flash	<ul style="list-style-type: none"> • Communications Failure 	<ul style="list-style-type: none"> • Communications Failure 	<ul style="list-style-type: none"> • Depress Learn Button • Verify that bus BIAS and TERM dipswitches are in the ON position. 	<ul style="list-style-type: none"> • Depress once quickly for a power-up reset • Depress and hold for 2 seconds for an out-of-box reset
	2 Flashes	<ul style="list-style-type: none"> • Out-of-box reset 	<ul style="list-style-type: none"> • Control power up • Learn button depressed 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Green Receive LED	Off	<ul style="list-style-type: none"> • No power • Communications error 	<ul style="list-style-type: none"> • No power to air handler • Open fuse • Communications error 	<ul style="list-style-type: none"> • Check fuses and circuit breakers; replace/reset • Replace blown fuse • Check for shorts in low voltage wiring in air handler/system • Reset network by depressing learn button • Check data 1/ data 2 voltages 	<ul style="list-style-type: none"> • Turn power OFF prior to repair
	1 Steady Flash	<ul style="list-style-type: none"> • No network found 	<ul style="list-style-type: none"> • Broken/ disconnected data wire(s) • Air handler is installed as a non-communicating/ traditional system 	<ul style="list-style-type: none"> • Check communications wiring (data 1/ data 2 wires) • Check wire connections at terminal block • Verify air handler installation type (non-communicating/ traditional or communicating) • Check data 1/ data 2 voltages 	<ul style="list-style-type: none"> • Turn power OFF prior to repair • Verify wires at terminal blocks are securely twisted together prior to inserting into terminal block • Verify data 1 and data voltages as described above
	Rapid Flashing	<ul style="list-style-type: none"> • Normal network traffic 	<ul style="list-style-type: none"> • Control is "talking" on network as expected 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
	On Solid	<ul style="list-style-type: none"> • Data 1/ Data 2 miss-wire 	<ul style="list-style-type: none"> • Data 1 and data 2 wires reversed at air handler, thermostat, or ComfortNet™ compatible outdoor AC/HP • Short between data 1 and data 2 wires • Short between data 1 or data 2 wires and R (24VAC) or C (24VAC common) 	<ul style="list-style-type: none"> • Check communications wiring (data 1/ data 2 wires) • Check wire connections at terminal block • Check data 1/ data 2 voltages 	<ul style="list-style-type: none"> • Turn power OFF prior to repair • Verify wires at terminal blocks are securely twisted together prior to inserting into terminal block • Verify data 1 and data voltages as described above

19 Troubleshooting Chart

Air Handler Advanced Features Menu

DIAGNOSTICS		
Submenu Item	Indication/User Modifiable Options	Comments
Fault 1 (FAULT #1)	Most recent air handler fault	For display only
Fault 2 (FAULT #2)	Next most recent air handler fault	For display only
Fault 3 (FAULT #3)	Next most recent air handler fault	For display only
Fault 4 (FAULT #4)	Next most recent air handler fault	For display only
Fault 5 (FAULT #5)	Next most recent air handler fault	For display only
Fault 6 (FAULT #6)	Least recent air handler fault	For display only
Clear Fault History (CLEAR)	NO or YES	Selecting "YES" clears the fault history

NOTE: Consecutively repeated faults are shown a maximum of 3 times

IDENTIFICATION	
Submenu Item	Indication (for Display Only; not User Modifiable)
Model Number (MOD NUM)	Displays the air handler model number
Serial Number (SER NUM)	Displays the air handler serial number (Optional)
Software (SOFTWARE)	Displays the application software revision

SET-UP		
Submenu Item	User Modifiable Options	Comments
Heat Airflow Trim (HT TRM)	-10% to +10% in 2% increments, default is 0%	Trims the heating airflow by the selected amount.

STATUS	
Submenu Item	Indication (for Display Only; not User Modifiable)
Mode (MODE)	Displays the current air handler operating mode
CFM (CFM)	Displays the airflow for the current operating mode

19 Troubleshooting Chart

Symptoms of Abnormal Operation (Legacy & ComfortNet™ Thermostat)	7-Segment LED Codes Characters Will Alternate	Fault Description	ComfortNet™ Thermostat Only		Possible Causes	Corrective Actions	Notes & Cautions
			Message	Code			
<ul style="list-style-type: none"> LED display is ON continuously Electric heaters fail to energize on a call for W1 or Auxiliary/Emergency heat Integrated control module LED display provides the indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated ComfortNet™ thermostat scrolls "Check Air Handler" message 	<p>ON EC</p>	<ul style="list-style-type: none"> Normal operation Heater kit selected via large for heater kits specified in shared data set 	None	EC	<ul style="list-style-type: none"> Normal operation Heater kit selected via dipswitches is too large for heater kits in shared data set <p>your</p>	<ul style="list-style-type: none"> Verify electric heat dipswitch settings Verify the installed electric heater is valid for the air handler blower. Check Serial & Rating Plate or Specification Sheet applicable to your model* for allowable heater kit(s). Verify shared data set is correct for the specific model. Re-populate data using correct memory card if required. 	<ul style="list-style-type: none"> Normal operation Turn power OFF prior to repair. Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Turn power off before removing memory card.
<ul style="list-style-type: none"> Electric heat airflow is higher than expected on a call for W1 or Auxiliary/Emergency heat Integrated control module LED display provides the indicated error code. 	<p>EC</p>	<ul style="list-style-type: none"> Heater kit selected via dipswitches is too small for heater kits specified in shared data set 	HTR TOO SMALL	EC	<ul style="list-style-type: none"> Heater kit selected via dipswitches is too small for heater kits in shared data set 	<ul style="list-style-type: none"> Verify electric heat dipswitch settings Verify the installed electric heater is valid for the air handler blower. Check Serial & Rating Plate or Specification Sheet applicable to your model* for allowable heater kit(s). Verify shared data set is correct for the specific model. Re-populate data using correct memory card if required. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Turn power off before removing memory card.
<ul style="list-style-type: none"> Electric heat airflow is higher than expected on a call for W1 or Auxiliary/Emergency heat Integrated control module LED display provides the indicated error code. 	<p>EC</p>	<ul style="list-style-type: none"> Heater kit selected via dipswitches does not match heater kits specified in shared data set 	NO HTR MATCH	EC	<ul style="list-style-type: none"> Heater kit selected via dipswitches is doesn't match heater kits in shared data set 	<ul style="list-style-type: none"> Verify electric heat dipswitch settings Verify the installed electric heater is valid for the air handler blower. Check Serial & Rating Plate or Specification Sheet applicable to your model* for allowable heater kit(s). Verify shared data set is correct for the specific model. Re-populate data using correct memory card if required. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Turn power off before removing memory card.
<ul style="list-style-type: none"> Integrated control module LED display EF error code. ComfortNet™ thermostat "Call for Service" 	<p>EF</p>	<ul style="list-style-type: none"> Aux switch open 	Aux Alarm Fault	EF	<ul style="list-style-type: none"> High water level in the evaporation coil. 	<ul style="list-style-type: none"> Check overflow pan and service 	<ul style="list-style-type: none"> Turn power OFF prior to service.

19 Troubleshooting Chart

Symptoms of Abnormal Operation (Legacy & ComfortNet™ Thermostat)	7-Segment LED Codes Characters Will Alternate	Fault Description	ComfortNet™ Thermostat Only		Possible Causes	Corrective Actions	Notes & Cautions
			Message	Code			
<ul style="list-style-type: none"> Air handler blower fails to operate Integrated control module LED display provides no signal. ComfortNet™ thermostat "Call for Service" icon illuminated ComfortNet™ thermostat scrolls "Check Air Handler" message 	No Display	<ul style="list-style-type: none"> No 208/230 volt power to air handler blower or no 24 volt power to integrated control module Blown fuse or circuit breaker Integrated control module has an internal fault. 	INTERNAL FAULT	EE	<ul style="list-style-type: none"> Manual disconnect switch OFF or 24 volt wire improperly connected or loose Blown fuse or circuit breaker Integrated control module has an internal fault 	<ul style="list-style-type: none"> Assure 208/230 volt and 24 volt power to air handler blower and integrated control module. Check integrated control module fuse (3A). Replace if necessary. Check for possible shorts in 208/230 volt and 24 volt circuits. Repair as necessary. Replace integrated control module. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace integrated control module fuse with 3A automotive fuse. Replace integrated control module with correct replacement part Read precautions in "Electrostatic Discharge" section of manual.
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	d0	<ul style="list-style-type: none"> Data not yet on network. 	NO NET DATA	d0	<ul style="list-style-type: none"> Air handler blower does not contain any shared data. 	<ul style="list-style-type: none"> Populate shared data set using memory card. 	<ul style="list-style-type: none"> Turn power OFF prior to repair Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Error code will be cleared once data is loaded. Turn power off before removing memory card
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	d1	<ul style="list-style-type: none"> Invalid data on network. 	INVALID DATA	d1	<ul style="list-style-type: none"> Air handler blower does not contain an appropriate shared data set. 	<ul style="list-style-type: none"> Populate correct shared data set using memory card. 	<ul style="list-style-type: none"> Turn power OFF prior to repair Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Error code will be cleared once data is loaded.
<ul style="list-style-type: none"> Operation different than expected or no operation. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	d4	<ul style="list-style-type: none"> Invalid memory card data. 	INVALID MC DATA	d4	<ul style="list-style-type: none"> Shared data set on memory card has been rejected by integrated control module 	<ul style="list-style-type: none"> Verify shared data set is correct for the specific model. Re-populate data using correct memory card if required. 	<ul style="list-style-type: none"> Turn power OFF prior to repair Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Error code will be cleared once data is loaded. Turn power off before removing memory card

19 Troubleshooting Chart

Symptoms of Abnormal Operation (Legacy & ComfortNet™ Thermostat)	7-Segment LED Codes Characters Will Alternate	Fault Description	ComfortNet™ Thermostat Only		Possible Causes	Corrective Actions	Notes & Cautions
			Message	Code			
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b0	<ul style="list-style-type: none"> Circulator blower motor is not running when it should be running. 	MOTOR NOT RUN	b0	<ul style="list-style-type: none"> Loose wiring connection at circulator motor power leads or circulator motor power leads disconnected. Failed circulator blower motor. 	<ul style="list-style-type: none"> Tighten or correct wiring connection. Check circulator blower motor. Replace if necessary. 	<ul style="list-style-type: none"> Turn power OFF prior to repair Replace circulator motor with correct replacement part.
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b1	<ul style="list-style-type: none"> Integrated control module has lost communications with circulator blower motor. 	MOTOR COMM	b1	<ul style="list-style-type: none"> Loose wiring connection at circulator motor control leads. Failed circulator blower motor. Failed integrated control module. 	<ul style="list-style-type: none"> Tighten or correct wiring connection. Check circulator blower motor. Replace if necessary. Check integrated control module. Replace if necessary. 	<ul style="list-style-type: none"> Turn power OFF prior to repair Replace circulator motor with correct replacement part. Replace integrated control module with correct replacement part.
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b2	<ul style="list-style-type: none"> Circulator blower motor horse power in shared data set does not match circulator blower motor horse power. 	MOTOR MISMATCH	b2	<ul style="list-style-type: none"> Incorrect circulator blower motor in air handler blower. Incorrect shared data set in integrated control module. 	<ul style="list-style-type: none"> Verify circulator blower motor horse power is the same specified for the specific air handler blower model. Replace if necessary. Verify shared data set is correct for the specific model. Re-populate data using correct memory card if required. 	<ul style="list-style-type: none"> Turn power OFF prior to repair Replace motor with correct replacement part. Use memory card for the specific model Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded. Error code will be cleared once shared data and motor horse power match. Turn power off before removing memory card
<ul style="list-style-type: none"> Air handler blower operates at reduced performance. Airflow delivered is less than expected. Integrated control module LED display provides b3 error code. 	b3	<ul style="list-style-type: none"> Circulator blower motor is operating in a power, temperature, or speed limiting condition. 	MOTOR LIMITS	b3	<ul style="list-style-type: none"> Blocked filters. Restrictive ductwork. Undersized ductwork. High ambient temperatures. 	<ul style="list-style-type: none"> Check filters for blockage. Clean filters or remove obstruction. Check ductwork for blockage. Remove obstruction. Verify all registers are fully open. Verify ductwork is appropriately sized for system. Resize/replace ductwork if necessary. See "Installation Instructions" for installation requirements. 	<ul style="list-style-type: none"> Turn power OFF prior to repair.
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b4	<ul style="list-style-type: none"> Circulator blower motor senses a loss rotor control. Circulator blower motor senses high current. 	MOTOR TRIPS	b4	<ul style="list-style-type: none"> Abnormal motor loading, sudden change in speed or torque, sudden blockage of air handler blower/coil air inlet or outlet. High loading conditions, blocked filters, very restrictive ductwork, blockage of air handler blower/coil air inlet or outlet. 	<ul style="list-style-type: none"> Check filters, filter grills/registers, duct system, and air handler blower/coil air inlet/outlet for blockages. 	<ul style="list-style-type: none"> Turn power OFF prior to repair.

19 Troubleshooting Chart

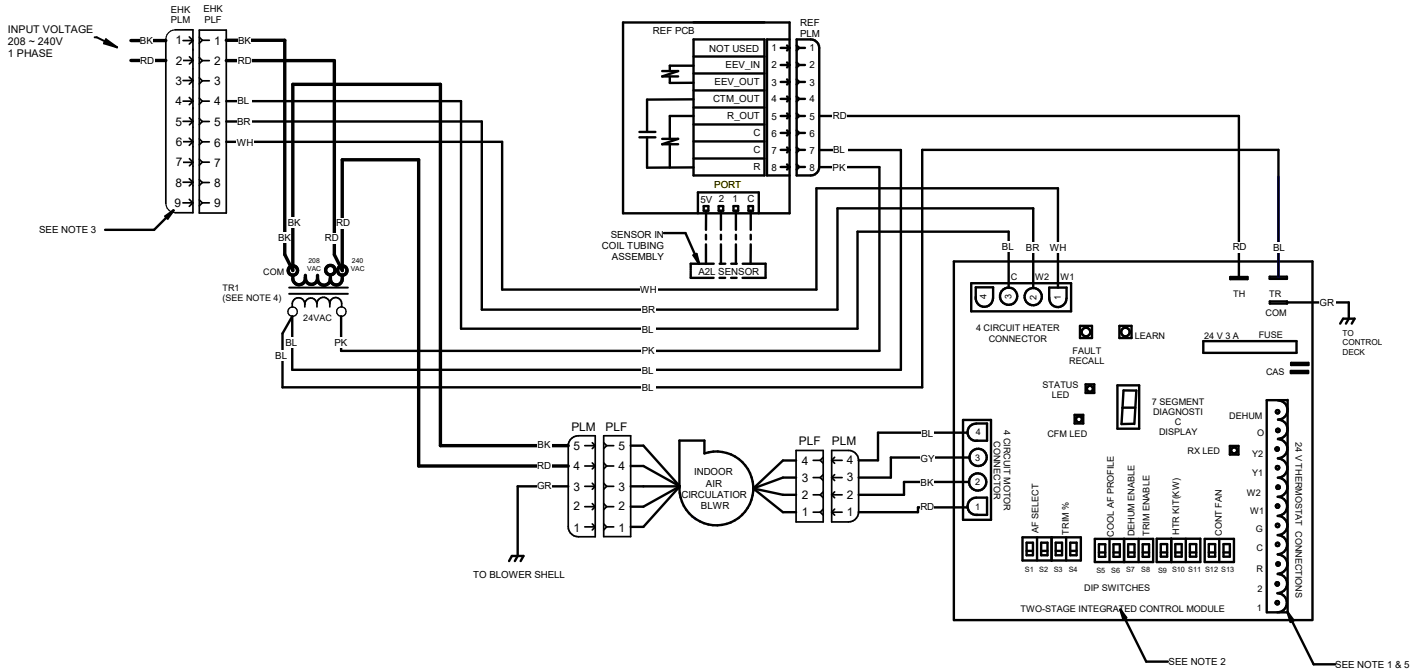
Symptoms of Abnormal Operation (Legacy & ComfortNet™ Thermostat)	7-Segment LED Codes Characters Will Alternate	Fault Description	ComfortNet™ Thermostat Only		Possible Causes	Corrective Actions	Notes & Cautions
			Message	Code			
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b5	<ul style="list-style-type: none"> Circulator blower motor fails to start 10 consecutive times. 	MTR LCKD ROTOR	b5	<ul style="list-style-type: none"> Obstruction in circulator blower housing. Seized circulator blower motor bearings. Failed circulator blower motor. 	<ul style="list-style-type: none"> Check circulator blower for obstructions. Remove and repair/replace wheel/motor if necessary. Check circulator blower motor shaft rotation and motor. Replace motor if necessary. 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace motor with correct replacement part. Replace wheel with correct replacement part.
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b6	<ul style="list-style-type: none"> Circulator blower motor shuts down for over or under voltage condition. Circulator blower motor shuts down due to over temperature condition on power module. 	MOTOR VOLTS	b6	<ul style="list-style-type: none"> High AC line voltage to air handler blower. Low AC line voltage to air handler blower. High ambient temperatures. 	<ul style="list-style-type: none"> Check power to air handler blower. Verify line voltage to blower is within the range specified on the air handler blower rating plate. See "Installation Instructions" for installation requirements. 	<ul style="list-style-type: none"> Turn power OFF prior to repair.
<ul style="list-style-type: none"> Air handler blower fails to operate. Integrated control module LED display provides indicated error code. ComfortNet™ thermostat "Call for Service" icon illuminated. ComfortNet™ thermostat scrolls "Check Air Handler" message. 	b7	<ul style="list-style-type: none"> Circulator blower motor does not have enough information to operate properly. Motor fails to start 40 consecutive times. 	MOTOR PARAMS	b7	<ul style="list-style-type: none"> Error with integrated control module. Motor has a locked rotor condition. 	<ul style="list-style-type: none"> Check integrated control module. Verify control is populated with correct shared data set. See data errors above for details. Check for locked rotor condition (see error code above for details). 	<ul style="list-style-type: none"> Turn power OFF prior to repair. Replace with correct replacement part(s). Use memory card for the specific model. Insert memory card BEFORE turning power ON. Memory card may be removed after data is loaded Turn power off before removing memory card.
<ul style="list-style-type: none"> Air handler blower operates at reduced performance or operates on low stage when high stage is expected. Integrated control module LED display provides indicated error code. 	b9	<ul style="list-style-type: none"> Airflow is lower than demanded. 	LOW ID AIRFLOW	b9	<ul style="list-style-type: none"> Blocked filters. Restrictive ductwork. Undersized ductwork. 	<ul style="list-style-type: none"> Check filters for blockage. Clean filters or remove obstruction. Check ductwork for blockage. Remove obstruction. Verify all registers are fully open. Verify ductwork is appropriately sized for system. Resize/replace ductwork if necessary. 	<ul style="list-style-type: none"> Turn power OFF prior to repair.

20 Diagnostic Codes

7 SEGMENT LED (characters will alternate)	DESCRIPTION OF CONDITION
(no display)	INTERNAL CONTROL FAULT / NO POWER
On	STANDBY, WAITING FOR INPUTS
Ed	HEATER KIT DIP SWITCHES NOT SET PROPERLY
Eb	NO HTR KIT INSTALLED - SYSTEM CALLING FOR AUXILIARY HEAT
E5	FUSE OPEN
EF	AUXILIARY SWITCH OPEN
d0	DATA NOT ON NETWORK
d1	INVALID DATA ON NETWORK
d4	INVALID MEMORY CARD DATA
b0	BLOWER MOTOR NOT RUNNING
b1	BLOWER MOTOR COMMUNICATION ERROR
b2	BLOWER MOTOR HP MISMATCH
b3	BLOWER MOTOR OPERATING IN POWER, TEMP., OR SPEED LIMIT
b4	BLOWER MOTOR CURRENT TRIP OR LOST ROTOR
b5	BLOWER MOTOR ROTOR LOCKED
b6	OVER/UNDER VOLTAGE TRIP OR OVER TEMPERATURE TRIP
b7	INCOMPLETE PARAMETER SENT TO MOTOR
b9	LOW INDOOR AIRFLOW
C1	LOW STAGE COOL - LEGACY MODE ONLY
C2	HIGH STAGE COOL - LEGACY MODE ONLY
P1	LOW STAGE HEAT PUMP HEAT - LEGACY MODE ONLY
P2	HIGH STAGE HEAT PUMP HEAT - LEGACY MODE ONLY
h1	EMERGENCY HEAT LOW - COMMUNICATING MODE ONLY
h2	EMERGENCY HEAT HIGH - COMMUNICATING MODE ONLY
FC	FAN COOL - COMMUNICATING MODE ONLY
FH	FAN HEAT - COMMUNICATING MODE ONLY
F	FAN ONLY
H1	ELECTRIC HEAT LOW
H2	ELECTRIC HEAT HIGH
dF	DEFROST - COMMUNICATING MODE ONLY (note: defrost is displayed as H1 in a legacy setup)
<p>GREEN CFM LED - EACH FLASH REPRESENTS 100CFM (USE FOR AIRFLOW APPROXIMATION ONLY) - EXAMPLE: 8 FLASHES = 800CFM</p> <p style="text-align: right;">0140A00079-A</p>	

21 Wiring Diagram

WARNING HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT.
MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY
CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



- NOTES**
- REPLACEMENT WIRE MUST BE SAME SIZE AND TYPE OF INSULATION AS ORIGINAL (AT LEAST 105° C). USE COPPER CONDUCTORS ONLY. USE N.E.C. CLASS 2 WIRE FOR ALL LOW VOLTAGE FIELD CONNECTIONS.
 - FOR SPEED CHANGE, SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS ON ADJUSTING DIP SWITCHES.
 - DISCARD CONNECTOR EHK PLM WHEN INSTALLING OPTIONAL HEAT KIT.
 - RED WIRE CONNECTED TO 240V TAP AT THE FACTORY AND BLACK WIRE TO COM TERMINAL FOR 208V SUPPLY POWER. MOVE RED WIRE FROM 240 TAP TO THE 208V TAP.
 - LOW VOLTAGE TRANSFORMER RATED 24VAC OUTPUT 75VA @ 3.125 AMP.

COMPONENT LEGEND

CB	CIRCUIT BREAKER
CR	CONTROL RELAY
EHK	ELECTRIC HEATER KIT
EM	EVAPORATOR MOTOR
GND	GROUND
PCB	CONTROL BOARD
PLM	MALE PLUG
REF	REFRIGERANT TERMINAL BOARD
TR	TRANSFORMER

WIRE CODE

BK	BLACK
BL	BLUE
BR	BROWN
GR	GREEN
PU	PURPLE
RD	RED
WH	WHITE
YL	YELLOW
PK	PINK

FACTORY WIRING

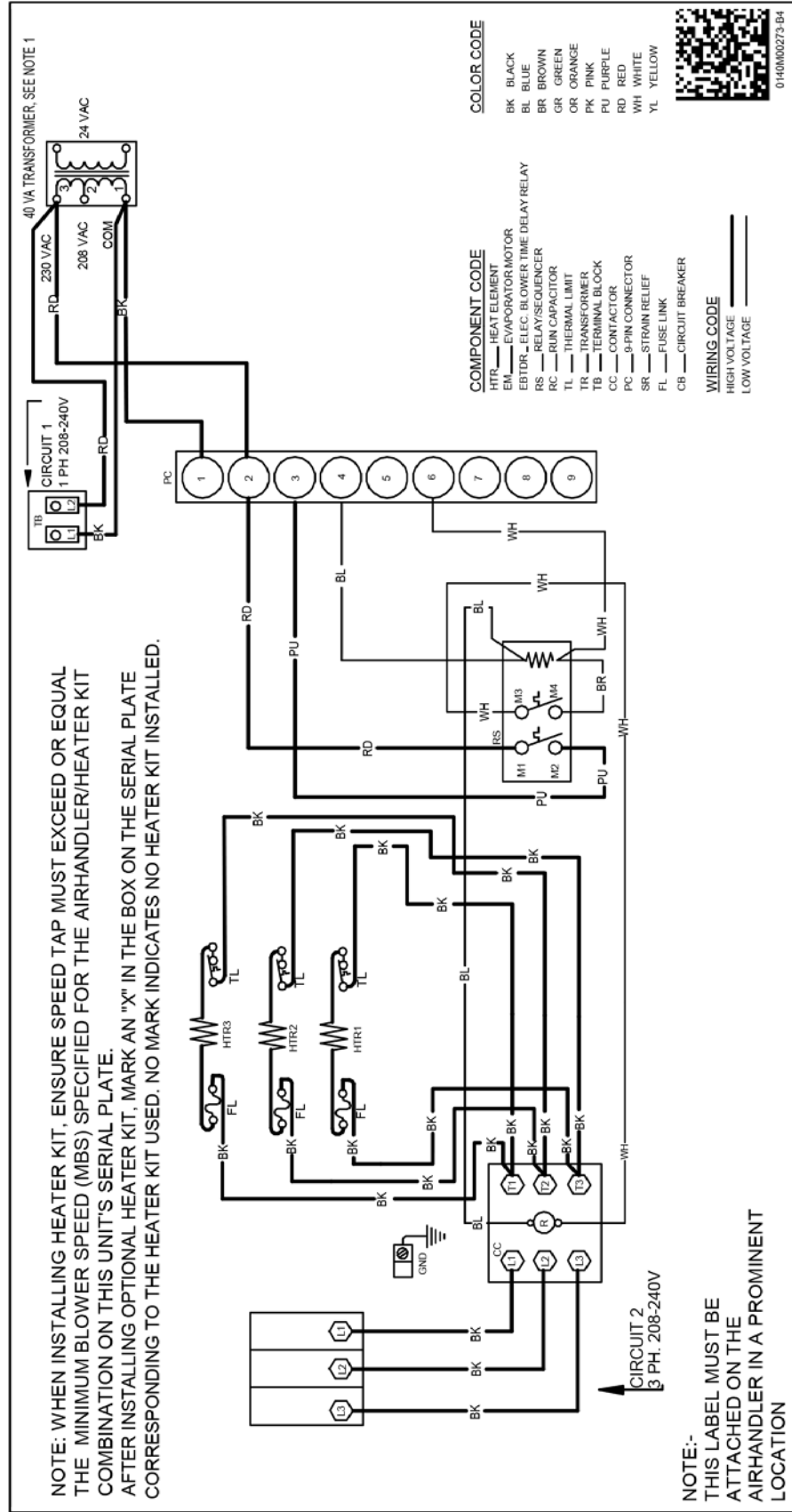
	HIGH VOLTAGE
	OPTIONAL HIGH VOLTAGE
	LOW VOLTAGE
	OPTIONAL LOW VOLTAGE
	CHASSIS GROUND
	READ THE INSTRUCTIONS
	CLASS III



Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

WARNING

HIGH VOLTAGE!
 DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT.
 MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY
 CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

AIR HANDLER

AIR HANDLER HOMEOWNER'S ROUTINE MAINTENANCE RECOMMENDATIONS

Replace or Clean Filter

IMPORTANT NOTE: Never operate unit without a filter installed as dust and lint will build up on internal parts resulting in loss of efficiency, equipment damage and possible fire.

An indoor air filter must be used with your comfort system. A properly maintained filter will keep the indoor coil of your comfort system clean. A dirty coil could cause poor operation and/or severe equipment damage.

Your air filter or filters could be located in your furnace, in a blower unit, or in "filter grilles" in your ceiling or walls. The installer of your air conditioner or heat pump can tell you where your filter(s) are, and how to clean or replace them.

Check your filter(s) at least once a month. When they are dirty, replace or clean as required. Disposable type filters should be replaced. Reusable type filters may be cleaned.

You may want to ask your dealer about high efficiency filters. High efficiency filters are available in both electronic and non-electronic types. These filters can do a better job of catching small airborne particles.

Ultraviolet Coil and Air Purifier

Clean Comfort brand UV coil purifiers also can be purchased from distributor. Maximum UV lamp diameter to be used is 1.375" to reduce the possibility of air leak. The power source must be installed external of the unit. Ensure that the wiring is routed through the access panel knockout with the grommet included. A magnetic door switch must be installed to avoid an accidental ultraviolet exposure during service.

Refer to UV coil purifiers product specification installation manual for additional details. See table 15 for models part numbers

UV-C part Numbers	
Models	Lamp
UC18S15-24	UCP-16013
UC18S15-24B	UCP-16012

TABLE 15

UVC light conversion kit is required to install with the UVC light. For installation refer to the UVC drain pan kit installation manual IO -7023 for additional details for model and kit assignment. Refer table 15 & 16.

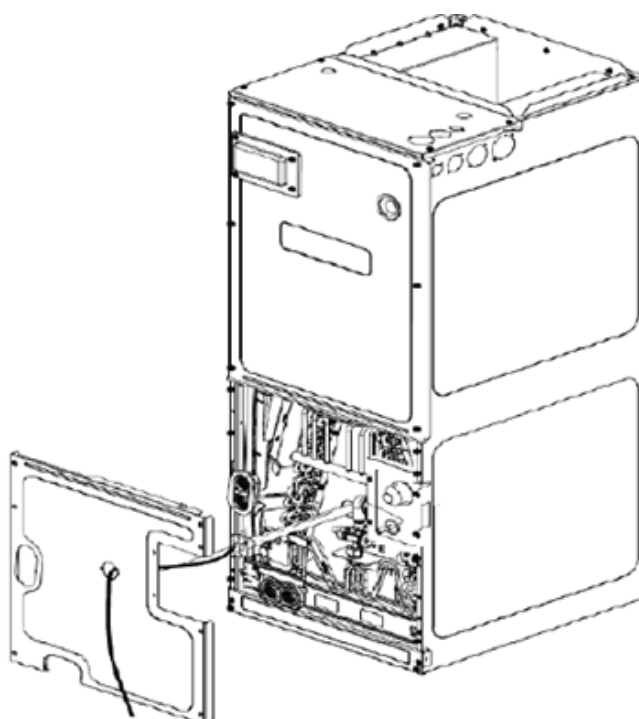




FIGURE 19

Model Size	Kit #	Parts				
DMVT24B	UVPK01	DRAIN PAN MAIN	DRAIN PAN SIDE	NA	CONDEN SATE COLLECT OR, FRONT	CONDEN SATE COLLECT OR, BACK
DMVT30B	UVPK02			DRAIN PAN EXT		
DMVT36C	UVPK03					
DMVT42C	UVPK04					
DMVT48C	UVPK05					
DMVT60D	UVPK07					

TABLE 16

Motors

Indoor and outdoor fan motors are permanently lubricated and do not require additional oiling.

 WARNING	
HIGH VOLTAGE DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.	


ALUMINUM INDOOR COIL CLEANING (QUALIFIED SERVICER ONLY)

A2L sensor must be removed from the unit before applying coil cleaners to avoid damage and contamination. Re-assemble the A2L sensor back to the unit after done with coil cleaning process.

This unit is equipped with an aluminum tube evaporator coil. The safest way to clean the evaporator coil is to simply flush the coil with water. This cleaning practice remains as the recommended cleaning method for both copper tube and aluminum tube residential evaporator coils.

It has been determined that many coil cleaners and drain pan tablets contain corrosive chemicals that can be harmful to aluminum tube and fin evaporator coils. Even a one-time application of these corrosive chemicals can cause premature aluminum evaporator coil failure. Any cleaners that contain corrosive chemicals including, but not limited to, chlorine and hydroxides, should not be used. An alternate cleaning method is to use one of the products listed in TP-109* to clean the coils. The cleaners listed are the only agents deemed safe and approved for use to clean round tube aluminum coils. TP-109 is also available on the web site in Partner Link > Service Toolkit.

NOTE: Ensure coils are rinsed well after use of any chemical cleaners.

 CAUTION
TO AVOID THE RISK OF EQUIPMENT DAMAGE OR FIRE, INSTALL THE SAME AMPERAGE BREAKER OR FUSE AS YOU ARE REPLACING. IF THE CIRCUIT BREAKER OR FUSE SHOULD OPEN AGAIN WITHIN THIRTY DAYS, CONTACT A QUALIFIED SERVICER TO CORRECT THE PROBLEM. IF YOU REPEATEDLY RESET THE BREAKER OR REPLACE THE FUSE WITHOUT HAVING THE PROBLEM CORRECTED, YOU RUN THE RISK OF SEVERE EQUIPMENT DAMAGE.

BEFORE YOU CALL YOUR SERVICER

- Check the thermostat to confirm that it is properly set.
- Wait 15 minutes. Some devices in the outdoor unit or in programmable thermostats will prevent compressor operation for a while, and then reset automatically. Also, some power companies will install devices which shut off air conditioners for several minutes on hot days. If you wait several minutes, the unit may begin operation on its own.
- Check the electrical panel for tripped circuit breakers or failed fuses. Reset the circuit breakers or replace fuses as necessary.
- Check the disconnect switch near the indoor furnace or blower to confirm that it is closed.
- Check for obstructions on the outdoor unit. Confirm that it has not been covered on the sides or the top. Remove any obstruction that can be safely removed. If the unit is covered with dirt or debris, call a qualified servicer to clean it.
- Check for blockage of the indoor air inlets and outlets. Confirm that they are open and have not been blocked by objects (rugs, curtains or furniture).
- Check the filter. If it is dirty, clean or replace it.
- Listen for any unusual noise(s), other than normal operating noise, that might be coming from the outdoor unit. If you hear unusual noise(s) coming from the unit, call a qualified servicer.

HOMEOWNER SUPPORT
DAIKIN COMFORT TECHNOLOGIES
MANUFACTURING, L.P.
19001 KERMIER ROAD
WALLER, TEXAS 77484
(855) 770-5678

22 Start-Up Checklist

Air Handler / Coil			
	Model Number	_____	
	Serial Number	_____	
ELECTRICAL			
Line Voltage (Measure L1 and L2 Voltage)	L1 - L2	_____	
Secondary Voltage (Measure Transformer Output Voltage)	R - C	_____	
Blower Amps		_____	
Heat Strip 1 - Amps		_____	
Heat Strip 2 - Amps		_____	
BLOWER EXTERNAL STATIC PRESSURE			
Return Air Static Pressure		_____	IN. W.C.
Supply Air Static Pressure		_____	IN. W.C.
Total External Static Pressure (Ignoring +/- from the reading above, add total here)		_____	IN. W.C.
TEMPERATURES			
Return Air Temperature (Dry bulb / Wet bulb)		_____ DB °F	_____ WB °F
Cooling Supply Air Temperature (Dry bulb / Wet bulb)		_____ DB °F	_____ WB °F
Heating Supply Air Temperature		_____ DB °F	
Temperature Rise		_____ DB °F	
Delta T (Difference between Supply and Return Temperatures)		_____ DB °F	
Air Handler / Coil - (Inverter Matched)			
INVERTER AH / COIL ONLY			
Check EEV and EEV wiring is secure (no adjustment required)		_____	
Additional Checks			
Check wire routings for any rubbing		_____	
Check product for proper draining		_____	
Check screw tightness on blower wheel		_____	
Check factory wiring and wire connections		_____	
Check product for proper clearances as noted by installation instructions		_____	
°F to °C formula: (°F - 32) divided by 1.8 = °C °C to °F formula: (°C multiplied by 1.8) + 32 = °F			

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CUSTOMER FEEDBACK

Daikin Comfort Technologies is very interested in all product comments.

Please fill out the feedback form on the following link:

<https://daikincomfort.com/contact-us>

You can also scan the QR code on the right to be directed to the feedback page.



PRODUCT REGISTRATION

Thank you for your recent purchase. Though not required to get the protection of the standard warranty, registering your product is a relatively short process, and entitles you to additional warranty protection, except that failure by California, Florida, and Quebec residents to register their product does not diminish their warranty rights. The duration of warranty coverages in Texas and Florida differs in some cases.

For Product Registration, please register by following this link:

<https://daikincomfort.com/owner-support/product-registration>

You can also scan the QR code on the right to be directed to the Product Registration page.



Our continuing commitment to quality products may mean a change in specifications without notice.

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