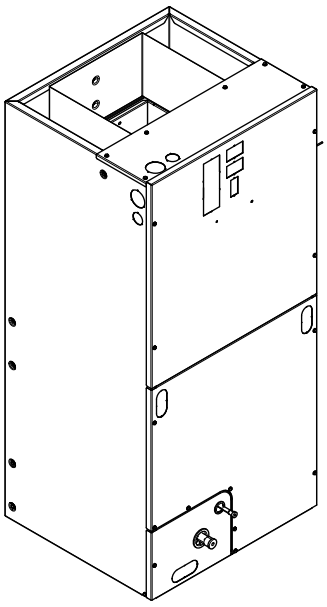
Installation, Operation, and Maintenance

Convertible Air Handlers
2 to 5 Ton

5TEM4B02AC21SA
5TEM4B03AC31SA
5TEM4B04AC31SA
5TEM4D05AC41SA
5TEM4D06AC41SB
5TEM4D07AC51SA



Note: *Graphics in this document are for representation only. Actual model may differ in appearance.*

⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

August 2026

AHR-SVX003D-EN

Introduction

Read this manual thoroughly before operating or servicing this unit.

This document is customer property and is to remain with this unit. Return to the service information pack upon completion of work.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
NOTICE	Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- **Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/ sleeves, butyl gloves, safety glasses, hard hat/ bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.**
- **When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.**
- **If there is a risk of energized electrical contact, arc, or flash, technicians MUST put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.**

⚠ WARNING

Follow EHS Policies!

Failure to follow instructions below could result in death or serious injury.

- **All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.**
- **Non-Trane personnel should always follow local regulations.**

⚠ WARNING

Cancer and Reproductive Harm!

This product can expose you to chemicals, including lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury or property damage.

This unit is not to be used by persons (including children) with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.

Do not allow children to play or climb on the unit or to clean or maintain the unit without supervision.

⚠ WARNING

Safety Hazard!

Failure to follow instructions below could result in death or serious injury or property damage.

Connect the air handler to an outdoor unit suitable for use with R-454B refrigerant only.

⚠ WARNING

Hazardous Voltage!

Failure to disconnect power before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Verify that no power is present with a voltmeter.

⚠ WARNING

Grounding Required!

Failure to follow instructions below could result in death or serious injury, or property damage.

- **Reconnect all grounding devices.**
- **All parts of this product that are capable of conducting electrical current are grounded.**
- **If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.**

⚠ WARNING

Risk of Fire — Flammable Refrigerant!

Failure to follow instructions below could result in death or serious injury, and equipment damage.

- **To be repaired only by trained service personnel.**
- **Do not puncture refrigerant tubing.**
- **Dispose of properly in accordance with federal or local regulations.**

⚠ WARNING

Live Electrical Components!

Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

When it is necessary to work with live electrical components, have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks.

⚠ WARNING

Refrigerant under High Pressure!

Failure to follow instructions below could result in an explosion which could result in death or serious injury or equipment damage.

System contains oil and refrigerant under high pressure. Recover refrigerant to relieve pressure before opening the system. See unit nameplate for refrigerant type. Do not use non-approved refrigerants, refrigerant substitutes, or refrigerant additives.

⚠ CAUTION

Sharp Edges!

Failure to follow instructions below could result in minor to moderate injury.

The service procedure described in this document involves working around sharp edges. To avoid being cut, technicians MUST put on all necessary Personal Protective Equipment (PPE), including gloves and arm guards.

⚠ CAUTION

Corrosion Hazard!

Failure to follow instructions below could result in personal injury or equipment damage.

To prevent shortening its service life, do not use air handler during the finishing phases of construction or remodeling. The low return air temperatures can lead to the formation of condensate. Condensate in the presence of chlorides and fluorides from paint and other components creates a corrosive condition which may cause rapid deterioration of the cabinet and internal components.

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Trademark

Revision History

Content restructured and streamlined.

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Information on Servicing

All replacement parts shall be in accordance with the manufacturer's specifications.

Prior to Beginning Work

Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the following shall be completed prior to conducting work on the system:

- Work shall be undertaken under a controlled procedure to minimize the risk of a flammable gas or vapor being present while the work is being performed.
- All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.
- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i.e., non-sparking, adequately sealed or intrinsically safe.
- If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.
- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.
- 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.
- The following checks shall be applied to installations using flammable refrigerants:
  - marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;
  - refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

Repairs to Electrical Components

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment, so all parties are advised.

Initial safety checks shall include:

- that capacitors are discharged; this shall be done in a safe manner to avoid possibility of sparking;
- that no live electrical components and wiring are exposed while charging, recovering or purging the system;
- that there is continuity of earth bonding.

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of Flammable Refrigerants

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.

The following leak detection method is deemed acceptable for all refrigerant systems:

- Electronic leak detectors may be used to detect refrigerant leaks but, in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of

the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.

Example of leak detection fluids is **bubble method**.

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.

Removal and Evacuation

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:

- safely remove refrigerant following local and national regulations;
- evacuate;
- purge the circuit with inert gas (optional for A2L);
- evacuate (optional for A2L);
- continuously flush or purge with inert gas when using flame to open circuit;
- and open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants.

This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

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 A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). 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.

Charging Procedures

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

- Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
- Cylinders shall be kept in an appropriate position according to the instructions.
- Ensure that the refrigerating system is earthed prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care shall be taken not to overfill the refrigerating system.

Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

See installation instructions below for further details.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i.e., special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.

1. Become familiar with the equipment and its operation.
2. Isolate system electrically.
3. Before attempting the procedure, ensure that:
    a. mechanical handling equipment is available, if required, for handling refrigerant cylinders;
    b. all personal protective equipment is available and being used correctly;
    c. the recovery process is supervised at all times by a competent person;
    d. recovery equipment and cylinders conform to the appropriate standards.
4. Pump down refrigerant system, if possible.
5. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
6. Make sure that cylinder is situated on the scales before recovery takes place.
7. Start the recovery machine and operate in accordance with instructions.
8. Do not overfill cylinders (no more than 80 % volume liquid charge).
9. Do not exceed the maximum working pressure of the cylinder, even temporarily.
10. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
11. Recovered refrigerant shall not be charged into another refrigerating system unless it has been cleaned and checked.

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing flammable refrigerant, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.

Pre-Installation

Standard Features

- Multi-position upflow, downflow, horizontal left, and horizontal right
- Painted finish on galvanized steel exterior with fully insulated cabinet that meets R4.2 value
- Sturdy polycarbonate drain pains
  - These air handlers have factory installed drain pans and are shipped for upflow applications.
- 208/230 VAC operation
- Multi-speed direct drive blower
- Factory installed R-454B thermal expansion valve
- All aluminum coil
- Bottom return
- Meets the minimum leakage requirements for Florida and California building codes

Optional Accessories

- 4,5,8,10,15,20, and 25 KW single phase electrical heaters
  - Circuit breakers available on single phase 4, 5, 8, 10, 15, 20, and 25 KW heaters
  - Lugs available on single phase 4, 5, 8, and 10 KW heaters
  - Lugs available on three phase 10 and 15 KW heaters
- Single point power entry kit (for 15 and 20 KW heaters)
- Supply duct flange kit - BAYTEMSPFG1A
- Downflow sub-base kits - TAYBASE185, TAYBASE235, TAYBASE260
- Slim fit filter box kit - BAYSF1185AAA, BAYSF1235AAA, BAYSF1265AAA
- Breaker seal kit - TEMBRKSEALKT01A
- Downflow condensate management kit - BAYTEMDFKT1A
- CleanEffects whole house air cleaners - EFD175DLAH000B, EFD215DLAH000B, EFD235DLAH000B

Installation Recommendations

The 5TEM4series air handler can be installed in closets, utility rooms, alcoves, basements, crawlspaces, or attics. It supports air conditioning and heat pump applications, is available in several models to match outdoor equipment requirements, and offers field-installed electric resistance heaters.

Important: *Installation of this unit shall be made in accordance with the National Electric Code, NFPA No. 90A and 90B, and any other local codes or utilities requirements.*

Notes:

- *The air handlers comply with Code of Federal Regulations, Chapter XX, Part 3280 or equivalent and are suitable for mobile home use.*
- *When installed in unconditioned spaces, condensation may form on the air handler, so all electrical and refrigerant line penetrations must be fully sealed.*
- *The manufacturer recommends using only A.H.R.I.-approved matched indoor and outdoor systems for maximum efficiency, optimal performance, and overall reliability.*
- *There is no declared maximum altitude for operating the appliance.*
- *Charging of the refrigerating system shall be according to the instructions provided by the manufacturer of the outdoor unit.*

Refrigerant Leak Detection System

For all tables in this section, the refrigerant charge is the total system charge marked on the system per the outdoor unit manufacturer's instructions.

⚠ WARNING

Risk of Fire — Flammable Refrigerant!

Failure to follow instructions below could result in death or serious injury, and equipment damage.

- **To be repaired only by trained service personnel.**
- **Do not puncture refrigerant tubing.**
- **Dispose of properly in accordance with federal or local regulations.**

⚠ WARNING

Leak Detection System Installed!

Failure to follow instructions below could result in death or serious injury or equipment damage.

The unit is equipped with electrically powered safety measures and must be powered at all times after installation, except during servicing, to detect any leak.

To protect building occupants, the air handler includes a refrigerant leak detection system consisting of a refrigerant sensor and mitigation control board. It automatically detects indoor coil leaks and initiates actions to reduce the risk of leaked refrigerant ignition, including:

- Turning on the blower of the indoor unit to dilute leaked refrigerant;
- Fully opening any zoning dampers, when applicable;
- Turning off the compressor of the outdoor unit;
- De-energizing potential sources of ignition connected to the system;
- Energizing an audible alarm, if so equipped.

Examples of potential ignition sources that are de-energized include electronic cleaners.

⚠ WARNING

Risk of Fire!

Failure to follow instructions below could cause a fire which could result in death, serious injury, and equipment damage.
Relocate the refrigerant sensor if installing the unit in any other orientation other than upflow.

Refrigerant sensors for refrigerant leak detection systems shall only be replaced as specified by the manufacturer.

Minimum Conditioned Space

The installer must verify that the total space conditioned by the system is large enough to safely dilute any leaked refrigerant in the event of a refrigerant leak of the indoor coil.

The minimum space conditioned by the appliance must be according to Table 1, p. 10. The conditioned space includes any parts of the space connected via an air duct system. The altitude of installation is the altitude above sea level of the site where the equipment is installed.

Table 1. Minimum space conditioned by the appliance

Charge (lb)	Altitude (ft)								
	Sea Level-2,000	2,001-4,000	4,001-6,000	6,001-8,000	8,001-10,000	10,001-12,000	12,001-14,000	14,001-15,000	above 15,000
	Minimum Conditioned Space (ft^2)								
4	63	66	70	74	79	85	91	94	98
5	79	83	88	93	99	106	113	118	122
6	95	100	105	112	119	127	136	141	147
7	110	116	123	130	138	148	159	165	171
8	126	133	140	149	158	169	181	188	196
9	142	149	158	167	178	190	204	212	220
10	158	166	175	186	198	211	227	235	245
11	173	183	193	205	218	232	249	259	269
12	189	199	211	223	237	254	272	282	294
13	205	216	228	242	257	275	295	306	318
14	221	232	246	260	277	296	318	330	343
15	236	249	263	279	297	317	340	353	367
16	252	266	281	298	317	338	363	377	392
17	268	282	298	316	336	359	386	400	416
18	284	299	316	335	356	380	408	424	440
19	299	315	333	353	376	402	431	447	465
20	315	332	351	372	396	423	454	471	489

Airflow Adjustment

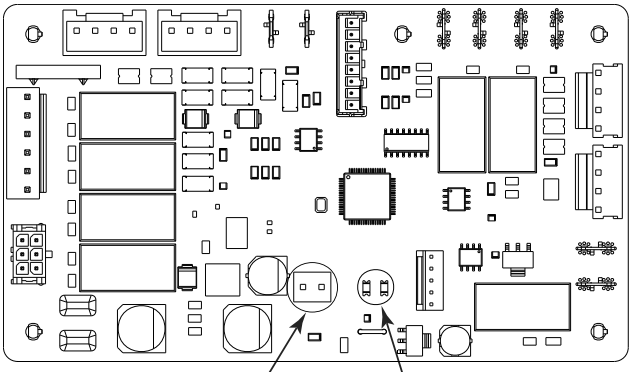
Note: *All air handler models have been factory configured to provide sufficient airflow to dilute leaked refrigerant.*

Verification of Mitigation Actions

After installation, the installer must verify that the refrigerant leak detection system actuates all listed mitigation actions.

The test can be initiated by shorting the two test pins on the header of the mitigation control board inside of the unit. The mitigating actions will continue for approximately 5 minutes. See the following figure.

Figure 1. Mitigation control board



If any of the mitigating actions are not actuated by the system during the test, please check the following:

- All field wiring connections should be checked against the diagrams in “Field Wiring Diagrams,” p. 23.
- The diagnostic indicators on the mitigation control board should be checked against the diagnostic codes given in Figure 1, p. 10.
- Scan the QR code below for more information on field troubleshooting of the refrigerant leak detection system.

Figure 2. QR code

Table 2. MCB diagnostic code

Condition	Green LED
For Software V07.1 and earlier	
Idle or Off	Off
Startup	On
No Active Alarm	Slow Flash

Table 2. MCB diagnostic code (continued)

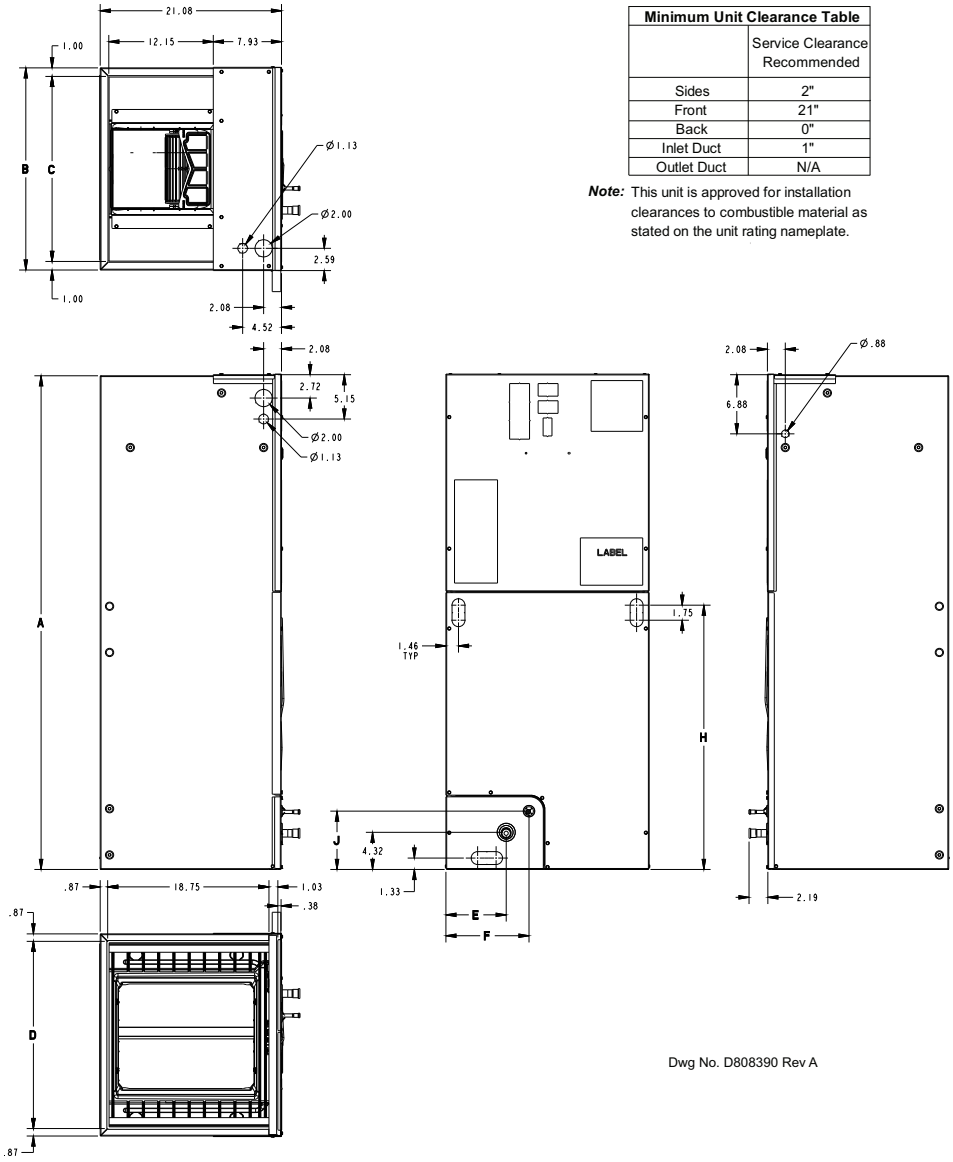
Condition	Green LED
Active Alarm (Refrigerant Leak, Sensor Communication Error, or Sensor Error)	3 Flash
Past Refrigerant Detected Alarm	4 Flash
Past Sensor Communication Error	5 Flash
Past Sensor Error	6 Flash
For Software V9.1 and later	
No Power/Off	Off
Startup	On
Normal Operation	Slow Flash
Active Alarm - Sensor Communication Error	2 Flash
Active Alarm - Refrigerant Leak or Sensor Failure	3 Flash
Past Refrigerant Detected Alarm	4 Flash
Past Sensor Communication or Sensor Error	5, 6, or 7 Flash

Notes:

- *Amber LED diagnostic indicator should always be ON.*
- *Software version is printed on label on control board.*

Dimensional Data

Figure 3. Dimensional data



Minimum Unit Clearance Table	
	Service Clearance Recommended
Sides	2"
Front	21"
Back	0"
Inlet Duct	1"
Outlet Duct	N/A

Note: This unit is approved for installation clearances to combustible material as stated on the unit rating nameplate.

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Note: *All dimensions are reference dimensions.*

Table 3. Product dimensions (inch)

Air Handler Model	A	B	C	D	E	F	H	J	Flow Control	Gas Line Braze
5TEM4B02	45.02	18.50	16.50	16.75	5.43	7.08	18.32	5.76	TXV	3/4
5TEM4B03	46.77	18.50	16.50	16.75	5.43	7.08	20.07	5.76	TXV	3/4
5TEM4B04	51.96	18.50	16.50	16.75	5.43	7.08	24.58	5.76	TXV	7/8
5TEM4D05, D06	51.27	23.50	21.50	21.75	7.01	9.66	24.58	6.76	TXV	7/8
5TEM4D07	57.40	23.50	21.50	21.75	7.01	9.66	30.71	6.76	TXV	7/8

Installation

Unpacking

Check carefully for shipping damage. If any damage is found, report it immediately, and file a claim against the transportation company.

Check the rating plate to confirm the model number, voltage, and any kits match the order. Notify the manufacturer within five days of any discrepancy or missing parts.

Location

Install the air handler in a central location, such as a closet, alcove, utility room, basement, crawl space, or attic. Maintain minimum clearances.

Important: *For electric heat applications, a downflow sub-base may be required. See* *Table 3, p. 12.*

Equipment must be installed to reduce the risk of igniting leaked refrigerant.

⚠ WARNING

Risk of Fire!

Failure to follow instructions below could cause a fire which could result in death, serious injury, and equipment damage.

Confirm the following requirements apply to the room where the air handler is installed.

- **All combustion appliances located in the same room that have continuous pilot lights must be equipped with an effective flame arrest.**
- **All indoor field-made joints of the field piping must be checked for refrigerant leaks after charging using an electronic leak detector calibrated for R-454B with sensitivity of 5 grams per year or better.**
- **The room must be constructed to avoid stagnation or fire hazard in the event of a refrigerant leak.**

Install the unit level for proper condensate drainage. A rise of up to 1/4 inch across the width or depth is allowed if it slopes toward the drain connections. The unit must be set between level and a 1/4-inch rise.

If installed in a closet or utility room, the space must be large enough and accessible for unit replacement. Service is performed from the front, and 21 inches of clearance is required unless the closet door aligns with the air handler front.

If installed in an unconditioned space such as an attic or crawl space, provide enough air circulation to prevent cabinet moisture during high dew point conditions. Install a drain pan under the entire unit if it is in an unconditioned space or above a finished ceiling.

Duct Work

⚠ WARNING

Risk of Fire!

Failure to follow the safety precautions could result in serious injury, death, or property damage.

Only approved auxiliary devices listed in this manual and declared suitable with the refrigerant must be installed in the connecting ductwork. Devices that may be potential ignition sources, such as hot surfaces or electric switching devices, must not be installed unless approved by the manufacturer or declared suitable with the refrigerant used.

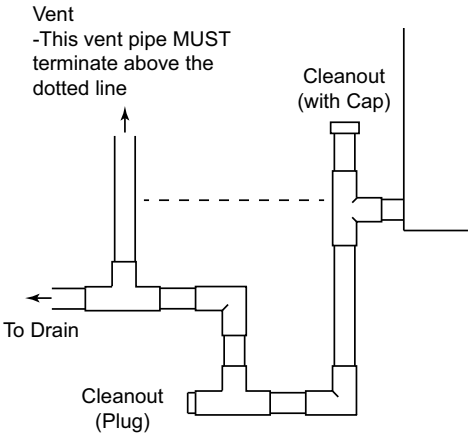
The duct work should be installed in accordance with the:

- NFPA No. 90A "Installation of Air Conditioning and Ventilating systems" and No. 90B "Residential Type Warm Air Heating and Air Conditioning Installation."
- applicable requirements for the particular installation as required by HUD, FHA, VA the applicable building code, local utility, or other governing body.

Condensate Drain

The unit includes primary and auxiliary condensate drains with 3/4-inch NPT connections. The primary drain must be trapped outside the unit and piped per applicable codes. In a properly designed trap (see the figure below), the water column height must be at least equal to the normal negative static pressure between the cooling coil and blower during operation. A greater height is recommended to allow for higher static from dirty filters and water column movement at startup.

Figure 4. Condensate drain



Proper operation of condensate trap under normal operating conditions:

- “A” height of water column equals negative static pressure existing in system.
- “C” dimension should at least equal two times the maximum negative static pressure that can occur in system.

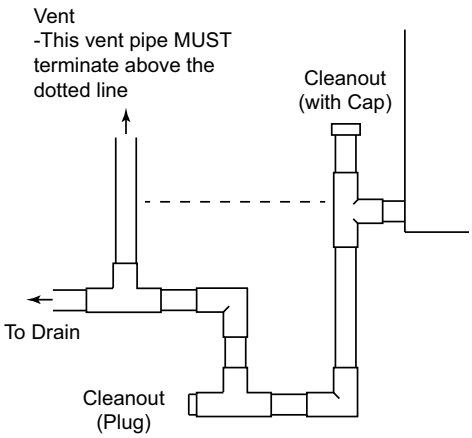
Do not reduce the drain line below the drain pan connection size. Pipe condensate to an open drain or outdoors. All drain lines must slope downward away from the unit at least 1/4 inch per foot for proper drainage.

Important:

- *If a cleanout tee is used, the standpipe must be sealed/capped.*
- *If a vent tee is used, it must be downstream from the trap.*

Insulate the primary drain line to prevent sweating where dew point temperatures may be met. (Insulation is optional depending on climate and application needs.)

Figure 5. Condensate drain



Refrigerant Piping

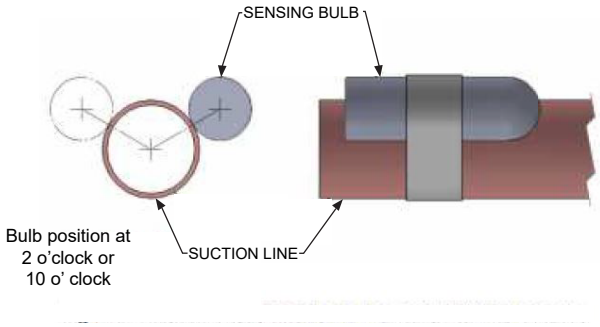
Installation must be protected from physical damage during operation and service and comply with national and local codes and standards. All field joints must remain accessible for inspection before being covered or enclosed.

The indoor coil contains a holding charge of dry air that is released when the sealing plugs are removed.

To protect the TXV, remove the bulb from the tubing inside the unit before brazing the line set connections. Shield painted surfaces during brazing to protect the finish. After brazing, reinstall the TXV bulb and insulate it with the provided adhesive-backed insulation.

Note: *For optimal performance, the TXV bulb can be located and insulated on the vapor line outside the unit. Pass the bulb and line through an opening in the line set panel and place the bulb at the 10 or 2 o'clock position relative to the floor.*

Figure 6. TXV sensing bulb



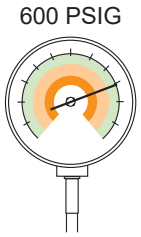
Remove the two red flammable refrigerant warning tags from the line set connections before brazing and replace them afterward.

After field piping is complete for split systems, pressure test with nitrogen and then vacuum test before charging refrigerant, according to the following requirements:

Pressure test:

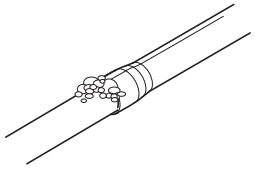
- Using dry nitrogen, pressurize the field piping and indoor coil to the lower of the maximum operating pressures on the indoor and outdoor unit nameplates, likely 600 psi.

Figure 7. Maximum operating pressure



- After removing the pressure source, maintain test pressure for at least 1 hour with no pressure drop on a gauge with resolution not exceeding 30 psi.
- Check each field-made joint for leaks with a soapy solution.

Figure 8. Leak check



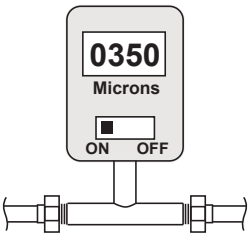
Note: *Remove nitrogen pressure and repair leaks before continuing.*

Vacuum test:

Important: *Do not open the service valves until leak checking and evacuation of the refrigerant lines and indoor coil are complete.*

- Evacuate until the micron gauge reads no higher than 350 microns, then close the valve to the vacuum pump.

Figure 9. Micron gauge



- Evacuation is complete if the micron gauge stays at or below 500 microns after 1 minute and 1500 microns after 10 minutes.
- Once evacuation is complete, blank off the vacuum pump and micron gauge and close the valve on the manifold gauge set.

Charge the system according to the outdoor unit manufacturer's instructions.

Important: *Never use potential ignition sources to search for or detect refrigerant leaks.*

After charging, check all indoor field-made joints for leaks with an electronic leak detector calibrated for R-454B with a sensitivity of 5 grams per year or better.

Metering Device

All units are shipped with an internally checked, non-bleed TXV for air conditioning or heat pump operation. Some outdoor models may require a start assist kit; see the outdoor unit for details.

Blower

This unit has a multi-speed motor with a direct drive blower wheel that provides multiple airflow settings. It is factory set for cooling and heating airflow, with additional settings in the performance tables. Disconnect all power to the unit before adjusting airflow. Verify airflow and evaporator coil temperature drop to ensure adequate airflow.

Note: *For optimal performance, seal the seams of the front panels using an appropriate tape to reduce air leakage.*

Airflow Adjustment

Set indoor airflow as follows:

Full-stage airflow selection using motor taps, AC or HP:

1. Retain black wire on tap 1 at all times.
2. Install green wire on tap 2, 3, 4, or 5. See "Airflow Performance," p. 24for airflow settings.
3. If electric heater is configured, install the pink wire on any tap such that the green or pink wire tap meets or exceeds the minimum tap selection shown in "Minimum Airflow CFM," p. 29.

Two-stage airflow configuration (optional) using low-voltage wiring, AC or HP:

1. Separate Y1 and Y2 wires at the field wiring pigtail connections.
2. Independently wire Y1 and Y2 to compatible two-stage thermostat. See "Field Wiring Diagrams," p. 23 for wiring instructions.

Notes:

- *First-stage airflow is approximately 75% of full-stage airflow setting.*
- *The blower motor is programmed to run the low-stage of the two-stage configuration when Y2 is not energized. (No additional motor tap adjustment is necessary.)*
- *The system is configured to consistently provide full-stage airflow when the electric heater is operating, even when the unit is configured for two stages of airflow.*

Wiring

Consult the unit and outdoor equipment schematic and pictorial wiring diagrams to verify wiring compatibility and specific requirements.

Install all field wiring to the air handler in accordance with the latest edition of National Electrical Code NFPA 70 and all local codes. Check the unit rating plate for rated voltage, minimum circuit ampacity, and maximum over current protection. Supply power wiring must use only copper conductors rated at least 75°C (167°F). Size copper supply wires to National Electrical Code or local code requirements, whichever is more stringent.

Provide a disconnect in the fixed wiring to disconnect the air handler from the power supply. The disconnect must open all poles and comply with national, state, and local codes.

The unit is factory wired for 230/240 VAC, 60 Hz, single-phase operation. If operating at 208 VAC, 60 Hz, follow the indoor unit wiring diagram instructions to change the low-voltage transformer to 208 VAC operation. Verify the unit is properly grounded.

Do not run Class 2 low-voltage control wiring in conduit with power wiring. It must be separated from power wiring unless Class 1 wire with the proper voltage rating is used.

Use 18 AWG color-coded low-voltage control wiring rated at least 105°C. For runs longer than 100 ft, use 16 AWG wire. Maintain separation between control wiring and power wiring.

Air Filter

To protect the coil, blower and other internal parts from excessive dirt and dust a remote air filter must be installed before air enters the evaporator coil. Consult the filter manufacturer for proper sizing and maximum velocity requirements.

Important: *Air filters must meet the test requirements in UL 900.*

Thermostat

Select a single or two-stage thermostat commonly used with HP or AC heating/cooling with electric heat. It energizes the fan on a demand for heat or cool. Install the thermostat on an inside wall, away from drafts, lights, or other heat sources, in a location with sufficient air circulation from rooms it controls.

Sequence of Operation Cooling

- **Cooling (cooling only)**

  When the thermostat calls for cooling, the circuits from R to G is completed. The green wire to the blower motor is energized directly by the 24VAC signal from the thermostat.

  The circuit from R to Y is complete, energizing the compressor contactor of the outdoor unit. The contactor closes and starts the compressor and condenser fan motor.

  Completion of the circuit from R to Y (or R to Y2, if indoor is configured for two-stage airflow) energizes the coil of the relay on the indoor unit. The relay energizes the black wire to the blower motor and activates high-stage airflow.

- **Cooling (heat pump)**

  When the thermostat calls for cooling, the circuits from R to G is completed. The green wire to the blower motor is energized directly by the 24VAC signal from the thermostat.

  The circuit from R to Y is also complete, energizing the compressor contactor of the outdoor unit. The contactor closes and starts the compressor and condenser fan motor.

  Completion of the circuit from R to Y (or R to Y2, if indoor is configured for two-stage airflow) energizes the coil of the relay on the indoor unit. The relay energizes the black wire to the blower motor and activates high-stage airflow.

  Circuit R to O energizes the reversing valve to the cooling position.

- **Heating (heat pump)**

  When the thermostat calls for cooling, the circuits from R to G is completed. The green wire to the blower motor is energized directly by the 24VAC signal from the thermostat.

  The circuit from R to Y is also complete energizing the compressor contactor of the outdoor unit. The contactor closes and starts the compressor and condenser fan motor.

  Completion of the circuit from R to Y (or R to Y2, if indoor is configured for two-stage airflow) energizes the coil of the relay on the indoor unit. The relay energizes the black wire to the blower motor and activates high-stage airflow.

  In the heating mode, the reversing valve of the outdoor unit is not energized.

  If the indoor temperature continues to fall, the R to W circuit is completed, energizing the electric heat contactor(s).

- **Heating (electric heat only)**

  Note: *The thermostat must be setup to bring the blower on when the electric heat is energized.*

  When the thermostat calls for heating, the circuit from R to G is completed and the blower motor is energized directly by the 24VAC signal from the thermostat.

  Completing the circuit from R to W (or R to W1 if configured for two-stages of electric heat) energizes the black wire to the blower motor and activates high-stage airflow.

  Completing the circuit from R to W2 directly energizes the blower motor by the 24VAC signal from the thermostat.

  Completing the circuit from R to W energizes the heating contactor(s).

- **Defrost**

  During defrost, supplemental heat is provided by connecting the X2 (black) wire from the outdoor unit to W1 or W2 at the indoor unit. This prevents cold air from being discharged from the indoor unit during defrost.

Operational and Checkout Procedures

To ensure proper function of the Refrigerant Leak Detection System, all procedures in the “Refrigerant Leak Detection System,” p. 9 section of this manual must be verified.

For optimal performance, operate all units and make charge adjustments according to the outdoor unit’s Service Facts document. After installation, check the entire system against the checkout list at the back of this document. See “Checkout Procedures,” p. 31

Maintenance

Inspect, clean, or replace system air filters at least monthly. Before returning the unit to service, verify all access panels are properly replaced and secured. Although this product is designed for dependable service, schedule maintenance by trained service personnel at least annually, including inspection and testing of electrical and refrigerant components. Clean the heat transfer surface. The blower motor is permanently lubricated for normal operation.

Unit Conversion Instructions

⚠ WARNING

Risk of Fire!

Failure to follow instructions below could cause a fire which could result in death, serious injury, and equipment damage.

Relocate the refrigerant sensor if installing the unit in any other orientation other than upflow.

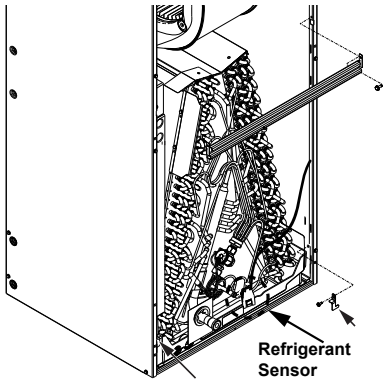
Horizontal Left

Important: *For horizontal applications, airflow restrictions apply for condensate blow off. See "Airflow Performance," p. 24 tables.*

Follow the conversion steps when installing the air handler in horizontal left configuration.

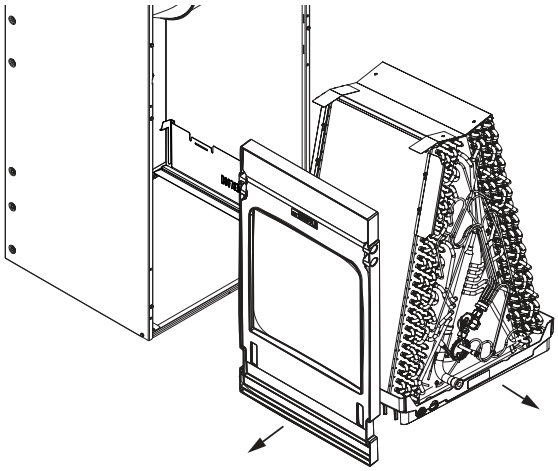
1. Remove the front panels from the air handler. The coil and line set panel do not need to be separated.
2. Remove the fasteners on both sides of the coil. Retain the coil containing brackets and screws. See Figure 10, p. 17
3. SeeFigure 12, p. 17 for coil bracket options. Proceed to Step 11. if using coil support brackets without tabs. Proceed to Step 4. if using coil support brackets with tabs.
4. Remove the two screws holding the center horizontal bracket and rotate out of place. Retain parts. See Figure 10, p. 17.

Figure 10. Horizontal bracket and refrigerant sensor



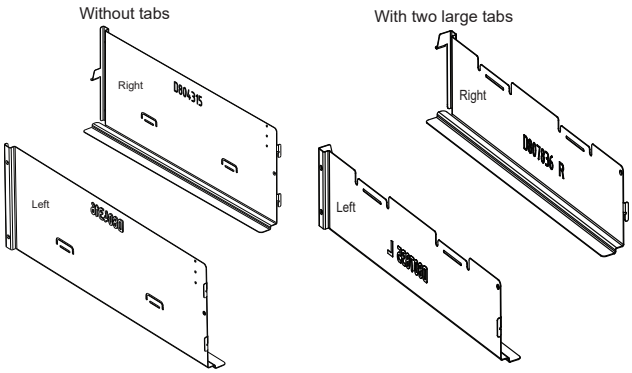
5. Pull refrigerant sensor up and away from the primary drain pan and remove it from the pan. Detach the sensor and clip from the wire harness and move it out of the way.
6. Slide the coil assembly out.

Figure 11. Coil assembly and horizontal drain pan



7. Bend the two tabs on the right coil support bracket. Tabs should be bent inward so they are parallel to the bottom flange.

Figure 12. Coil support brackets

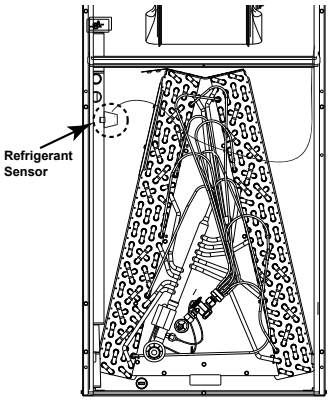


8. Slide the coil assembly back into the air handler cabinet.

Important: *When reinstalling coil in Step 8., it is important that the coil corner locks in place under the rear tab in the side bracket to support the coil weight horizontally. There are 2 additional tabs for added support.*

9. Replace the center horizontal bracket from Step 4.
10. Replace coil retaining brackets and screws from Step 2.
11. Secure sensor to secondary pan using provided clip. Sensor should be positioned close to secondary drain lines.
12. Position extra wire length in the secondary drain pan.

Figure 13. Horizontal left refrigerant sensor location



13. Replace all panels.

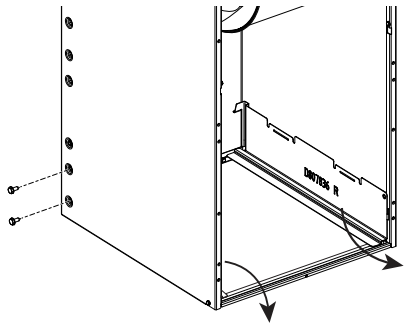
Downflow

Important: *For downflow applications, airflow restrictions apply for condensate blow off. See "Airflow Performance," p. 24.*

Follow the conversion steps when installing the air handler in downflow configuration.

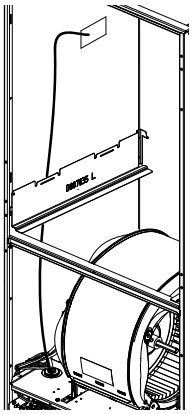
1. Remove the front panels from the air handler. The coil and line set panel do not need to be separated.
2. Remove the fasteners on both sides of the coil. See Figure 10, p. 17.
3. Remove the two screws holding the center horizontal bracket and rotate out of place. Retain parts. See Figure 10, p. 17.
4. Pull refrigerant sensor up and away from the primary drain pan and remove it from the pan. Detach the sensor and clip from the wire harness and move it out of the way.
5. Slide the coil assembly out. Remove and discard the horizontal drain pan. See Figure 11, p. 17.
6. On both sides of the cabinet, remove the screws that hold the coil support brackets and retain for later use. Seal the holes to prevent air leakage.
7. Rotate and lift the two coil support brackets to remove from front slots in cabinet.

Figure 14. Coil support brackets



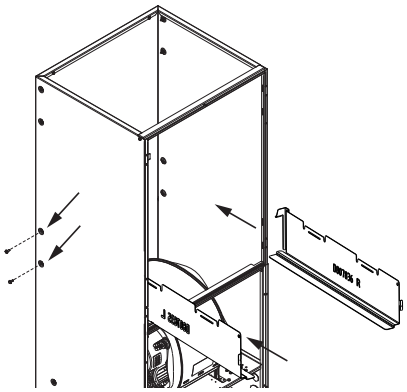
8. Rotate the unit into the downflow orientation.
9. Pre-drill four clearance holes in the cabinet at dimples located below the location the screws were removed for the coil support brackets. There are two holes per side. See Figure 16, p. 18 for hole location.
10. Replace the center horizontal bracket removed in Step 3. Use the screws retained from Step 3. to attach.
11. Place coil support brackets into the slots and rotate into place. Push downward to lock into place. Refrigerant sensor wire harness should be routed between coil support bracket and the insulation.

Figure 15. Refrigerant sensor wire harness



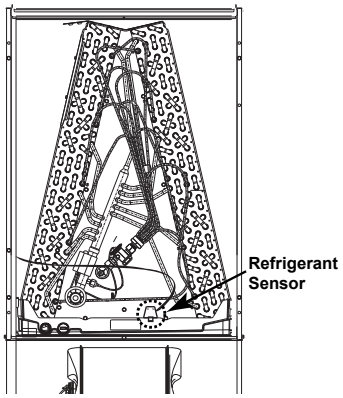
12. Secure each bracket with the screws that were previously removed.

Figure 16. Coil support brackets and clearance holes



13. Slide the coil assembly back into the air handler cabinet as shown.

Figure 17. Downflow refrigerant sensor location



14. Clip refrigerant sensor back onto primary drain pan (as shown in figure above) and reconnect the sensor to the wire harness. Position extra wire length next to the coil.
15. Remove the appropriate knock out for the condensate piping.
16. Replace all panels.

Horizontal Right

Important: *For horizontal applications, airflow restrictions apply for condensate blow off. See "Airflow Performance," p. 24.*

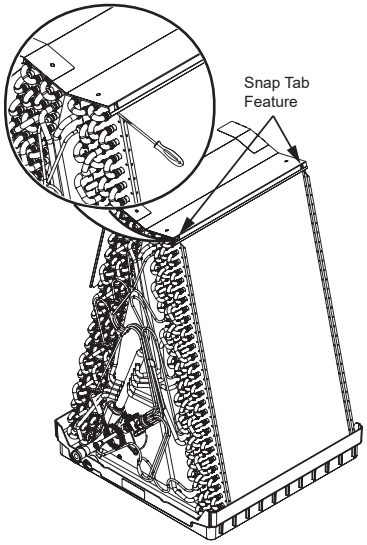
Follow the conversion steps when installing the air handler in horizontal right configuration.

1. Remove the front panels from the air handler. The coil and line set panel do not need to be separated.
2. Remove the fasteners on both sides of the coil. Retain the coil retaining brackets and screws. See Step 4.
3. Remove the two screws holding the center horizontal bracket and rotate out of place. Retain parts. See Step 4.
4. Pull refrigerant sensor up and away from the primary drain pan and remove it from the pan. Detach the sensor and clip from the wire harness and move it out of the way.
5. Make note of the horizontal drain pan orientation (up/down).
6. Slide the coil assembly out. See Figure 11, p. 17.

Important: *For horizontal right applications on some models, the top panel assembly of the coil must be rotated for proper condensate management. See Figure 20, p. 20 and Figure 21, p. 20.*

7. If rotating the top panel assembly is required, position a flathead tip underneath the top baffle flange and pivot the screwdriver downward to release the front tab as shown below.
8. Repeat for right rear tab to release top baffle assembly from coil. See Figure 11, p. 17.

Figure 18. Top baffle



9. Rotate 180 degrees and snap all four corner tabs to lock in place.
10. Remove left side water diverter brackets and screws and reinstall on the right side.

    The coil slabs are different and the mount hole locations will vary. See the illustrations on the following pages that correspond to the unit tonnage to see the correct mounting position of the water diverter bracket.

    Important: *The water diverter brackets are not symmetrical and will vary by tonnage.*

Figure 19. Top baffle and water diverter brackets

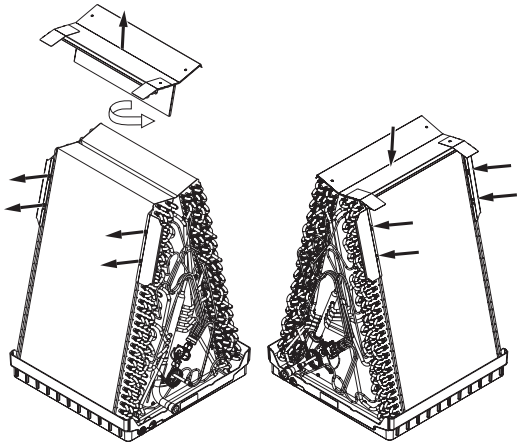


Figure 20. 5TEM4B02, B03, B04, and D05 horizontal right coil conversion

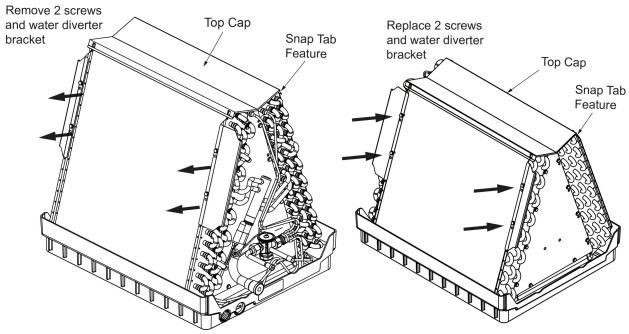
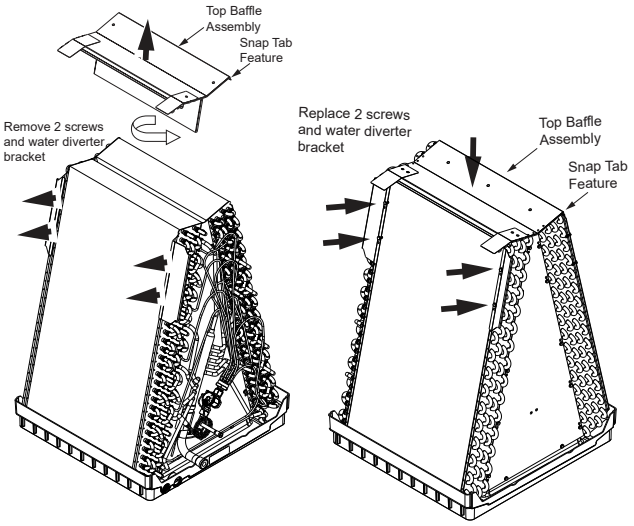


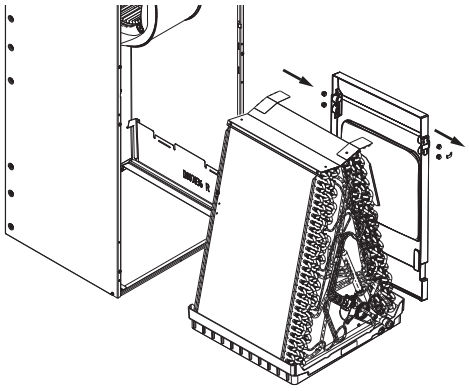
Figure 21. 5TEM4D06 and D07 horizontal right coil conversion



11. To allow the horizontal pan to slide in on the right, cut and remove the zip tie holding the sensor wire harness on the right side of the coil cabinet.
12. Relocate the horizontal drain pan from the left side of the coil to the right side.
13. Remove the drain pan support bracket. Do not discard. Remove the two drain plugs from the front of the drain pan and insert them in the drains at the rear of the drain pan.

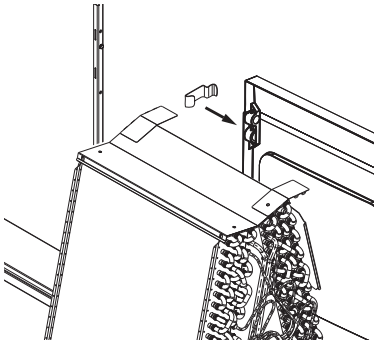
    Important: *When reinstalling coil in Step 17., it is important that the coil corner locks in place under the rear tab in the side bracket to support the coil weight horizontally. There are two additional tabs for added support.*

Figure 22. Coil assembly and horizontal drain pan



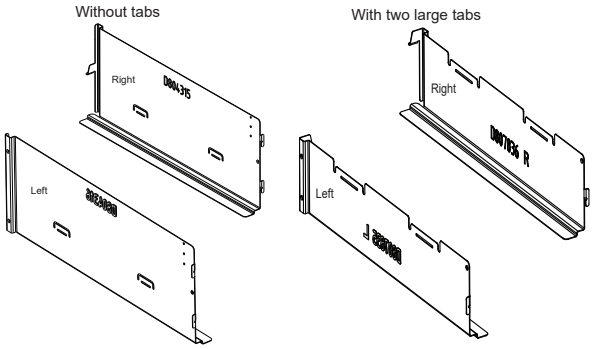
14. Reinstall the drain pan support bracket. The bracket should be located between the two drain plugs as shown.

Figure 23. Drain pan support bracket



15. See Figure 24, p. 20 for coil bracket options. Proceed to Step 16. if using coil support brackets without tabs. Proceed to Step 17. if using coil support brackets with tabs.

Figure 24. Coil support brackets

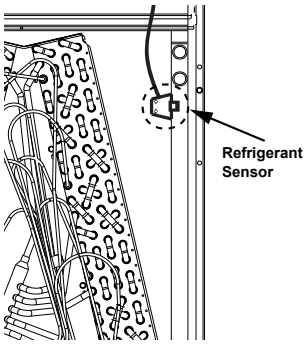


16. Bend the two tabs on the left coil support bracket. Tabs should be bent inward so they are parallel to the bottom flange.
17. Slide the coil assembly back into the air handler cabinet.

Important: *Make sure that the coil corner locks in place under the rear tab and two additional tabs along the length of the drain pan in the side left bracket to support the coil weight in the horizontal right position.*

18. Replace the center horizontal bracket using screws removed earlier in Step 3.
19. Replace the two coil retaining brackets removed in a previous step.
20. Rotate unit into horizontal right position.
21. Install sensor onto secondary drain pan using the provided clip. Sensor should be positioned close to the drain lines. Reconnect the sensor to the wire harness and position extra wire length in the drain pan.

Figure 25. Horizontal right refrigerant sensor location

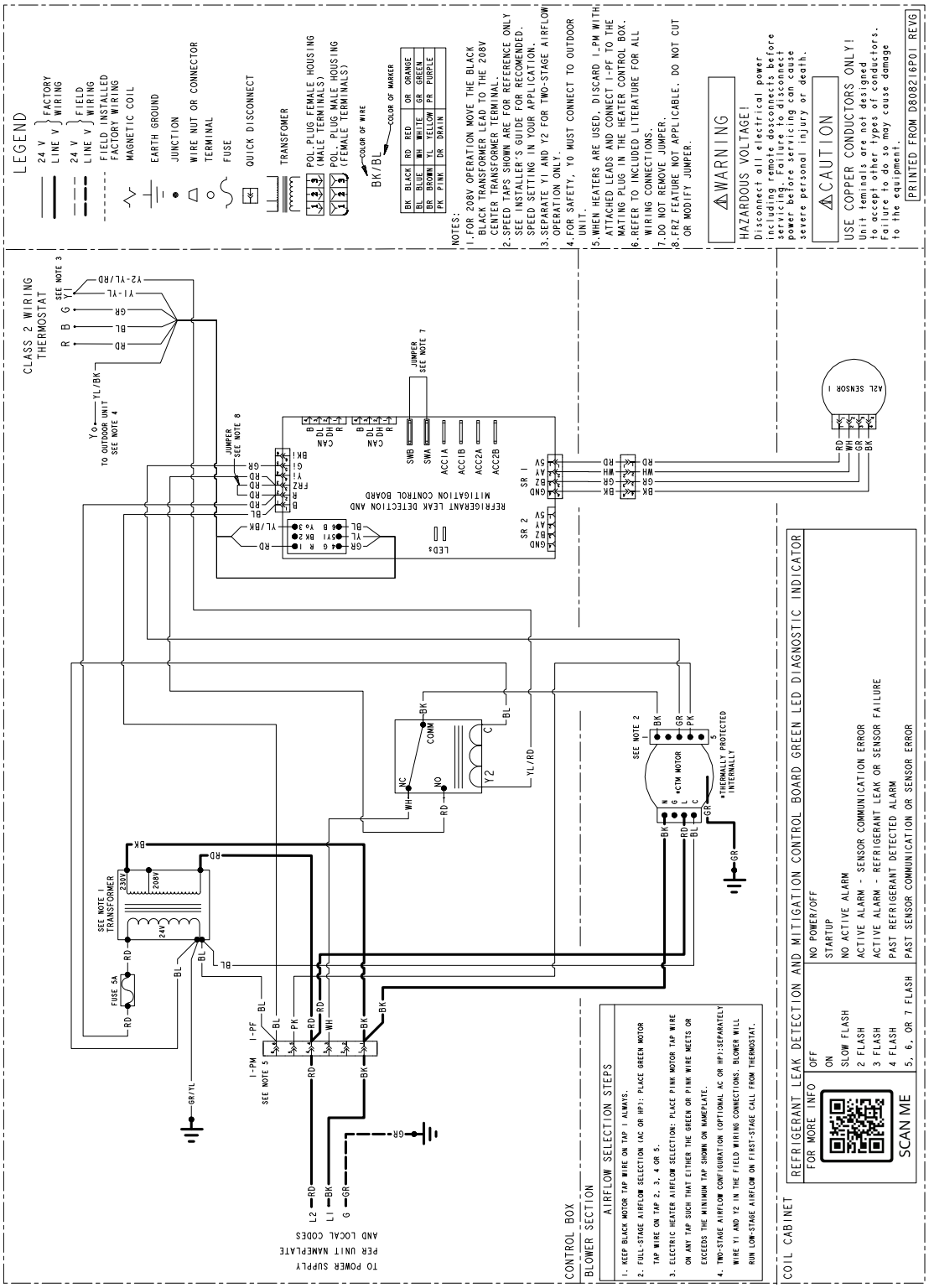


22. Replace all panels.

Installation — Electrical

Wiring Diagram

Figure 26. Wiring diagram



Note: *For refrigerant leak detection and mitigation control board diagnostic flash codes, see* *Table 2, p. 11**.*

Field Wiring Diagrams

Figure 27. Single stage

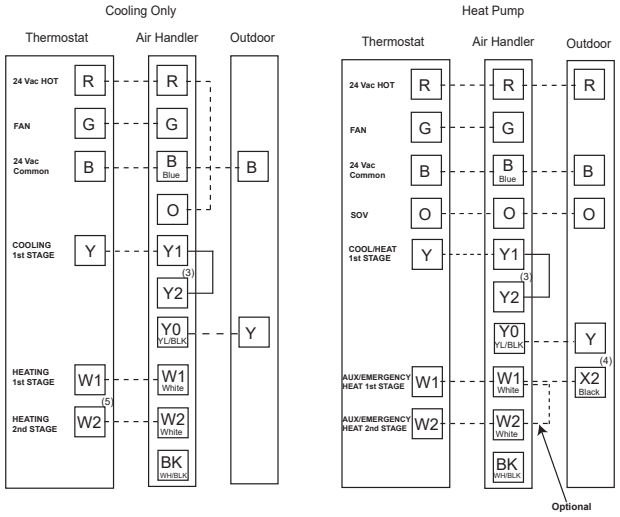
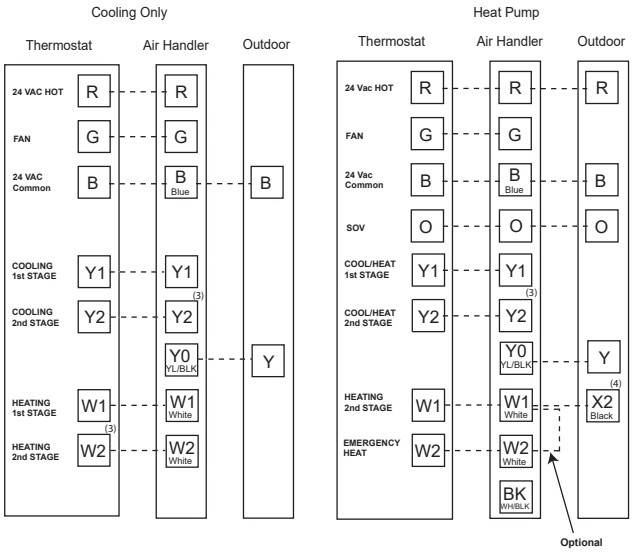


Figure 28. 2–Stage indoor airflow



Notes:

1. *Units with pigtails require wirenuts for connections.*
2. *Cap all unused wires.*
3. *In AC systems for multiple stages of electric heat, jumper W1 and W2 together if comfort control has only one stage of heat.*
4. *X2 is only needed if not using certain Trane or American Standard thermostats.*

External Switches and Accessories

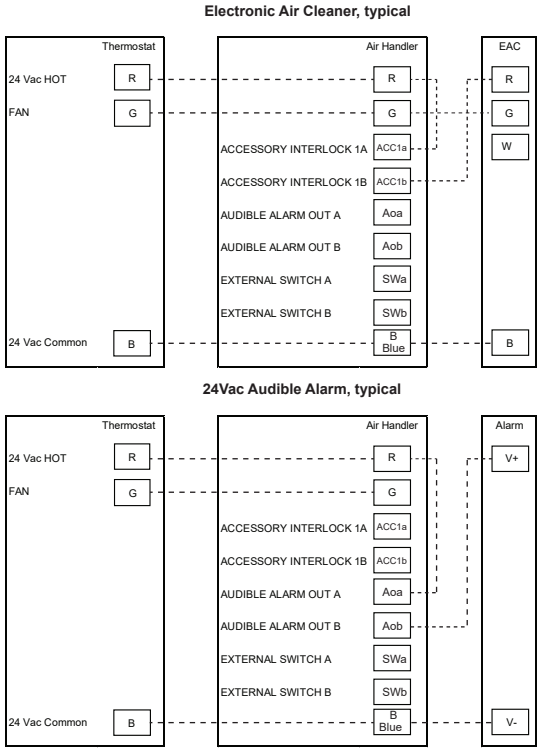
The following optional connections are available on the mitigation control board. See Figure 29, p. 23.

- ACC1 and ACC2 accessory connections. Use when connecting an accessory to the air handler that could be considered a source of ignition (ex. electronic air cleaner).
- Aoa/Aob audible alarm connections. Use when configuring an audible alarm on the refrigerant detection system of the air handler.

ACC1, ACC2, and Aoa/Aob are dry contacts and need source voltage provided from either the accessory or the unit's control wiring.

Connect using field-supplied 3/16-inch (Aoa/Aob) or 1/4-inch (ACC1, ACC2) female spade connections.

Figure 29. Accessories diagram



Scan QR code to view instructional videos on field wiring for CleanEffects or AccuClean electronic air cleaners.

Figure 30. Instructions for CleanEffects or AccuClean electronic air cleaners

SCAN ME

Performance and Electrical Data

Airflow Performance

Table 4. Model – 5TEM4B02AC21SA

External Static (in w.g)	Speed Taps: 208-230 Volts			
	Tap 2	Tap 3[a]	Tap 4	Tap 5
0.1	874	978	1045	1134
0.2	824	934	1002	1096
0.3	746	881	955	1056
0.4	676	813	891	1009
0.5	606	746	828	943
0.6	551	681	762	888
0.7	481	627	702	830
0.8	404	578	653	771
0.9	328	519	606	722

Note: In horizontal and downflow applications, airflow should be limited to 1000 CFM due to condensate blowoff.

[a] Factory setting.

Table 5. Model – 5TEM4B03AC31SA

External Static (in w.g)	Speed Taps: 208-230 Volts			
	Tap 2	Tap 3[a]	Tap 4	Tap 5
0.1	886	1027	1094	1196
0.2	844	989	1059	1164
0.3	791	947	1020	1130
0.4	719	896	978	1094
0.5	660	837	926	1053
0.6	584	778	864	1006
0.7	517	723	813	948
0.8	460	650	753	897
0.9	378	594	694	850

Note: In horizontal and downflow applications, airflow should be limited to 1000 CFM due to condensate blowoff.

[a] Factory setting.

Table 6. Model – 5TEM4B04AC31SA

External Static (in w.g)	Speed Taps: 208-230 Volts			
	Tap 2	Tap 3[a]	Tap 4	Tap 5
0.1	1183	1267	1347	1390
0.2	1141	1230	1310	1346
0.3	1101	1189	1273	1309
0.4	1053	1149	1237	1275
0.5	1004	1105	1196	1236
0.6	957	1058	1155	1196
0.7	916	1016	1111	1153
0.8	870	974	1072	1113
0.9	828	935	1034	1073

Note: In horizontal and downflow applications, airflow should be limited to 1200 CFM due to condensate blowoff.

[a] Factory setting.

Table 7. Model – 5TEM4D05AC41SA

External Static (in w.g)	Speed Taps: 208-230 Volts			
	Tap 2	Tap 3[a]	Tap 4	Tap 5
0.1	1266	1340	1425	1577
0.2	1214	1286	1384	1535
0.3	1163	1242	1335	1494
0.4	1114	1195	1290	1452
0.5	1057	1144	1246	1410
0.6	996	1087	1187	1367
0.7	931	1026	1128	1319
0.8	853	961	1071	1268
0.9	779	889	1005	1211

[a] Factory setting.

Table 8. Model – 5TEM4D06AC41SB

External Static (in w.g)	Speed TapAirflows: 208-230 Volts			
	Tap 2	Tap 3[a]	Tap 4	Tap 5
0.1	1550	1592	1804	1971
0.2	1511	1550	1767	1939
0.3	1470	1510	1734	1907
0.4	1426	1469	1697	1867
0.5	1379	1424	1656	1839
0.6	1324	1381	1615	1804
0.7	1278	1338	1575	1766
0.8	1229	1292	1536	1722
0.9	1173	1241	1492	1691

Note: In horizontal and downflow applications, airflow should be limited to 1700 CFM due to condensate blowoff.

[a] Factory setting.

Table 9. Model – 5TEM4D07AC51SA

External Static (in w.g)	Speed Taps: 208-230 Volts			
	Tap 2	Tap 3[a]	Tap 4	Tap 5
0.1	1574	1648	1781	1935
0.2	1538	1608	1749	1900
0.3	1502	1577	1715	1872
0.4	1466	1542	1685	1842
0.5	1425	1506	1651	1814
0.6	1374	1466	1616	1784
0.7	1328	1423	1576	1749
0.8	1280	1377	1531	1712
0.9	1227	1329	1489	1674

Note: In horizontal and downflow applications, airflow should be limited to 1800 CFM due to condensate blowoff.

[a] Factory setting.

Notes:

- *Tap 1 is not an airflow selection. Black wire must always be on Tap 1.*
- *Values are with wet coil, no filter, and no heaters.*
- *CFM correction for dry coil = add 3%.*
- *First-stage airflow is approximately 75% of full-stage airflow setting.*

Electrical Data

Table 10. Model – 5TEM4B02AC21SA

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater	—	—	—	2.6[a]	3	15	—	—	2.6[a]	3	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.8	13100	16.0	23	25	2.9	9800	13.8	21	25
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.8	16400	20.0	28	30	3.6	12300	17.3	25	25
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.7	26200	32.0	43	45	5.8	19700	27.7	38	40
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.6	32800	40.0	53	60	7.2	24600	34.6	47	50
BAYHTR3510LUG	1/3	9.6	32800	23.1	32	35	7.2	24600	20.0	28	30

[a] Motor Amps.

Table 11. Model – 5TEM4B03AC31SA

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater	—	—	—	3.9[a]	5	15	—	—	3.9[a]	5	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.8	13100	16.0	25	25	2.9	9800	13.8	22	25
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.8	16400	20.0	30	30	3.6	12300	17.3	27	30
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.7	26200	32.0	45	45	5.8	19700	27.7	39	40
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1517BRK-Circuit 1[b]	2/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1517BRK-Circuit 2		4.8	16400	20.0	25	25	3.6	12300	17.3	22	25
BAYHTR3510LUG	1/3	9.6	32800	23.1	33	35	7.2	24600	20.0	29	30
BAYHTR3517LUG	1/3	14.4	49100	34.6	48	50	10.8	36900	30.0	42	45

[a] Motor Amps.
[b] MCA and MOP for circuit 1 contains the motor amps.

Table 12. Models – 5TEM4B04AC31SA

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater	—	—	—	3.9[a]	5	15	—	—	3.9[a]	5	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.84	13100	16.0	25	25	2.88	9800	13.8	22	25

Table 12. Models – 5TEM4B04AC31SA (continued)

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.80	16400	20.0	30	30	3.60	12300	17.3	27	30
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.68	26200	32.0	45	45	5.76	19700	27.7	39	40
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.60	32800	40.0	55	60	7.20	24600	34.6	48	50
BAYHTR1517BRK-Circuit 1[b]	2/1	9.60	32800	40.0	55	60	7.20	24600	34.6	48	50
BAYHTR1517BRK-Circuit 2		4.80	16400	20.0	25	25	3.60	12300	17.3	22	25
BAYHTR1523BRK-Circuit 1[b]	2/1	9.60	32800	40.0	55	60	7.20	24600	34.6	48	50
BAYHTR1523BRK-Circuit 2		9.60	32800	40.0	50	50	7.20	24600	34.6	43	45
BAYHTR3510LUG	1/3	9.60	32800	23.1	33	35	7.20	24600	20.0	29	30
BAYHTR3517LUG	1/3	14.40	49100	34.6	48	50	10.80	36900	30.0	42	45

[a] Motor Amps.
[b] MCA and MOP for circuit 1 contains the motor amps.

Table 13. Model – 5TEM4D05AC41SA

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater	—	—	—	4.1[a]	5	15	—	—	4.1[a]	5	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.8	13100	16.0	25	25	2.9	9800	13.8	22	25
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.8	16400	20.0	30	30	3.6	12300	17.3	27	30
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.7	26200	32.0	45	45	5.8	19700	27.7	40	40
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1517BRK-Circuit 1[b]	2/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1517BRK-Circuit 2		4.8	16400	20.0	25	25	3.6	12300	17.3	22	25
BAYHTR1523BRK-Circuit 1[b]	2/1	9.6	32800	40.0	55	60	7.2	24600	34.6	48	50
BAYHTR1523BRK-Circuit 2		9.6	32800	40.0	50	50	7.2	24600	34.6	43	45
BAYHTR3510LUG	1/3	9.6	32800	23.1	33	35	7.2	24600	20.0	30	30
BAYHTR3517LUG	1/3	14.4	49100	34.6	48	50	10.8	36900	30.0	42	45

[a] Motor Amps.
[b] MCA and MOP for circuit 1 contains the motor amps.

Table 14. Model – 5TEM4D06AC41SB

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater				4.7[a]	6	15			4.7[a]	6	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.8	13100	16.0	26	30	2.9	9800	13.8	23	25
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.8	16400	20.0	31	35	3.6	12300	17.3	28	30
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.7	26200	32.0	46	50	5.8	19700	27.7	41	45
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.6	32800	40.0	56	60	7.2	24600	34.6	49	50
BAYHTR1517BRK-Circuit 1[b]	2/1	9.6	32800	40.0	56	60	7.2	24600	34.6	49	50
BAYHTR1517BRK-Circuit 2		4.8	16400	20.0	25	25	3.6	12300	17.3	22	25
BAYHTR1523BRK-Circuit 1[b]	2/1	9.6	32800	40.0	56	60	7.2	24600	34.6	49	50
BAYHTR1523BRK-Circuit 2		9.6	32800	40.0	50	50	7.2	24600	34.6	43	45
BAYHTR1525BRK-Circuit 1[b]	4/1	6.0	20500	25.0	37	40	4.5	15400	21.6	33	35
BAYHTR1525BRK-Circuit 2		6.0	20500	25.0	31	35	4.5	15400	21.6	27	30
BAYHTR1525BRK-Circuit 3		6.0	20500	25.0	31	35	4.5	15400	21.6	27	30
BAYHTR1525BRK-Circuit 4		6.0	20500	25.0	31	35	4.5	15400	21.6	27	30
BAYHTR3510LUG	1/3	9.6	32800	23.1	34	35	7.2	24600	20.0	30	35
BAYHTR3517LUG	1/3	14.4	49100	34.6	49	50	10.8	36900	30.0	43	45

[a] Motor Amps.
[b] MCA and MOP for circuit 1 contains the motor amps.

Table 15. Models – 5TEM4D07AC51SA

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
No Heater	—	—	—	6.0[a]	8	15	—	—	6.0[a]	8	15
BAYHTR1504BRK BAYHTR1504LUG	1/1	3.8	13100	16.0	28	30	2.9	9800	13.8	25	25
BAYHTR1505BRK BAYHTR1505LUG	1/1	4.8	16400	20.0	33	35	3.6	12300	17.3	29	30
BAYHTR1508BRK BAYHTR1508LUG	1/1	7.7	26200	32.0	48	50	5.8	19700	27.7	42	45
BAYHTR1510BRK BAYHTR1510LUG	1/1	9.6	32800	40.0	58	60	7.2	24600	34.6	51	60

Table 15. Models – 5TEM4D07AC51SA (continued)

Heater Model No.	No. of Circuits/ Phases	240 Volt					208 Volt				
		Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection	Capacity		Heater Amps per Circuit	Minimum Circuit Ampacity	Maximum Overload Protection
		kW	BTUH				kW	BTUH			
BAYHTR1517BRK-Circuit 1[b]	2/1	9.6	32800	40.0	58	60	7.2	24600	34.6	51	60
BAYHTR1517BRK-Circuit 2		4.8	16400	20.0	25	25	3.6	12300	17.3	22	25
BAYHTR1523BRK-Circuit 1[b]	2/1	9.6	32800	40.0	58	60	7.2	24600	34.6	51	60
BAYHTR1523BRK-Circuit 2		9.6	32800	40.0	50	50	7.2	24600	34.6	43	45
BAYHTR1525BRK-Circuit 1[b]	4/1	6.0	20500	25.0	39	40	4.5	15400	21.6	35	35
BAYHTR1525BRK-Circuit 2		6.0	20500	25.0	31	35	4.5	15400	21.6	27	30
BAYHTR1525BRK-Circuit 3		6.0	20500	25.0	31	35	4.5	15400	21.6	27	30
BAYHTR1525BRK-Circuit 4		6.0	20500	25.0	31	35	4.5	15400	21.6	27	30
BAYHTR3510LUG	1/3	9.6	32800	23.1	36	40	7.2	24600	20.0	32	35
BAYHTR3517LUG	1/3	14.4	49100	34.6	50	50	10.8	36900	30.0	44	45

[a] Motor Amps.
[b] MCA and MOP for circuit 1 contains the motor amps.

Minimum Airflow CFM

Table 16. Model — 5TEM4B02AC21SA

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG	Tap 2	Tap 2
BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG, BAYHTR3510LUG	Tap 5	Tap 5

Table 17. Model — 5TEM4B03AC31SA

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG	Tap 3	Tap 3
BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG	Tap 4	Tap 3
BAYHTR1517BRK, BAYHTR3517LUG, BAYHTR3510LUG	Tap 5	Tap 3

Table 18. Model — 5TEM4B04AC31SA

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG	Tap 2	Tap 2
BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG	Tap 5	Tap 3
BAYHTR1523BRK	Tap 5	Tap 3
BAYHTR1517BRK, BAYHTR3517LUG, BAYHTR3510LUG	Tap 5	Tap 3

Table 19. Models — 5TEM4D05AC41SA

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG	Tap 2	Tap 2
BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG	Tap 4	Tap 4

Table 19. Models — 5TEM4D05AC41SA (continued)

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1523BRK	Tap 4	Tap 3
BAYHTR1517BRK, BAYHTR3517LUG, BAYHTR3510LUG	Tap 5	Tap 3

Table 20. Model — 5TEM4D06AC41SB

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG, BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG, BAYHTR3510LUG	Tap 2	Tap 2
BAYHTR1517BRK, BAYHTR3517LUG	Tap 4	Tap 4
BAYHTR1523BRK, BAYHTR1525BRK	Tap 5	Tap 4

Table 21. Model — 5TEM4D07AC51SA

Heater	Minimum Heat Speed Tap	
	With Heat Pump	Without Heat Pump
BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG, BAYHTR1508BRK, BAYHTR1508LUG, BAYHTR1510BRK, BAYHTR1510LUG, BAYHTR3510LUG	Tap 2	Tap 2
BAYHTR1517BRK, BAYHTR3517LUG	Tap 3	Tap 3
BAYHTR1523BRK, BAYHTR1525BRK	Tap 5	Tap 3

Heater Pressure Drop Table

Table 22. Heat pressure drop

Airflow CFM	Number of Racks					Heater Racks	
	1	2	3	4		Heater Model	No. of Racks
	Air Pressure Drop — Inches W.G.						
1800	0.02	0.04	0.06	0.14		BAYHTR1504	1
1700	0.02	0.04	0.06	0.14		BAYHTR1505	2
1600	0.02	0.04	0.06	0.13		BAYHTR1508	2
1500	0.02	0.04	0.06	0.12		BAYHTR1510	2
1400	0.02	0.04	0.06	0.12		BAYHTR1517	3
1300	0.02	0.04	0.05	0.11		BAYHTR3510	3
1200	0.01	0.04	0.05	0.10		BAYHTR3517	3
1100	0.01	0.03	0.05	0.09		BAYHTR1523	4
1000	0.01	0.03	0.04	0.09		BAYHTR1525	4
900	0.01	0.03	0.04	0.08		—	—
800	0.01	0.03	—	—		—	—
700	0.01	0.02	—	—		—	—
600	0.01	0.02	—	—		—	—

Checkout Procedures

The final phase of the installation is the system Checkout Procedures. The following list represents the most common items covered in a Checkout Procedure. Confirm all requirements in this document have been met.

- ☐ All wiring connections are tight and properly secured.
- ☐ Voltage and running current are within limits.
- ☐ All refrigerant lines (internal and external to equipment) are isolated, secure, and not in direct contact with each other or structure.
- ☐ All braze connections have been checked for leaks. A vacuum of 350 microns provides confirmation that the refrigeration system is leak free and dry.
- ☐ If unit is installed in any orientation other than upflow, refrigerant sensor is properly relocated.
- ☐ Final unit inspection to confirm factory tubing has not shifted during shipment. Adjust tubing if necessary so tubes do not rub against each other or any component when unit runs.
- ☐ Ductwork is sealed and insulated.
- ☐ All drain lines are clear with joints properly sealed. Pour water into drain pan to confirm proper drainage. Provide enough water to ensure drain trap is primed.
- ☐ Supply registers and return grilles are open, unobstructed, and air filter is installed.
- ☐ Indoor blower and outdoor fan are operating smoothly and without obstruction.
- ☐ Indoor blower motor set on correct speed setting to deliver required CFM. Blower and fan set screws are tight.
- ☐ Cover panels are in place and properly tightened.
- ☐ System functions safely and properly in all modes.
- ☐ Refrigerant leak detection system mitigating actions are verified.
- ☐ All refrigerant safety procedures have been verified.
- ☐ Owner has been instructed on use of system and given manual.

About Trane and American Standard Heating and Air Conditioning

Trane and American Standard create comfortable, energy efficient indoor environments for residential applications. For more information, please visit www.trane.com or www.americanstandardair.com.

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