

# LORING

CONSULTING ENGINEERS



**Trinity AME Zion Church**  
**972 W. Pennsylvania Ave., Southern Pines, NC 28387**

**Existing MEP Systems  
Conditions  
Assessment Report/  
Recommendations**

**Prepared for:** Strada Architecture

**Prepared by:** Loring Consulting Engineers, Inc.  
1007 Slater Road, Suite 120  
Durham, NC 27703

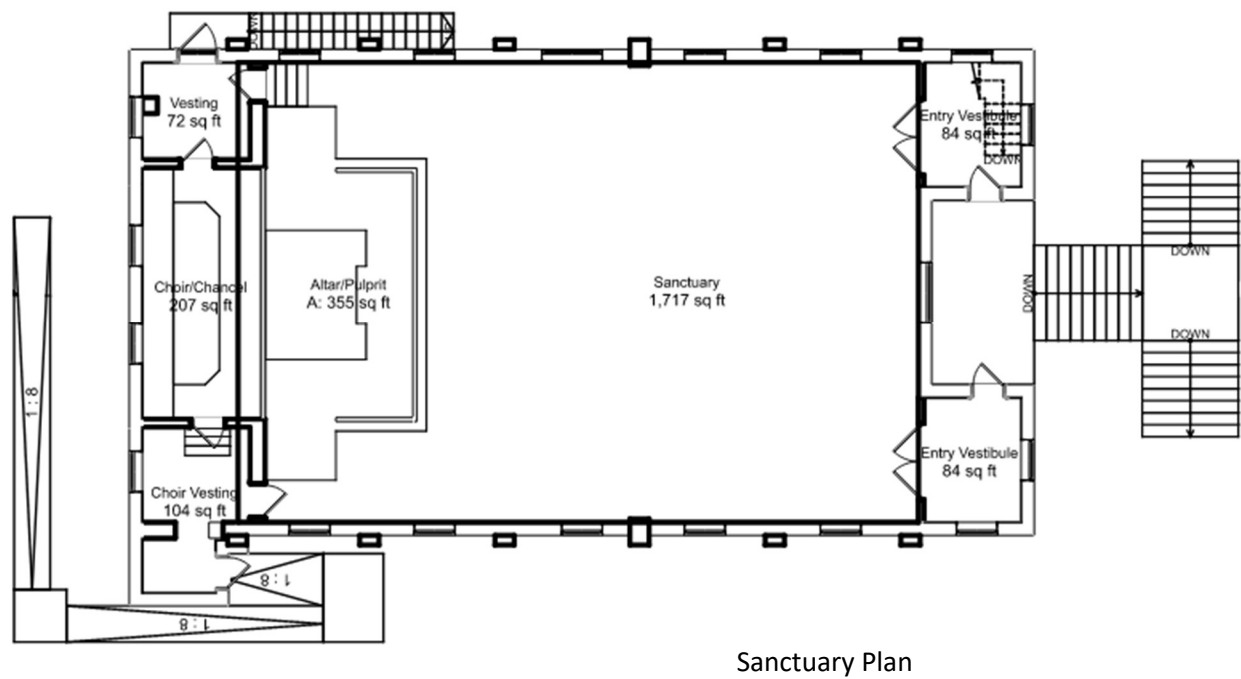
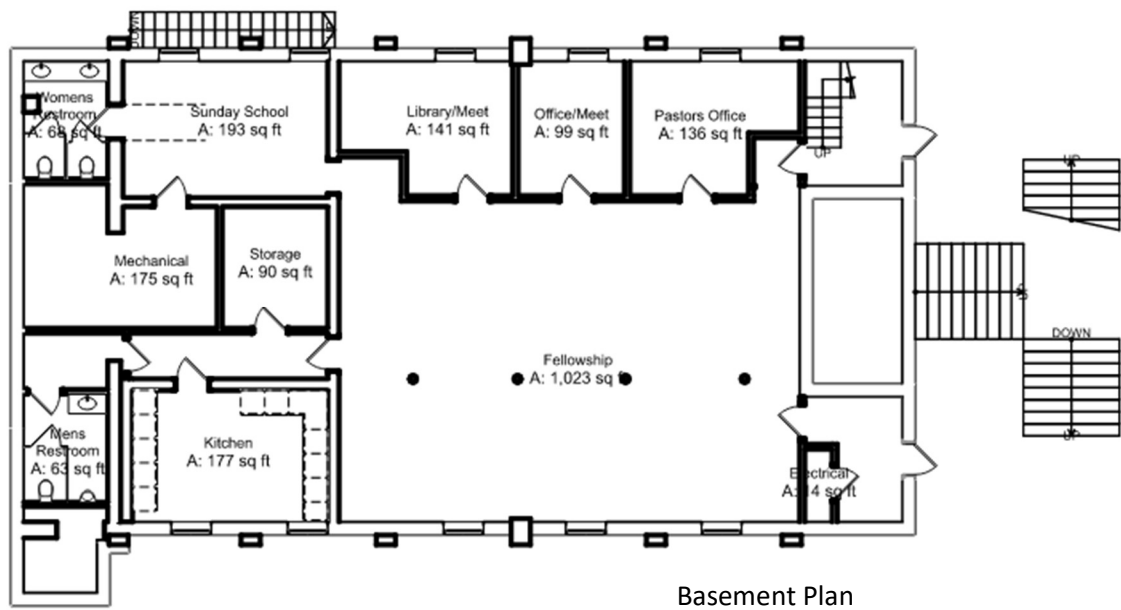
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INTRODUCTION

Loring Consulting Engineers, Inc (LORING) has been retained by Strada to assess the existing Mechanical, Electrical, and Plumbing (MEP) Systems serving the Trinity AME Zion Church. The church is located at 972 W. Pennsylvania Avenue in Southern Pines, NC. The building was constructed in 1923 and has been utilized to provide an inviting and safe place, offering a place for worship and community to meet and collaborate. This report is limited to documenting the existing MEP conditions and providing recommendations to allow the congregation to occupy the sanctuary and utilize the restrooms in the basement. This is referred to as Phase 1 throughout the report.



## **EXECUTIVE SUMMARY**

Based on our observations, the existing MEP systems are not functioning well and should be replaced. The following items will need to be modified or added at a minimum to allow the congregation to reoccupy the sanctuary and utilize the restrooms in the basement (more detail is provided within the body of this report):

1. The existing HVAC system will need to be replaced with a heat pump system type totaling approximately 15 tons.
2. The existing electrical branch circuit distribution will need to be modified to refeed lighting and other miscellaneous devices.
3. The existing building plumbing infrastructure can support the existing layout.

We have no zoning/code concerns based on our analysis of the project requirements.

## MECHANICAL SYSTEMS

### A. Heating/Cooling

The building is served via three (3) DX split A/C units with gas furnace that total approximately 13 tons. Each unit has ducted supply, return, and outside air. We observed a gas company unsafe notice for the gas furnace issued in April 2011 for improper venting of the equipment. There is one (1) exhaust fan that serves the existing restroom. The kitchen is served via no exhaust. The equipment was manufactured in 2006 and is approaching the end of their useful service life. The current duct distribution/layout is not optimal as the units in the sanctuary supply cooling from above the choir loft and the heating is done via the unit the basement ducted to four (4) registers located in the floor of the sanctuary.



Existing Gas Furnace

## PLUMBING & FIRE PROTECTION SYSTEMS

### A. Domestic Water Services

The building is fed via one (1) 1" domestic cold-water service. The water pressure was approximately 48 psi measured at the faucet. Note the pressure is adequate to support anticipated renovation of the building, but a larger 2" water service would be required to support additional fixtures. Some of the existing water piping was not properly insulated.

### B. Domestic Hot Water

There is one (1) tank type 50-gallon electric water heater that serves/produces the domestic hot water for the building. The water heater was manufactured in 2008 and is past its useful service life. However, if the water heater is functioning properly, it will be reused for this initial Phase 1.

### C. Sanitary

The building's sanitary and waste system is currently served by a single stack distributed to each restroom. The waste line exits below grade on the rear of the building.

### D. Storm

The storm water/roof drainage system is served via gutters and down spouts.



Existing Water Heater



Existing Bathroom

## ELECTRICAL SYSTEMS

### A. Electric Services

The building is being served via a 400A, 240V, 1-Phase service. The electrical distribution (panelboards) are within their useful service life. They will be modified based on the proposed space plan. There will be some rewiring of branch circuits based on observations of electrical arcing and the age/type of wiring that has been utilized.

### B. Fire Alarm

Currently there is no Fire Alarm system serving the building.



Existing Electrical Panel

## MEP DESIGN

### General Design Intent

MEP systems will be designed to conform to the 2018 State of North Carolina Building Code, Mechanical Code, Fire Protection Code, and Energy Conservation Code. Systems will also be designed per National Fire Protection Association (NFPA) Codes, State of North Carolina directives, and applicable local codes and regulations of the authorities having jurisdiction. All systems will meet recognized standards for energy efficiency, maintenance, and long-term service life.

### HVAC Systems

#### *Design Criteria*

1. Outside Design Conditions:

Location: Pinehurst, NC

Latitude: 36°

Winter: DBT 15°F/ WBT 13°F

Summer: DBT 93°F/WBT 76°F

2. Inside Design Conditions:

Dry bulb temperature (Summer): 74°F ( $\pm 2.0^\circ\text{F}$ )

Dry bulb temperature (Winter): 70°F ( $\pm 2.0^\circ\text{F}$ )

Relative humidity (Summer): 50% ( $\pm 10\%$ )

3. Building Construction:

Wall Construction: U Value = 0.089 BTU/H°F-SF

Roof Construction: U Value = 0.34 BTU/H°F-SF

Window: U Value = 0.4 BTU/H°F-SF, SC = 0.4 (interior blinds) – New Windows

4. Miscellaneous Sensible Gains:

- Conference room lighting: 0.75 watts/sf
- Office and support area lighting: 0.75 watts/sf
- Sanctuary lighting: 1.0 watts/sf
- Kitchen lighting: 1.2 watts/sf
- Conference room equipment: 1.0 watts/sf

- Sanctuary Equipment: 1 watts/sf
  - Kitchen Equipment: 6 watts/sf
5. Room Criteria:
- Offices: NC 30
  - Conference Rooms: NC 30
  - Sanctuary Area: NC 30
  - Public areas: NC 40
  - Kitchen: NC 40

All other occupied spaces not listed above will be in compliance with values listed in ASHRAE HVAC Application handbook.

### ***Ventilation***

Ventilation systems will be designed in accordance with the State of North Carolina Mechanical Code.

### ***Cooling/Heating System***

General:

- Cooling/Heating for the building spaces will be provided via a heat pump system totaling approximately 15 tons. The condensers (total of 3) will be located outside on the ground, and the evaporators will be located in the basement and sanctuary back of house (above vestibules).
  - Heat pump system to replace existing split A/C units and gas furnace in kind.

### ***Cooling System***

#### ***Duct Systems***

General:

- All ductwork will be sealed, insulated and installed per NCBC, NCECC, and NFPA requirements.

Supply and Return:

- Ductwork distribution will consist of reconnecting to existing ducts currently installed.

Exhaust:

- Exhaust systems will be existing to remain and will not be modified as part of Phase 1.

## ***Piping***

Refrigerant and condensate piping:

- Pipes:
  - Type L copper pipe, soldered copper Type 'L' Drawn, ASTM B88 up to 2".
- Fittings:
  - Welded fittings, screwed fittings for 2" and smaller.

## ***HVAC Insulation***

Duct will be insulated as follows:

- All insulation R-values will meet the requirements of the 2018 Energy Conservation Code of the State of North Carolina.
- Insulation will meet the requirements of UL for flame spread and smoke developed (less than 25 and 50, respectively).
- All Supply and Return Ductwork:
  - 1-1/2" thick, 1.5# density glass fiber insulation wrap with reinforced foil faced, flame resistant vapor barrier and a minimum thermal resistance of 0.2 BTU/in/ft<sup>2</sup>-°F.
- All Outdoor Air Intake Ductwork:
  - 2" thick, 6# density rigid insulation board applied with metal pins and shields and a minimum thermal resistance of 0.125 BTU/in/ft<sup>2</sup>-°F.

Pipe will be insulated as follows:

- Refrigerant:
  - 1-1/2" thick insulation. Type I, flexible, closed cell elastomeric tubular insulation with an average thermal conductivity of 0.27 BTU/in/ft<sup>2</sup>-°F.

## ***Building Automation System***

General:

- All controls will be standalone type and self-contained.

## Electrical Systems

General:

- Electric work will conform to the applicable rules and regulations of the North Carolina Building Code, NFPA 70, National Electrical Code, and applicable local codes and regulations of the authorities having jurisdiction (AHJ).
- Each electrical panel board shall be provided with a panel number marked (at the exterior panel face) that is coordinated with the panel board schedules on the electrical construction drawings.
- Lighting fixtures shall be 2700K color temperature.

### **Electrical Service**

The existing 400A, 240/120V service will be reutilized to serve the building.

### **Electrical Distribution and Equipment**

1. Existing Panelboards will be reused.
2. Wiring Methods:
  - a. Feeder and branch circuit wiring will be run in RGS (Rigid Galvanized Steel) or EMT (Electric Metallic Tubing) as follows:

|                 |                                                                                                 |
|-----------------|-------------------------------------------------------------------------------------------------|
| Power Feeders   | - RGS for all exposed and for concealed 2" or larger.<br>- EMT for concealed 1-1/2" or smaller. |
| Branch Circuits | - RGS for all 2" or larger and in mechanical and electrical rooms.                              |
| Telecom/AV      | - EMT 4" or smaller                                                                             |

Minimum conduit size shall be 3/4".

EMT fittings will be insulated throat, steel with compressed fittings 1-1/2" or smaller or set steel screws 2" or larger.

Conduits routed underground or under slab will be PVC, with RGS turn-up or sleeves as required.
  - b. Minimum conduit size will be 3/4". Conduit fill will comply with NEC Art. 310.
  - c. Lighting and receptacle branch circuit wiring will be installed concealed in suspended ceilings and walls in finished areas and exposed in mechanical spaces and other areas without suspended ceilings.
  - d. Wiring will be copper with type "THHN" or type "THWN" insulation rated at 600 volts. Wire sizes #12AWG and smaller will be solid, wire sizes #10AWG and larger will be stranded.
  - e. The option of using EMT in lieu of RGS for feeders and metal clad "MC" cable in lieu of EMT for branch circuiting will be identified in selected areas to be priced as an alternate for cost comparison.
3. Utilization Voltages and Branch Circuiting Criteria:

|                              |                                                                                               |
|------------------------------|-----------------------------------------------------------------------------------------------|
| Lighting:                    | On a 1 pole, 20 ampere, 120 volt branch circuit, average 1600 watts                           |
| Convenience Receptacles:     | On a 1 pole, 20 ampere, 120 volt branch circuit, typically receptacles, maximum 8 receptacles |
| Special Purpose Receptacles: | On a 120 or 240 volt appliance branch circuit, ampere rating as required                      |
| Motors 3 / 4 HP and larger:  | On a single-phase 240 volt circuit, ampere rating as required                                 |
| Motors less than 3 / 4 HP:   | On a 1 pole, 20 ampere 120 volt branch circuit                                                |

Separate neutral conductors will be provided for each phase conductor of 120 volt circuits.

4. Grounding:
  - a. Power system grounding will meet or exceed requirements of Article 250 of the NEC.
  - b. Insulated equipment ground conductors will be routed with all feeders and branch circuits.
  - c. Wall mounted copper ground bus bars will be provided in the electrical service rooms, telecom closets and in dedicated spaces for grounding needs.
  - d. All panelboards and equipment will be provided with ground buses or lugs connected to equipment enclosures.
5. Wiring Devices:
  - a. General wiring devices will be specification grade. Standard switches will be 120 volt toggle switches; standard duplex receptacles will be NEMA 5-20R. Device plates will be white screwless type.

### ***Emergency Power System***

1. Our design will utilize emergency battery inverters/integral battery within the fixture to serve emergency designated lighting fixtures.

## Plumbing Systems

### *Design Criteria*

#### General:

- No hub cast iron for sanitary sewer for waste.
- Isolation valves shall be provided to accommodate maintenance at each module where routine service shall be required without affecting other areas. Isolation valves shall be accessible and located on the floor being served.
- All valves shall be clearly identified (labeled/tagged) and correspond to the facility valve numbering and identification system. Drains shall be provided at the base of all water risers and include National Pipe Threads (NPT) threads, valve, and cap.

#### Utilities and Sizes:

- The existing 4" Sanitary line for all regular sanitary waste to be reused and modified for the additional fixtures.
- Storm drainage will continue to be via gutters for the building.

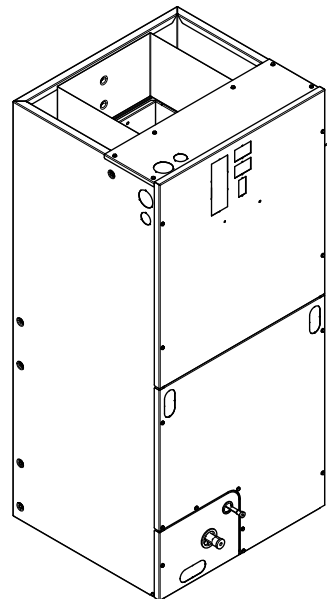
## **APPENDIX A – HVAC CUT SHEETS**



# Product and Submittal Data

## Convertible Air Handlers 2 to 5 Tons

5TEM6B02AV21SA  
5TEM6B03AV21SA  
5TEM6D04AV31SA  
5TEM6D05AV41SA  
5TEM6D06AV41SA  
5TEM6D07AV51SA



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



## Introduction

The 5TEM6 series air handler is designed for installation in a closet, utility room, alcove, basement, crawlspace or attic. These versatile units are applicable to air conditioning and heat pump applications. Several models are available to meet the specific requirements of the outdoor equipment. Field installed electric resistance heaters are available.

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## Revision History

Updated note (a) on all product specification tables.



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## Features and Benefits

- Metal cabinet with captured foil face insulation
- 2% or less air leakage
- R-4.2 Insulating Value
- Multi-Position UP/Down Flow, Horizontal Left /Right
- ALL Aluminum Coil
- Electric Heaters with polarized plug connections (sold as accessory)
- R-454B Thermal Expansion Valve
- Variable Speed ECM Motor
- Low Voltage Pigtail Connections
- Draw Through Design
- Horizontal Drain Pan
- Single Color
- Fused 24v Power
- **5 Year Base Limited Warranty**
- **10 Year Registered Limited Warranty**
- **Optional extended warranty available**

## Optional Equipment

Table 1. Optional equipment

| Accessory Number        | Description                                                              | Fits Cabinet Size (in.) |
|-------------------------|--------------------------------------------------------------------------|-------------------------|
| BAYHTR1504BRK           | Electric Heater, 4KW, Breaker, 24v Control, 1 Ph                         | 18.5 and 23.5           |
| BAYHTR1504LUG           | Electric Heater, 4KW, Lug, 24v Control, 1 Ph                             | 18.5 and 23.5           |
| BAYHTR1505BRK           | Electric Heater, 5KW, Breaker, 24v Control, 1 Ph                         | 18.5 and 23.5           |
| BAYHTR1505LUG           | Electric Heater, 5KW, Lug, 24v Control, 1 Ph                             | 18.5 and 23.5           |
| BAYHTR1508BRK           | Electric Heater, 8KW, Breaker, 24v Control, 1 Ph                         | 18.5 and 23.5           |
| BAYHTR1508LUG           | Electric Heater, 8KW, Lug, 24v Control, 1 Ph                             | 18.5 and 23.5           |
| BAYHTR1510BRK           | Electric Heater, 10KW, Breaker, 24v Control, 1 Ph                        | 18.5 and 23.5           |
| BAYHTR1510LUG           | Electric Heater, 10KW, Lug, 24v Control, 1 Ph                            | 18.5 and 23.5           |
| BAYHTR3510LUG           | Electric Heater, 10KW, Lug, 24v Control, 3 Ph                            | 18.5 and 23.5           |
| BAYHTR1517BRK           | Electric Heater, 15KW, Breaker, 24v Control, 1 Ph                        | 18.5 and 23.5           |
| BAYHTR3517LUG           | Electric Heater, 15KW, Lug, 24v Control, 3 Ph                            | 18.5 and 23.5           |
| BAYHTR1523BRK           | Electric Heater, 20KW, Breaker, 24v Control, 1 Ph                        | 23.5                    |
| BAYHTR1525BRK           | Electric Heater, 25KW, Breaker, 24v Control, 1 Ph                        | 23.5 (D06, D07 only)    |
| BAYTEMSPFG1             | Supply Duct Flange Kit                                                   | 18.5 and 23.5           |
| BAYSPEKT201A            | Single Point Power Entry Kit                                             | 18.5 and 23.5           |
| TAYBASE185              | Air Handler Downflow Sub-Bases 18.5 in                                   | 18.5                    |
| TAYBASE235 (TAYBASE100) | Air Handler Downflow Sub-Bases 23.5 in.                                  | 23.5                    |
| BAYTEMDFKT1A            | Downflow Condensate Management Kit 23.5 in.                              | 23.5                    |
| TEMBRKSEALKT01A         | TEM Breaker Seal Kit                                                     | 18.5 and 23.5           |
| BAYSF1185AAA            | Slim Fit Filter Box Kit 18.5 in.                                         | 18.5                    |
| BAYSF1235AAA            | Slim Fit Filter Box Kit 23.5 in.                                         | 23.5                    |
| FLRSF1185               | 1 in. Slim Fit Replacement Filter, 17.75 in. x19.75 in., Qty 12 18.5 in. | 18.5                    |
| FLRSF1235               | 1 in. Slim Fit Replacement Filter, 22.75 in. x19.75 in., Qty 12 23.5 in  | 23.5                    |
| BAYAH120VKT             | 120v Conversion Kit                                                      | 18.5 and 23.5           |



# Product Specifications

**Table 2. Models – 5TEM6B02AV21SA, 5TEM6B03AV21SA, and 5TEM6D04AV31SA**

| Model                                                        | 5TEM6B02AV21SA                                | 5TEM6B03AV21SA                                | 5TEM6D04AV31SA                                |
|--------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Family                                                       | 5TEM6                                         | 5TEM6                                         | 5TEM6                                         |
| Brand                                                        | Trane, American Standard                      | Trane, American Standard                      | Trane, American Standard                      |
| Family Description                                           | R-454B Convertible Variable Speed Air Handler | R-454B Convertible Variable Speed Air Handler | R-454B Convertible Variable Speed Air Handler |
| Application Configuration                                    | 4-Way                                         | 4-Way                                         | 4-Way                                         |
| <b>Rated Capacity Range (BTUH)</b>                           | 18K - 24K                                     | 18K - 30K                                     | 24K - 42K                                     |
| <b>System Control Type</b>                                   | 24v                                           | 24v                                           | 24v                                           |
| <b>Power Conn. - V/Ph/Hz</b>                                 | 208-230/1/60                                  | 208-230/1/60                                  | 208-230/1/60                                  |
| Max Breaker Size, Without Electric Heater (Amps)             | 15                                            | 15                                            | 15                                            |
| Max Breaker Size, With Electric Heater (Amps) <sup>(a)</sup> | 60                                            | 60                                            | 60                                            |
| <b>Coil Type</b>                                             | All-Aluminum Plate Fin                        | All-Aluminum Plate Fin                        | All-Aluminum Plate Fin                        |
| Refrigerant Type                                             | R-454B                                        | R-454B                                        | R-454B                                        |
| Refrigerant Control                                          | TXV                                           | TXV                                           | TXV                                           |
| Refrigerant Line Connection - Gas (in.)                      | 3/4                                           | 3/4                                           | 7/8                                           |
| Refrigerant Line Connection - Liquid (in.)                   | 3/8                                           | 3/8                                           | 3/8                                           |
| <b>Blower Type</b>                                           | Direct Drive Centrifugal                      | Direct Drive Centrifugal                      | Direct Drive Centrifugal                      |
| Configuration                                                | Draw Through                                  | Draw Through                                  | Draw Through                                  |
| Dimensions (Diameter x Width (in.))                          | 11 x 8                                        | 11 x 8                                        | 11 x 8                                        |
| Motor Type                                                   | Variable Speed                                | Variable Speed                                | Variable Speed                                |
| Nominal CFM <sup>(b)</sup>                                   | 800                                           | 1000                                          | 1200                                          |
| Speed (RPM)                                                  | 1050                                          | 1050                                          | 1050                                          |
| Volts/Ph/Hz                                                  | 208-230/1/60                                  | 208-230/1/60                                  | 208-230/1/60                                  |
| Full Load Amps                                               | 2.8                                           | 4.3                                           | 4.3                                           |
| <b>Filter Rack (Yes, No)</b>                                 | No                                            | No                                            | No                                            |
| Dimensions (Length x Width (in.))                            | —                                             | —                                             | -                                             |
| <b>Duct Connections</b>                                      | L x W                                         | L x W                                         | L x W                                         |
| Supply (in.)                                                 | 12.15 x 16.50                                 | 12.15 x 16.50                                 | 12.15 x 21.50                                 |
| Return (in.)                                                 | 18.75 x 16.75                                 | 18.75 x 16.75                                 | 18.75 x 21.75                                 |
| <b>Drain Conn. Size (in.)</b>                                | 3/4 NPT                                       | 3/4 NPT                                       | 3/4 NPT                                       |
| <b>Dimensions</b>                                            | H x W x D                                     | H x W x D                                     | H x W x D                                     |
| Uncrated (in.)                                               | 46-3/4 x 18-1/2 x 21-1/8                      | 46-3/4 x 18-1/2 x 21-1/8                      | 51-3/8 x 23-1/2 x 21-1/8                      |
| Crated (in.)                                                 | 48-1/4 x 22-1/2 x 25-1/2                      | 48-1/4 x 22-1/2 x 25-1/2                      | 52-3/4 x 27-1/2 x 25-1/2                      |
| <b>Weight</b>                                                |                                               |                                               |                                               |
| Shipping/Net (lbs.)                                          | 126/117                                       | 126/117                                       | 155/144                                       |

<sup>(a)</sup> Maximum overcurrent protection is dependent on which electric heater is installed. See [Electrical Data](#), p. 10.

<sup>(b)</sup> For CFM versus external static pressure (in. w.c.), refer to Installation, Operation, and Maintenance manual.



## Product Specifications

**Table 3. Models – 5TEM6D05AV41SA, 5TEM6D06AV41SA, and 5TEM6D07AV51SA**

| Model                                                        | 5TEM6D05AV41SA                                | 5TEM6D06AV41SA                                | 5TEM6D07AV51SA                                |
|--------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
| Family                                                       | 5TEM6                                         | 5TEM6                                         | 5TEM6                                         |
| Brand                                                        | Trane, American Standard                      | Trane, American Standard                      | Trane, American Standard                      |
| Family Description                                           | R-454B Convertible Variable Speed Air Handler | R-454B Convertible Variable Speed Air Handler | R-454B Convertible Variable Speed Air Handler |
| Application Configuration                                    | 4-Way                                         | 4-Way                                         | 4-Way                                         |
| Rated Capacity Range (BTUH)                                  | 36K - 48K                                     | 36K - 60K                                     | 42K - 60K                                     |
| System Control Type                                          | 24v                                           | 24v                                           | 24v                                           |
| Power Conn. - V/Ph/Hz                                        | 208-230/1/60                                  | 208-230/1/60                                  | 208-230/1/60                                  |
| Max Breaker Size, Without Electric Heater (Amps)             | 15                                            | 15                                            | 15                                            |
| Max Breaker Size, With Electric Heater (Amps) <sup>(a)</sup> | 60                                            | 60                                            | 60                                            |
| Coil Type                                                    | All-Aluminum Plate Fin                        | All-Aluminum Plate Fin                        | All-Aluminum Plate Fin                        |
| Refrigerant Type                                             | R-454B                                        | R-454B                                        | R-454B                                        |
| Refrigerant Control                                          | TXV                                           | TXV                                           | TXV                                           |
| Refrigerant Line Connection - Gas (in.)                      | 7/8                                           | 7/8                                           | 7/8                                           |
| Refrigerant Line Connection - Liquid (in.)                   | 3/8                                           | 3/8                                           | 3/8                                           |
| Blower Type                                                  | Direct Drive Centrifugal                      | Direct Drive Centrifugal                      | Direct Drive Centrifugal                      |
| Configuration                                                | Draw Through                                  | Draw Through                                  | Draw Through                                  |
| Dimensions (Diameter x Width (in.))                          | 11 x 8                                        | 11 x 8                                        | 11 x 8                                        |
| Motor Type                                                   | Variable Speed                                | Variable Speed                                | Variable Speed                                |
| Nominal CFM <sup>(b)</sup>                                   | 1400                                          | 1600                                          | 2000                                          |
| Speed (RPM)                                                  | 1050                                          | 1050                                          | 1050                                          |
| Volts/Ph/Hz                                                  | 208-230/1/60                                  | 208-230/1/60                                  | 208-230/1/60                                  |
| Full Load Amps                                               | 4.3                                           | 6.8                                           | 6.8                                           |
| Filter Rack (Yes, No)                                        | No                                            | No                                            | No                                            |
| Dimensions (Length x Width (in.))                            | —                                             | —                                             | —                                             |
| Duct Connections                                             | L x W                                         | L x W                                         | L x W                                         |
| Supply (in.)                                                 | 12.15 x 21.50                                 | 12.15 x 21.50                                 | 12.15 x 21.50                                 |
| Return (in.)                                                 | 18.75 x 21.75                                 | 18.75 x 21.75                                 | 18.75 x 21.75                                 |
| Drain Conn. Size (in.)                                       | 3/4 NPT                                       | 3/4 NPT                                       | 3/4 NPT                                       |
| Dimensions                                                   | H x W x D                                     | H x W x D                                     | H x W x D                                     |
| Uncrated (in.)                                               | 51-3/8 x 23-1/2 x 21-1/8                      | 57-3/8 x 23-1/2 x 21-1/8                      | 57-3/8 x 23-1/2 x 21-1/8                      |
| Crated (in.)                                                 | 52-3/4 x 27-1/2 x 25-1/2                      | 58-1/8 x 25-7/8 x 25-1/2                      | 58-1/8 x 25-7/8 x 25-1/2                      |
| Weight                                                       |                                               |                                               |                                               |
| Shipping/Net (lbs.)                                          | 155/144                                       | 185/174                                       | 185/174                                       |

<sup>(a)</sup> Maximum overcurrent protection is dependent on which electric heater is installed. See [Electrical Data](#), p. 10.

<sup>(b)</sup> For CFM versus external static pressure (in. w.c.), refer to Installation, Operation, and Maintenance manual.



# Heater Pressure Drop Table

Table 4. Heater pressure drop

| Airflow<br>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   | 1            |
| 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 | —    | —    |  | —            | —            |



# Performance and Electrical Data

## Airflow Performance data

Table 5. Cooling airflow performance – model 5TEM6B02AV21SA

| 5TEM6B02AV21SA Cooling Airflow Performance, Wet Coil, No Filter, No Heater |                       |                 |                    |     |     |     |               |                          |         |         |         |         |
|----------------------------------------------------------------------------|-----------------------|-----------------|--------------------|-----|-----|-----|---------------|--------------------------|---------|---------|---------|---------|
| Outdoor Unit Size (Tons)                                                   | Speed Setting         | Airflow Setting | DIP Switch Setting |     |     |     | Airflow Power | External Static Pressure |         |         |         |         |
|                                                                            |                       |                 | SW1                | SW2 | SW3 | SW4 |               | 0.1                      | 0.3     | 0.5     | 0.7     | 0.9     |
| 1.5                                                                        | Low                   | 353 CFM/ton     | ON                 | ON  | OFF | ON  | CFM Watts     | 524 49                   | 517 83  | 482 111 | 418 133 | 326 148 |
|                                                                            | Normal                | 401 CFM/ton     | ON                 | ON  | OFF | OFF | CFM Watts     | 608 60                   | 604 99  | 580 134 | 535 167 | 471 197 |
|                                                                            | High                  | 451 CFM/ton     | ON                 | ON  | ON  | OFF | CFM Watts     | 683 76                   | 683 119 | 664 160 | 626 198 | 571 233 |
| 2                                                                          | Low                   | 343 CFM/ton     | OFF                | ON  | OFF | ON  | CFM Watts     | 693 78                   | 693 122 | 674 164 | 638 202 | 583 237 |
|                                                                            | Normal                | 390 CFM/ton     | OFF                | ON  | OFF | OFF | CFM Watts     | 787 98                   | 791 149 | 780 197 | 753 241 | 712 284 |
|                                                                            | High                  | 439 CFM/ton     | OFF                | ON  | ON  | OFF | CFM Watts     | 883 126                  | 889 181 | 877 233 | 847 285 | 801 333 |
| 2.5                                                                        | Low                   | 300 CFM/ton     | ON                 | OFF | OFF | ON  | CFM Watts     | 757 91                   | 760 140 | 746 186 | 716 229 | 671 269 |
|                                                                            | Normal <sup>(a)</sup> | 340 CFM/ton     | ON                 | OFF | OFF | OFF | CFM Watts     | 863 119                  | 867 173 | 854 224 | 826 273 | 781 319 |
|                                                                            | High                  | 383 CFM/ton     | ON                 | OFF | ON  | OFF | CFM Watts     | 950 151                  | 963 213 | 945 265 | 896 310 | 818 345 |

<sup>(a)</sup> Factory Default Setting

Table 6. Heating airflow performance – model 5TEM6B02AV21SA

| 5TEM6B02AV21SA Heating Airflow Performance, No Filter, No Heater |                       |                 |                    |     |     |     |               |                          |          |          |          |          |
|------------------------------------------------------------------|-----------------------|-----------------|--------------------|-----|-----|-----|---------------|--------------------------|----------|----------|----------|----------|
| Outdoor Unit Size (Tons)                                         | Speed Setting         | Airflow Setting | DIP Switch Setting |     |     |     | Airflow Power | External Static Pressure |          |          |          |          |
|                                                                  |                       |                 | SW1                | SW2 | SW3 | SW4 |               | 0.1                      | 0.3      | 0.5      | 0.7      | 0.9      |
| 1.5                                                              | Low                   | 394 CFM/ton     | ON                 | ON  | OFF | ON  | CFM Watts     | 594 53                   | 596 91   | 568 125  | 525 160  | 456 186  |
|                                                                  | Normal                | 448 CFM/ton     | ON                 | ON  | OFF | OFF | CFM Watts     | 677 68                   | 681 110  | 662 152  | 627 192  | 573 226  |
|                                                                  | High                  | 493 CFM/ton     | ON                 | ON  | ON  | OFF | CFM Watts     | 744 81                   | 749 127  | 739 175  | 709 219  | 665 257  |
| 2                                                                | Low                   | 393 CFM/ton     | OFF                | ON  | OFF | ON  | CFM Watts     | 791 91                   | 796 139  | 792 191  | 764 238  | 726 278  |
|                                                                  | Normal                | 446 CFM/ton     | OFF                | ON  | OFF | OFF | CFM Watts     | 892 120                  | 900 171  | 894 228  | 865 283  | 815 325  |
|                                                                  | High                  | 491 CFM/ton     | OFF                | ON  | ON  | OFF | CFM Watts     | 987 147                  | 1013 201 | 983 260  | 961 322  | 913 365  |
| 2.5                                                              | Low                   | 350 CFM/ton     | ON                 | OFF | OFF | ON  | CFM Watts     | 878 115                  | 886 166  | 880 222  | 851 276  | 810 321  |
|                                                                  | Normal <sup>(a)</sup> | 398 CFM/ton     | ON                 | OFF | OFF | OFF | CFM Watts     | 101 151                  | 989 205  | 998 264  | 974 328  | 926 371  |
|                                                                  | High                  | 437 CFM/ton     | ON                 | OFF | ON  | OFF | CFM Watts     | 1108 185                 | 1092 241 | 1108 300 | 1072 372 | 1024 412 |

<sup>(a)</sup> Factory Default Setting

**Table 7. Cooling airflow performance – model 5TEM6B03AV21SA**

| 5TEM6B03AV21SA Cooling Airflow Performance, Wet Coil, No Filter, No Heater |                       |                 |                    |     |     |     |               |                          |         |          |         |         |
|----------------------------------------------------------------------------|-----------------------|-----------------|--------------------|-----|-----|-----|---------------|--------------------------|---------|----------|---------|---------|
| Outdoor Unit Size (Tons)                                                   | Speed Setting         | Airflow Setting | DIP Switch Setting |     |     |     | Airflow Power | External Static Pressure |         |          |         |         |
|                                                                            |                       |                 | SW1                | SW2 | SW3 | SW4 |               | 0.1                      | 0.3     | 0.5      | 0.7     | 0.9     |
| 1.5                                                                        | Low                   | 353 CFM/ton     | ON                 | ON  | OFF | ON  | CFM Watts     | 479 39                   | 455 68  | 440 95   | 395 121 | 331 143 |
|                                                                            | Normal                | 401 CFM/ton     | ON                 | ON  | OFF | OFF | CFM Watts     | 577 52                   | 553 86  | 548 119  | 509 149 | 454 176 |
|                                                                            | High                  | 451 CFM/ton     | ON                 | ON  | ON  | OFF | CFM Watts     | 672 67                   | 647 106 | 652 144  | 620 179 | 571 212 |
| 2                                                                          | Low                   | 343 CFM/ton     | OFF                | ON  | OFF | ON  | CFM Watts     | 686 69                   | 685 110 | 667 148  | 635 184 | 588 218 |
|                                                                            | Normal                | 390 CFM/ton     | OFF                | ON  | OFF | OFF | CFM Watts     | 796 92                   | 799 137 | 788 181  | 763 223 | 724 264 |
|                                                                            | High                  | 439 CFM/ton     | OFF                | ON  | ON  | OFF | CFM Watts     | 892 116                  | 899 165 | 892 215  | 872 263 | 837 312 |
| 2.5                                                                        | Low                   | 300 CFM/ton     | ON                 | OFF | OFF | ON  | CFM Watts     | 749 82                   | 751 125 | 738 166  | 710 206 | 668 244 |
|                                                                            | Normal                | 340 CFM/ton     | ON                 | OFF | OFF | OFF | CFM Watts     | 867 109                  | 874 157 | 866 205  | 843 252 | 805 299 |
|                                                                            | High                  | 383 CFM/ton     | ON                 | OFF | ON  | OFF | CFM Watts     | 965 139                  | 976 191 | 972 244  | 954 298 | 922 353 |
| 3                                                                          | Low                   | 310 CFM/ton     | OFF                | OFF | OFF | ON  | CFM Watts     | 940 131                  | 950 182 | 945 234  | 926 286 | 892 339 |
|                                                                            | Normal <sup>(a)</sup> | 330 CFM/ton     | OFF                | OFF | OFF | OFF | CFM Watts     | 993 149                  | 956 202 | 1002 257 | 985 313 | 953 370 |

<sup>(a)</sup> Factory Default Setting

**Table 8. Heating airflow performance – model 5TEM6B03AV21SA**

| 5TEM6B03AV21SA Heating Airflow Performance, No Filter, No Heater |                       |                 |                    |     |     |     |               |                          |          |          |          |          |
|------------------------------------------------------------------|-----------------------|-----------------|--------------------|-----|-----|-----|---------------|--------------------------|----------|----------|----------|----------|
| Outdoor Unit Size (Tons)                                         | Speed Setting         | Airflow Setting | DIP Switch Setting |     |     |     | Airflow Power | External Static Pressure |          |          |          |          |
|                                                                  |                       |                 | SW1                | SW2 | SW3 | SW4 |               | 0.1                      | 0.3      | 0.5      | 0.7      | 0.9      |
| 1.5                                                              | Low                   | 394 CFM/ton     | ON                 | ON  | OFF | ON  | CFM Watts     | 571 44                   | 574 82   | 544 113  | 502 137  | 441 171  |
|                                                                  | Normal                | 448 CFM/ton     | ON                 | ON  | OFF | OFF | CFM Watts     | 677 60                   | 682 99   | 668 138  | 618 170  | 572 206  |
|                                                                  | High                  | 493 CFM/ton     | ON                 | ON  | ON  | OFF | CFM Watts     | 746 75                   | 752 116  | 739 160  | 712 200  | 674 237  |
| 2                                                                | Low                   | 393 CFM/ton     | OFF                | ON  | OFF | ON  | CFM Watts     | 799 86                   | 806 128  | 799 175  | 773 220  | 740 259  |
|                                                                  | Normal                | 446 CFM/ton     | OFF                | ON  | OFF | OFF | CFM Watts     | 902 111                  | 911 157  | 912 210  | 891 260  | 861 308  |
|                                                                  | High                  | 491 CFM/ton     | OFF                | ON  | ON  | OFF | CFM Watts     | 995 131                  | 994 181  | 986 242  | 984 293  | 954 352  |
| 2.5                                                              | Low                   | 350 CFM/ton     | ON                 | OFF | OFF | ON  | CFM Watts     | 887 106                  | 895 152  | 895 204  | 873 254  | 843 300  |
|                                                                  | Normal                | 398 CFM/ton     | ON                 | OFF | OFF | OFF | CFM Watts     | 1004 135                 | 1004 186 | 998 246  | 996 298  | 965 359  |
|                                                                  | High                  | 437 CFM/ton     | ON                 | OFF | ON  | OFF | CFM Watts     | 1089 160                 | 1079 215 | 1064 282 | 1079 332 | 1040 408 |
| 3                                                                | Low                   | 325 CFM/ton     | OFF                | OFF | OFF | ON  | CFM Watts     | 986 131                  | 987 180  | 984 239  | 997 291  | 947 349  |
|                                                                  | Normal <sup>(a)</sup> | 346 CFM/ton     | OFF                | OFF | OFF | OFF | CFM Watts     | 1042 146                 | 1038 198 | 1029 262 | 1034 313 | 1001 380 |

<sup>(a)</sup> Factory Default Setting



## Performance and Electrical Data

**Table 9. Cooling airflow performance – model 5TEM6D04AV31SA/5TEM6D05AV41SA**

| 5TEM6D04AV31SA/5TEM6D05AV41SA Cooling Airflow Performance, Wet Coil, No Filter, No Heater |                       |                 |                    |     |     |     |               |                          |          |          |          |          |
|-------------------------------------------------------------------------------------------|-----------------------|-----------------|--------------------|-----|-----|-----|---------------|--------------------------|----------|----------|----------|----------|
| Outdoor Unit Size (Tons)                                                                  | Speed Setting         | Airflow Setting | DIP Switch Setting |     |     |     | Airflow Power | External Static Pressure |          |          |          |          |
|                                                                                           |                       |                 | SW1                | SW2 | SW3 | SW4 |               | 0.1                      | 0.3      | 0.5      | 0.7      | 0.9      |
| 2.5                                                                                       | Low                   | 300 CFM/ton     | ON                 | ON  | OFF | ON  | CFM Watts     | 717 47                   | 714 97   | 698 142  | 669 183  | 629 219  |
|                                                                                           | Normal                | 341 CFM/ton     | ON                 | ON  | OFF | OFF | CFM Watts     | 801 61                   | 815 116  | 812 167  | 792 216  | 756 262  |
|                                                                                           | High                  | 384 CFM/ton     | ON                 | ON  | ON  | OFF | CFM Watts     | 890 76                   | 922 136  | 933 195  | 922 252  | 890 308  |
| 3                                                                                         | Low                   | 319 CFM/ton     | OFF                | ON  | OFF | ON  | CFM Watts     | 887 75                   | 919 135  | 929 194  | 918 251  | 886 306  |
|                                                                                           | Normal                | 363 CFM/ton     | OFF                | ON  | OFF | OFF | CFM Watts     | 1106 135                 | 1149 202 | 1173 272 | 1176 342 | 1160 414 |
|                                                                                           | High                  | 408 CFM/ton     | OFF                | ON  | ON  | OFF | CFM Watts     | 1218 175                 | 1263 249 | 1287 323 | 1291 401 | 1274 480 |
| 3.5                                                                                       | Low                   | 315 CFM/ton     | ON                 | OFF | OFF | ON  | CFM Watts     | 1117 139                 | 1161 207 | 1184 227 | 1188 348 | 1172 420 |
|                                                                                           | Normal                | 357 CFM/ton     | ON                 | OFF | OFF | OFF | CFM Watts     | 1233 179                 | 1277 255 | 1300 331 | 1301 407 | 1281 484 |
|                                                                                           | High                  | 402 CFM/ton     | ON                 | OFF | ON  | OFF | CFM Watts     | 1323 209                 | 1365 294 | 1379 372 | 1365 443 | 1326 505 |
| 4                                                                                         | Low                   | 308 CFM/ton     | OFF                | OFF | OFF | ON  | CFM Watts     | 1223 176                 | 1268 250 | 1291 326 | 1294 403 | 1277 482 |
|                                                                                           | Normal <sup>(a)</sup> | 350 CFM/ton     | OFF                | OFF | OFF | OFF | CFM Watts     | 1317 208                 | 1354 293 | 1378 371 | 1370 441 | 1310 503 |
|                                                                                           | High                  | 394 CFM/ton     | OFF                | OFF | ON  | OFF | CFM Watts     | 1473 281                 | 1493 372 | 1468 435 | 1400 471 | 1294 482 |

<sup>(a)</sup> Factory Default Setting

## Electrical Data

1. See Product Data or Air Handler nameplate for approved combinations of Air Handlers and Heaters.
2. Heater model numbers may have additional suffix digits.

**Table 10. Model — 5TEM6B02AV21SA**

| 5TEM6B02AV21SA Heater Data                |                         |          |       |                         |                          |                             |          |       |                         |                          |                             |
|-------------------------------------------|-------------------------|----------|-------|-------------------------|--------------------------|-----------------------------|----------|-------|-------------------------|--------------------------|-----------------------------|
| 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                                 |                         |          |       | 2.8 <sup>(a)</sup>      | 4                        | 15                          |          |       | 2.8 <sup>(a)</sup>      | 4                        | 15                          |
| BAYHTR1504BRK<br>BAYHTR1504LUG            | 1/1                     | 3.84     | 13100 | 16.0                    | 24                       | 25                          | 2.88     | 9800  | 13.8                    | 21                       | 25                          |
| BAYHTR1505BRK<br>BAYHTR1505LUG            | 1/1                     | 4.80     | 16400 | 20.0                    | 29                       | 30                          | 3.60     | 12300 | 17.3                    | 25                       | 25                          |
| BAYHTR1508BRK<br>BAYHTR1508LUG            | 1/1                     | 7.68     | 26200 | 32.0                    | 44                       | 45                          | 5.76     | 19700 | 27.7                    | 38                       | 40                          |
| BAYHTR1510BRK<br>BAYHTR1510LUG            | 1/1                     | 9.60     | 32800 | 40.0                    | 54                       | 60                          | 7.20     | 24600 | 34.6                    | 47                       | 50                          |
| BAYHTR1517BRK<br>Circuit 1 <sup>(b)</sup> | 2/1                     | 9.60     | 32800 | 40.0                    | 54                       | 60                          | 7.20     | 24600 | 34.6                    | 47                       | 50                          |
| BAYHTR1517BRK<br>Circuit 2                |                         | 4.80     | 16400 | 20.0                    | 25                       | 25                          | 3.60     | 12300 | 17.3                    | 22                       | 25                          |
| BAYHTR3510LUG                             | 1/3                     | 9.60     | 32800 | 23.1                    | 32                       | 35                          | 7.20     | 24600 | 20.0                    | 28                       | 30                          |
| BAYHTR3517LUG                             | 1/3                     | 14.40    | 49100 | 34.6                    | 46                       | 50                          | 10.80    | 36900 | 30.0                    | 41                       | 45                          |

**Table 10. Model — 5TEM6B02AV21SA (continued)**
<sup>(a)</sup> Motor Amps

<sup>(b)</sup> MCA and MOP for circuit 1 contains the motor amps

**Table 11. Model — 5TEM6B03AV21SA**

| 5TEM6B03AV21SA Heater Data                |                            |          |       |                               |                                |                                   |          |       |                               |                                |                                   |
|-------------------------------------------|----------------------------|----------|-------|-------------------------------|--------------------------------|-----------------------------------|----------|-------|-------------------------------|--------------------------------|-----------------------------------|
| Heater Model No.                          | No. of Circuits/<br>Phases | 240 Volt |       |                               |                                |                                   | 208 Volt |       |                               |                                |                                   |
|                                           |                            | Capacity |       | Heater<br>Amps per<br>Circuit | Minimum<br>Circuit<br>Ampacity | Maximum<br>Overload<br>Protection | Capacity |       | Heater<br>Amps per<br>Circuit | Minimum<br>Circuit<br>Ampacity | Maximum<br>Overload<br>Protection |
|                                           |                            | kW       | BTUH  |                               |                                |                                   | kW       | BTUH  |                               |                                |                                   |
| No Heater                                 |                            |          |       | 4.3 <sup>(a)</sup>            | 5                              | 15                                |          |       | 4.3 <sup>(a)</sup>            | 5                              | 15                                |
| BAYHTR1504BRK<br>BAYHTR1504LUG            | 1/1                        | 3.84     | 13100 | 16.0                          | 25                             | 25                                | 2.88     | 9800  | 13.8                          | 23                             | 25                                |
| BAYHTR1505BRK<br>BAYHTR1505LUG            | 1/1                        | 4.80     | 16400 | 20.0                          | 30                             | 30                                | 3.60     | 12300 | 17.3                          | 27                             | 30                                |
| BAYHTR1508BRK<br>BAYHTR1508LUG            | 1/1                        | 7.68     | 26200 | 32.0                          | 45                             | 45                                | 5.76     | 19700 | 27.7                          | 40                             | 40                                |
| BAYHTR1510BRK<br>BAYHTR1510LUG            | 1/1                        | 9.60     | 32800 | 40.0                          | 55                             | 60                                | 7.20     | 24600 | 34.6                          | 49                             | 50                                |
| BAYHTR1517BRK<br>Circuit 1 <sup>(b)</sup> | 2/1                        | 9.60     | 32800 | 40.0                          | 55                             | 60                                | 7.20     | 24600 | 34.6                          | 49                             | 50                                |
| BAYHTR1517BRK<br>Circuit 2                |                            | 4.80     | 16400 | 20.0                          | 25                             | 25                                | 3.60     | 12300 | 17.3                          | 22                             | 25                                |
| BAYHTR3510LUG                             | 1/3                        | 9.60     | 32800 | 23.1                          | 34                             | 35                                | 7.20     | 24600 | 20.0                          | 30                             | 30                                |
| BAYHTR3517LUG                             | 1/3                        | 14.40    | 49100 | 34.6                          | 48                             | 50                                | 10.80    | 36900 | 30.0                          | 42                             | 45                                |

<sup>(a)</sup> Motor Amps

<sup>(b)</sup> MCA and MOP for circuit 1 contains the motor amps

**Table 12. Models — 5TEM6D04AV31SA/5TEM6D05AV41SA**

| 5TEM6D04AV31SA/5TEM6D05AV41SA Heater Data |                            |          |       |                               |                                |                                   |          |       |                               |                                |                                   |
|-------------------------------------------|----------------------------|----------|-------|-------------------------------|--------------------------------|-----------------------------------|----------|-------|-------------------------------|--------------------------------|-----------------------------------|
| Heater Model No.                          | No. of Circuits/<br>Phases | 240 Volt |       |                               |                                |                                   | 208 Volt |       |                               |                                |                                   |
|                                           |                            | Capacity |       | Heater<br>Amps per<br>Circuit | Minimum<br>Circuit<br>Ampacity | Maximum<br>Overload<br>Protection | Capacity |       | Heater<br>Amps per<br>Circuit | Minimum<br>Circuit<br>Ampacity | Maximum<br>Overload<br>Protection |
|                                           |                            | kW       | BTUH  |                               |                                |                                   | kW       | BTUH  |                               |                                |                                   |
| No Heater                                 |                            |          |       | 4.3 <sup>(a)</sup>            | 5                              | 15                                |          |       | 4.3 <sup>(a)</sup>            | 5                              | 15                                |
| BAYHTR1504BRK<br>BAYHTR1504LUG            | 1/1                        | 3.84     | 13100 | 16.0                          | 25                             | 25                                | 2.88     | 9800  | 13.8                          | 23                             | 25                                |
| BAYHTR1505BRK<br>BAYHTR1505LUG            | 1/1                        | 4.80     | 16400 | 20.0                          | 30                             | 30                                | 3.60     | 12300 | 17.3                          | 27                             | 30                                |
| BAYHTR1508BRK<br>BAYHTR1508LUG            | 1/1                        | 7.68     | 26200 | 32.0                          | 45                             | 45                                | 5.76     | 19700 | 27.7                          | 40                             | 40                                |
| BAYHTR1510BRK<br>BAYHTR1510LUG            | 1/1                        | 9.60     | 32800 | 40.0                          | 55                             | 60                                | 7.20     | 24600 | 34.6                          | 49                             | 50                                |
| BAYHTR1517BRK<br>Circuit 1 <sup>(b)</sup> | 2/1                        | 9.60     | 32800 | 40.0                          | 55                             | 60                                | 7.20     | 24600 | 34.6                          | 49                             | 50                                |
| BAYHTR1517BRK<br>Circuit 2                |                            | 4.80     | 16400 | 20.0                          | 25                             | 25                                | 3.60     | 12300 | 17.3                          | 22                             | 25                                |
| BAYHTR1523BRK<br>Circuit 1 <sup>(b)</sup> | 2/1                        | 9.60     | 32800 | 40.0                          | 55                             | 60                                | 7.20     | 24600 | 34.6                          | 49                             | 50                                |
| BAYHTR1523BRK<br>Circuit 2                |                            | 9.60     | 32800 | 40.0                          | 50                             | 50                                | 7.20     | 24600 | 34.6                          | 43                             | 45                                |
| BAYHTR3510LUG                             | 1/3                        | 9.60     | 32800 | 23.1                          | 34                             | 35                                | 7.20     | 24600 | 20.0                          | 30                             | 30                                |
| BAYHTR3517LUG                             | 1/3                        | 14.40    | 49100 | 34.6                          | 48                             | 50                                | 10.80    | 36900 | 30.0                          | 42                             | 45                                |

<sup>(a)</sup> Motor Amps

<sup>(b)</sup> MCA and MOP for circuit 1 contains the motor amps



## Performance and Electrical Data

**Table 13. Models — 5TEM6D06AV41SA/5TEM6D07AV51SA**

| 5TEM6D06AV41SA/5TEM6D07AV51SA Heater Data |                            |          |       |                               |                                |                                   |          |       |                               |                                |                                   |
|-------------------------------------------|----------------------------|----------|-------|-------------------------------|--------------------------------|-----------------------------------|----------|-------|-------------------------------|--------------------------------|-----------------------------------|
| Heater Model No.                          | No. of Circuits/<br>Phases | 240 Volt |       |                               |                                |                                   | 208 Volt |       |                               |                                |                                   |
|                                           |                            | Capacity |       | Heater<br>Amps per<br>Circuit | Minimum<br>Circuit<br>Ampacity | Maximum<br>Overload<br>Protection | Capacity |       | Heater<br>Amps per<br>Circuit | Minimum<br>Circuit<br>Ampacity | Maximum<br>Overload<br>Protection |
|                                           |                            | kW       | BTUH  |                               |                                |                                   | kW       | BTUH  |                               |                                |                                   |
| No Heater                                 |                            |          |       | 6.8 <sup>(a)</sup>            | 9                              | 15                                |          |       | 6.8 <sup>(a)</sup>            | 9                              | 15                                |
| BAYHTR1504BRK<br>BAYHTR1504LUG            | 1/1                        | 3.84     | 13100 | 16.0                          | 29                             | 30                                | 2.88     | 9800  | 13.8                          | 26                             | 30                                |
| BAYHTR1505BRK<br>BAYHTR1505LUG            | 1/1                        | 4.80     | 16400 | 20.0                          | 34                             | 35                                | 3.60     | 12300 | 17.3                          | 30                             | 30                                |
| BAYHTR1508BRK<br>BAYHTR1508LUG            | 1/1                        | 7.68     | 26200 | 32.0                          | 49                             | 50                                | 5.76     | 19700 | 27.7                          | 43                             | 45                                |
| BAYHTR1510BRK<br>BAYHTR1510LUG            | 1/1                        | 9.60     | 32800 | 40.0                          | 59                             | 60                                | 7.20     | 24600 | 34.6                          | 52                             | 60                                |
| BAYHTR1517BRK<br>Circuit 1 <sup>(b)</sup> | 2/1                        | 9.60     | 32800 | 40.0                          | 59                             | 60                                | 7.20     | 24600 | 34.6                          | 52                             | 60                                |
| BAYHTR1517BRK<br>Circuit 2                |                            | 4.80     | 16400 | 20.0                          | 25                             | 25                                | 3.60     | 12300 | 17.3                          | 22                             | 25                                |
| BAYHTR1523BRK<br>Circuit 1 <sup>(b)</sup> | 2/1                        | 9.60     | 32800 | 40.0                          | 59                             | 60                                | 7.20     | 24600 | 34.6                          | 52                             | 60                                |
| BAYHTR1523BRK<br>Circuit 2                |                            | 9.60     | 32800 | 40.0                          | 50                             | 50                                | 7.20     | 24600 | 34.6                          | 43                             | 45                                |
| BAYHTR1525BRK<br>Circuit 1 <sup>(b)</sup> | 4/1                        | 6.00     | 20500 | 25.0                          | 40                             | 40                                | 4.50     | 15400 | 21.6                          | 36                             | 40                                |
| BAYHTR1525BRK<br>Circuit 2                |                            | 6.00     | 20500 | 25.0                          | 31                             | 35                                | 4.50     | 15400 | 21.6                          | 27                             | 30                                |
| BAYHTR1525BRK<br>Circuit 3                |                            | 6.00     | 20500 | 25.0                          | 31                             | 35                                | 4.50     | 15400 | 21.6                          | 27                             | 30                                |
| BAYHTR1525BRK<br>Circuit 4                |                            | 6.00     | 20500 | 25.0                          | 31                             | 35                                | 4.50     | 15400 | 21.6                          | 27                             | 30                                |
| BAYHTR3510LUG                             | 1/3                        | 9.60     | 32800 | 23.1                          | 36                             | 40                                | 7.20     | 24600 | 20.0                          | 33                             | 35                                |
| BAYHTR3517LUG                             | 1/3                        | 14.40    | 49100 | 34.6                          | 51                             | 60                                | 10.80    | 36900 | 30.0                          | 45                             | 45                                |

<sup>(a)</sup> Motor Amps

<sup>(b)</sup> MCA and MOP for circuit 1 contains the motor amps



# Minimum Airflow CFM

**Table 14. Models – 5TEM6B02AV21SA and 5TEM6B03AV21SA**

| Heater                                                     | Minimum Heater Airflow CFM |                   |
|------------------------------------------------------------|----------------------------|-------------------|
|                                                            | With Heat Pump             | Without Heat Pump |
| BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG | 660                        | 500               |
| BAYHTR1508BRK, BAYHTR1508LUG                               | 780                        | 600               |
| BAYHTR1510BRK, BAYHTR1510LUG                               | 780                        | 600               |
| BAYHTR1517BRK                                              | 1050                       | 850               |
| BAYHTR3510LUG                                              | 780                        | 600               |
| BAYHTR3517LUG                                              | 900                        | 850               |

**Table 15. Models – 5TEM6D04AV31SA and 5TEM6D05AV41SA**

| Heater                                                     | Minimum Heater Airflow CFM |                   |
|------------------------------------------------------------|----------------------------|-------------------|
|                                                            | With Heat Pump             | Without Heat Pump |
| BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG | 875                        | 675               |
| BAYHTR1508BRK, BAYHTR1508LUG                               | 950                        | 820               |
| BAYHTR1510BRK, BAYHTR1510LUG                               | 1000                       | 820               |
| BAYHTR1517BRK                                              | 1000                       | 820               |
| BAYHTR3510LUG                                              | 875                        | 820               |
| BAYHTR3517LUG                                              | 1000                       | 950               |
| BAYHTR1523BRK                                              | 1300                       | 1140              |

**Table 16. Models – 5TEM6D06AV41SA and 5TEM6D07AV51SA**

| Heater                                                     | Minimum Heater Airflow CFM |                   |
|------------------------------------------------------------|----------------------------|-------------------|
|                                                            | With Heat Pump             | Without Heat Pump |
| BAYHTR1504BRK, BAYHTR1504LUG, BAYHTR1505BRK, BAYHTR1505LUG | 1200                       | 975               |
| BAYHTR1508BRK, BAYHTR1508LUG                               | 1350                       | 975               |
| BAYHTR1510BRK, BAYHTR1510LUG                               | 1350                       | 975               |
| BAYHTR1517BRK                                              | 1365                       | 975               |
| BAYHTR3510LUG                                              | 1300                       | 975               |
| BAYHTR3517LUG                                              | 1365                       | 1120              |
| BAYHTR1523BRK                                              | 1365                       | 1300              |
| BAYHTR1525BRK                                              | 1810                       | 1505              |

**Notes:** See following tables for heater application:

- Pressure Drop for Electrical Heaters
- Minimum Heating Airflow Matrix (on unit nameplates)

**Table 17. Airflow performance with auxiliary heat - models 5TEM6B02AV21SA and 5TEM6B03AV21SA**

| Airflow Settings | DIP Switch Settings |          | Nominal Airflow |
|------------------|---------------------|----------|-----------------|
|                  | Switch 7            | Switch 8 |                 |
| Low              | ON                  | ON       | 601             |
| Med-Lo           | OFF                 | ON       | 661             |
| Med-Hi           | ON                  | OFF      | 781             |
| High             | OFF                 | OFF      | 973             |

**Table 18. Airflow performance with auxiliary heat - models 5TEM6D04AV31SA and 5TEM6D05AV41SA**

| Airflow Settings | DIP Switch Settings |          | Nominal Airflow |
|------------------|---------------------|----------|-----------------|
|                  | Switch 7            | Switch 8 |                 |
| Low              | ON                  | ON       | 696             |
| Med-Lo           | OFF                 | ON       | 825             |
| Med-Hi           | ON                  | OFF      | 1150            |
| High             | OFF                 | OFF      | 1298            |

**Table 19. Airflow performance with auxiliary heat - models 5TEM6D06AV41SA and 5TEM6D07AV51SA**

| Airflow Settings | DIP Switch Settings |          | Nominal Airflow |
|------------------|---------------------|----------|-----------------|
|                  | Switch 7            | Switch 8 |                 |
| Low              | ON                  | ON       | 1000            |
| Med-Lo           | OFF                 | ON       | 1130            |



## Minimum Airflow CFM

Table 19. Airflow performance with auxiliary heat - models 5TEM6D06AV41SA and 5TEM6D07AV51SA (continued)

| Airflow Settings | DIP Switch Settings |          | Nominal Airflow |
|------------------|---------------------|----------|-----------------|
|                  | Switch 7            | Switch 8 |                 |
| Med-Hi           | ON                  | OFF      | 1354            |
| High             | OFF                 | OFF      | 1596            |

[illegible]

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# Field Wiring Diagrams

Figure 2. Field wiring diagrams

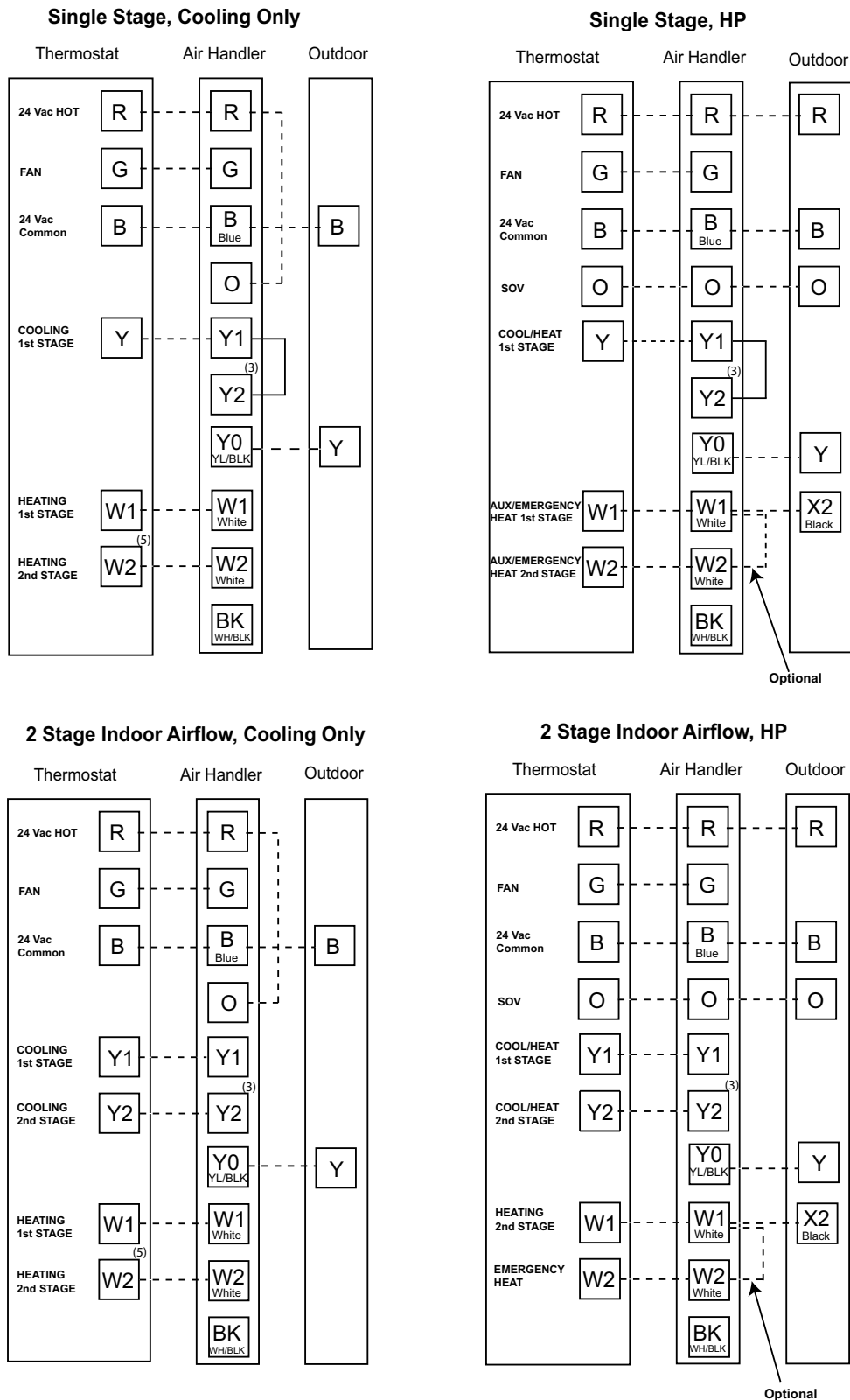
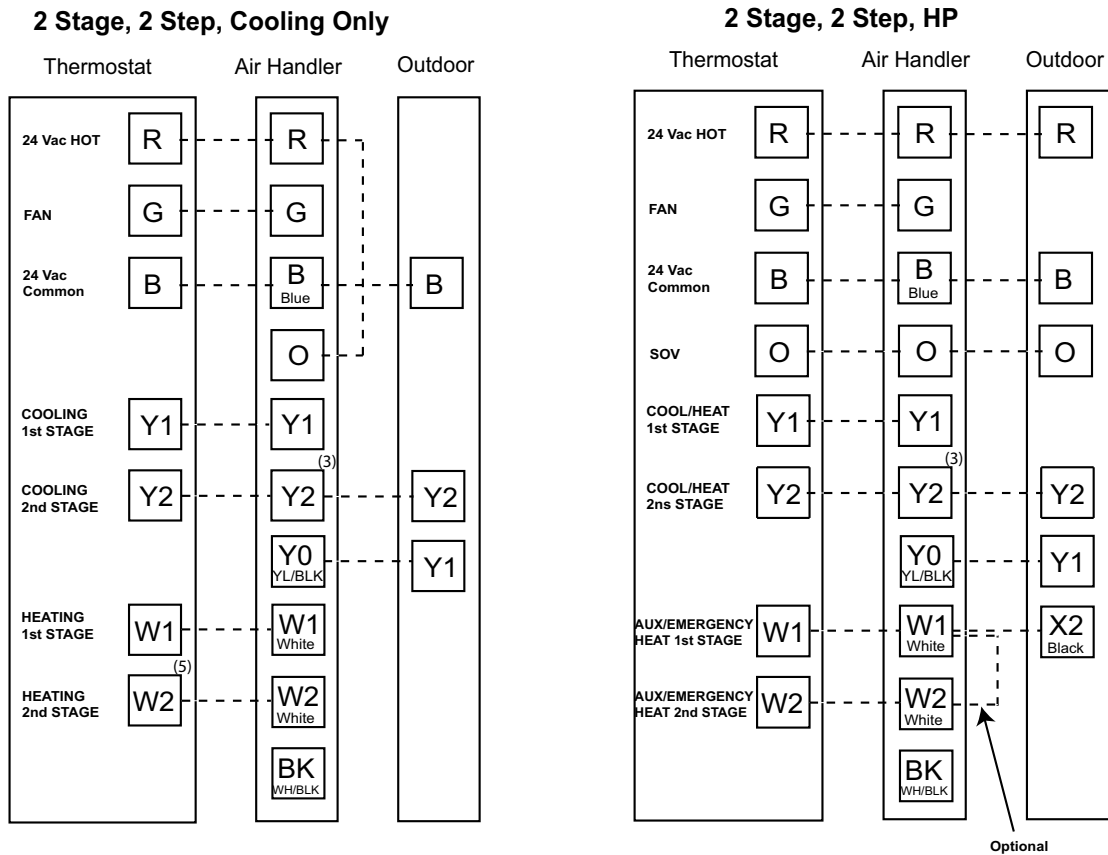


**Figure 3. Field wiring diagrams**


1. Units with pigtails require wirenuts for connections.
2. Cap all unused wires.
3. When BK is used with PWM-enabled Comfort Control, do not connect Y2 at the air handler.
4. When BK is used, cut the jumper between R and BK on the control board. See wiring schematic for details.
5. In AC systems for multiple stages of electric heat, jumper W1 and W2 together if comfort control has only one stage of heat.

## External Switches and Accessories

The following optional connections are available on the mitigation control board (see connection diagrams [Figure 4, p. 18](#)):

- 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.

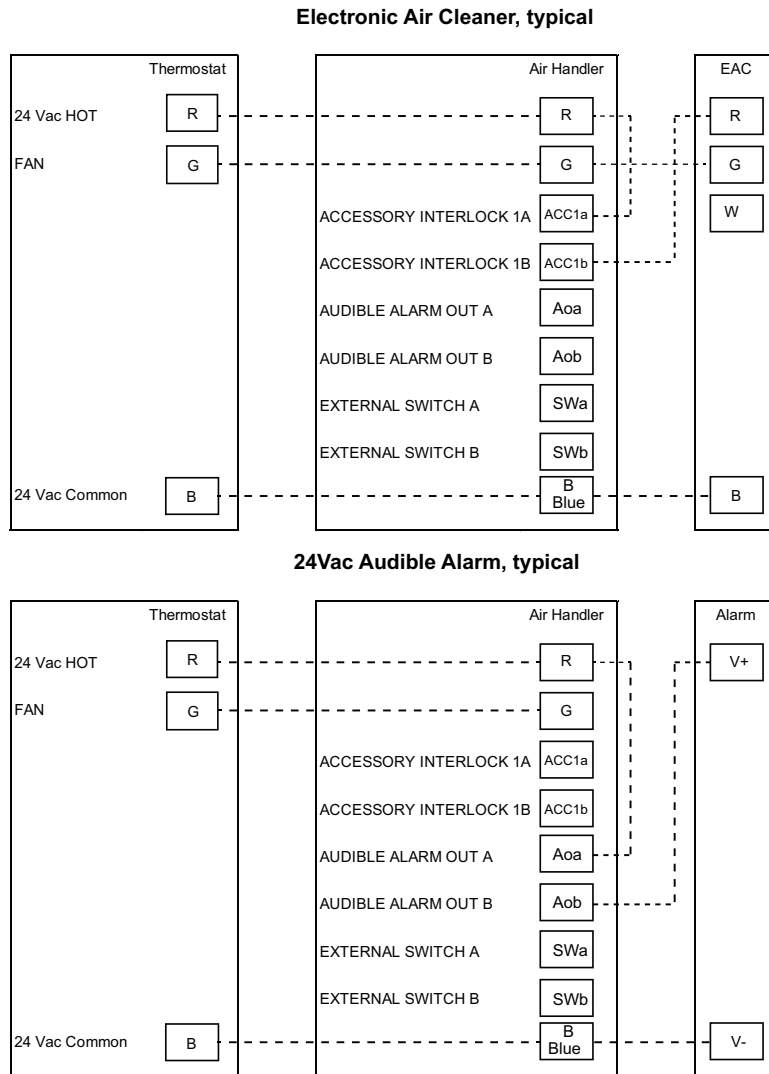
Connect using field-supplied 3/16-in. (Aoa/Aob) or 1/4-in. (ACC1, ACC2) female spade connections.

Figure 4. Accessories diagram



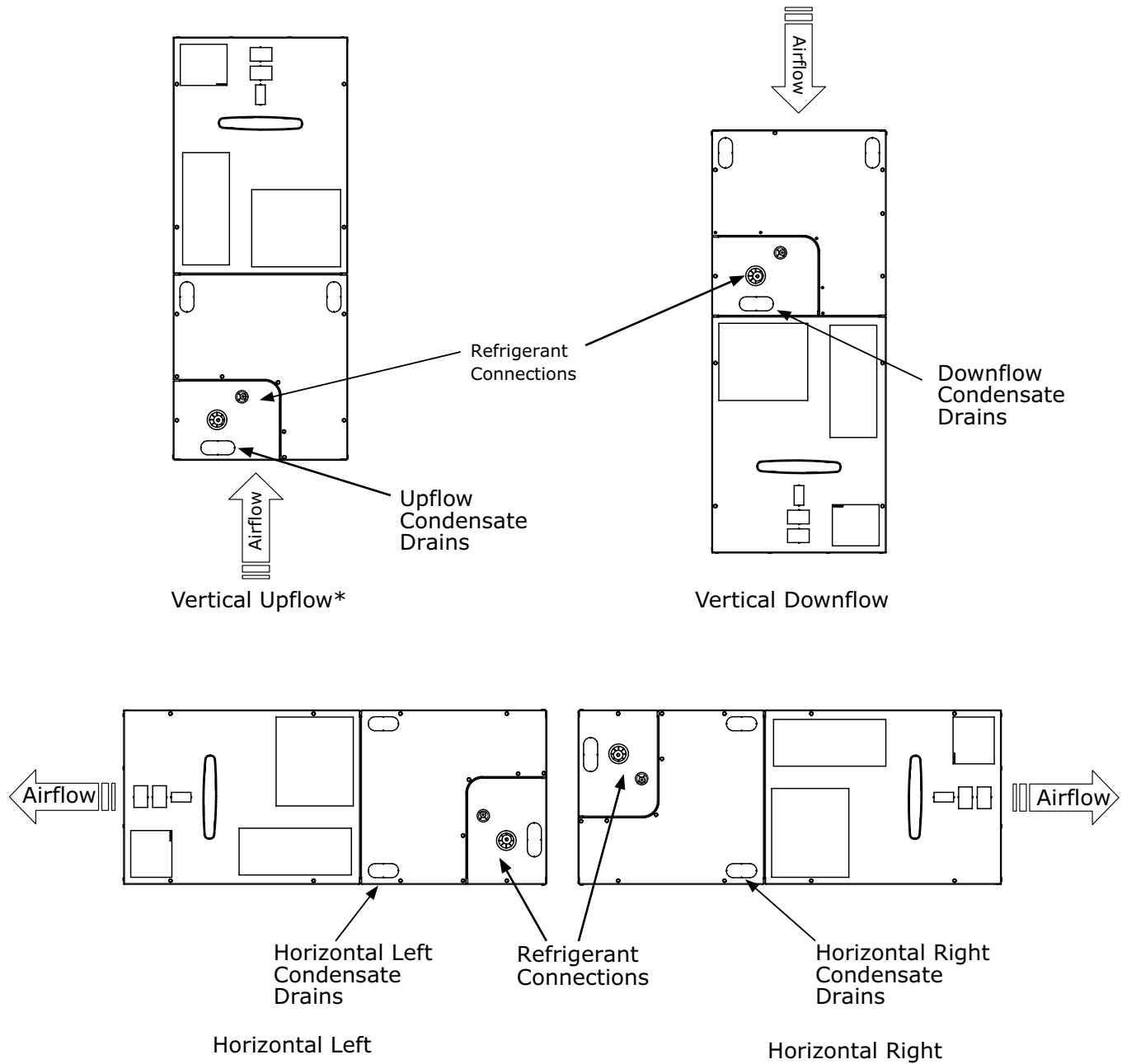
## SCAN ME

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



# Unit Convertibility

Figure 5. Multi-position air handler  
 \* = No internal modifications required.



# Dimensional Data

Figure 6. Dimensional data

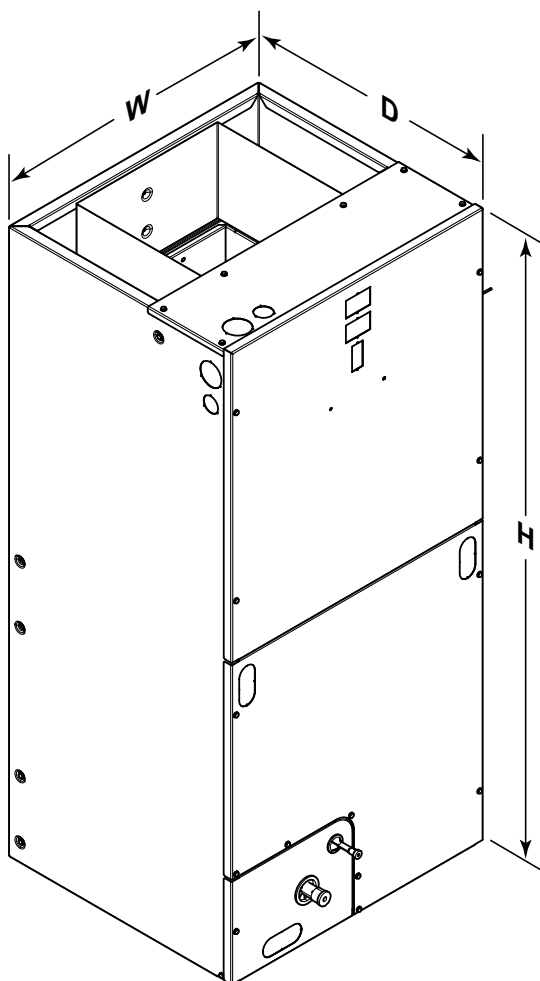
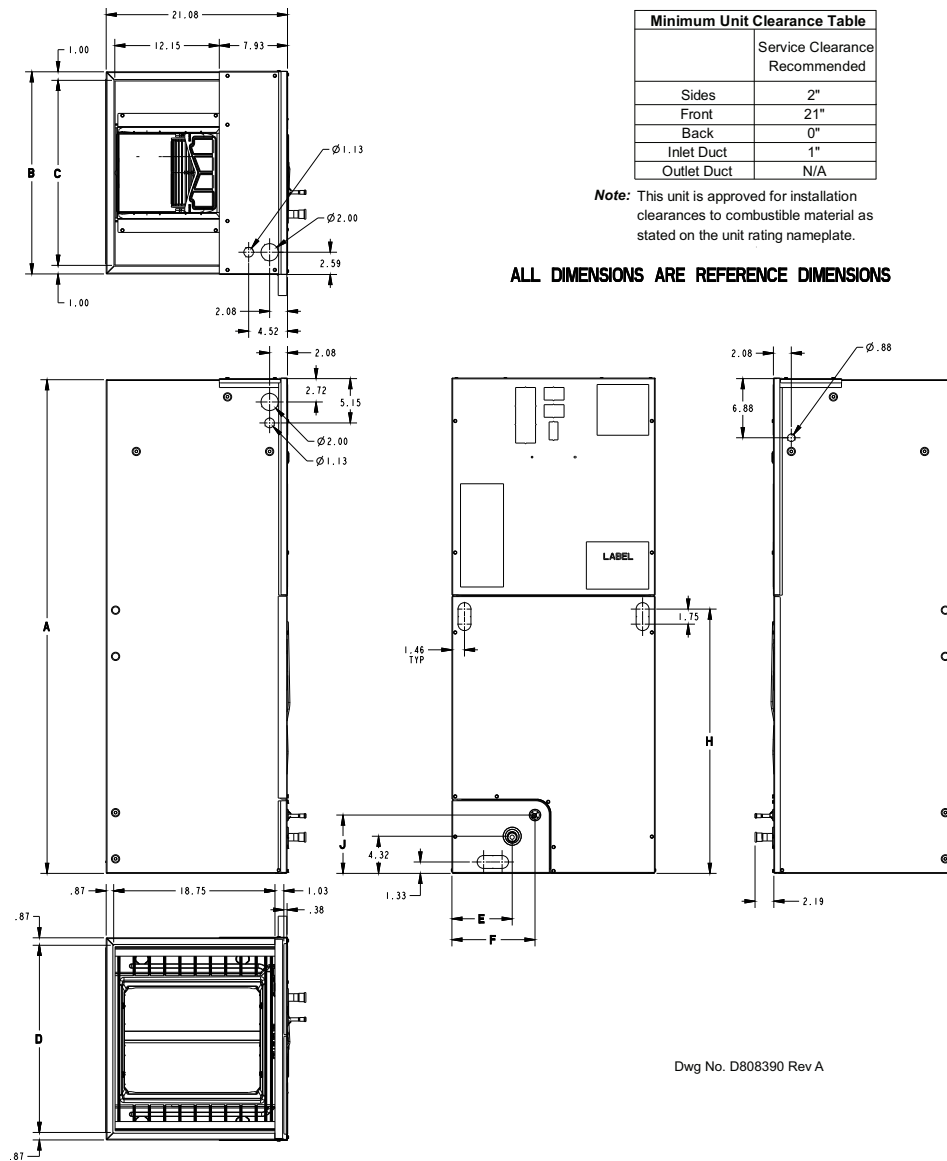


Table 20. Dimensions (inches)

| Model No.      | H     | W     | D     |
|----------------|-------|-------|-------|
| 5TEM6B02AV21SA | 46.77 | 18.50 | 21.13 |
| 5TEM6B03AV21SA | 46.77 | 18.50 | 21.13 |
| 5TEM6D04AV31SA | 51.27 | 23.50 | 21.13 |
| 5TEM6D05AV41SA | 51.27 | 23.50 | 21.13 |
| 5TEM6D06AV41SA | 57.40 | 23.50 | 21.13 |
| 5TEM6D07AV51SA | 57.40 | 23.50 | 21.13 |

**Figure 7. Dimensions**

**Table 21. Dimensions (inches)**

| Air Handler Model | A     | B     | C     | D     | E    | F    | H     | J    | Flow Control | Gas Line Braze |
|-------------------|-------|-------|-------|-------|------|------|-------|------|--------------|----------------|
| 5TEM6B02, 03      | 46.77 | 18.50 | 16.50 | 16.75 | 5.43 | 7.08 | 20.07 | 5.76 | TXV          | 3/4            |
| 5TEM6D04, D05     | 51.27 | 23.50 | 21.50 | 21.75 | 7.01 | 9.66 | 24.58 | 6.76 | TXV          | 7/8            |
| 5TEM6D06, D07     | 57.40 | 23.50 | 21.50 | 21.75 | 7.01 | 9.66 | 30.71 | 6.76 | TXV          | 7/8            |







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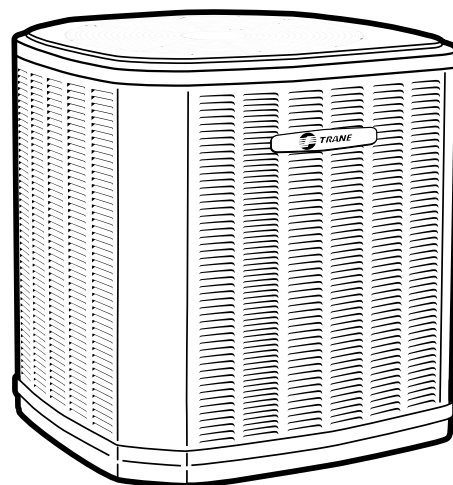
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# Product and Submittal Data

## Split System Heat Pump

5TWA4036A3000A  
5TWA4042A3000A  
5TWA4048A3000A  
5TWA4060A3000A  
5TWA4036A4000A  
5TWA4042A4000A  
5TWA4048A4000A  
5TWA4060A4000A



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



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# Data Notes

This document supersedes and includes data from the documents listed below.

Table 1. Data notes

| Literature Number   | Title                                                          |
|---------------------|----------------------------------------------------------------|
| 22-2003-1*-EN       | Split System Heat Pump Product Data                            |
| 5TWA4036A-SUB-3*-EN | Split System Heat Pump 208-230V Model 5TWA4036A3000A Submittal |
| 5TWA4036A-SUB-4*-EN | Split System Heat Pump 460V Model 5TWA4036A4000A Submittal     |
| 5TWA4042A-SUB-3*-EN | Split System Heat Pump 208-230V Model 5TWA4042A3000A Submittal |
| 5TWA4042A-SUB-4*-EN | Split System Heat Pump 460V Model 5TWA4042A4000A Submittal     |
| 5TWA4048A-SUB-3*-EN | Split System Heat Pump 208-230V Model 5TWA4048A3000A Submittal |
| 5TWA4048A-SUB-4*-EN | Split System Heat Pump 460V Model 5TWA4048A4000A Submittal     |
| 5TWA4060A-SUB-3*-EN | Split System Heat Pump 208-230V Model 5TWA4060A3000A Submittal |
| 5TWA4060A-SUB-4*-EN | Split System Heat Pump 460V Model 5TWA4060A4000A Submittal     |



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# Product Specifications

**Table 2. 3-Phase, 208/230V**

| <b>OUTDOOR UNIT</b> <sup>(a) (b)</sup>      | 5TWA4036A3000A     | 5TWA4042A3000A     | 5TWA4048A3000A     | 5TWA4060A3000A     |
|---------------------------------------------|--------------------|--------------------|--------------------|--------------------|
| POWER CONNS. - V/PH/HZ <sup>(c)</sup>       | 208/230/3/60       | 208/230/3/60       | 208/230/3/60       | 208/230/3/60       |
| MIN. BRCH. CIR. AMPACITY                    | 16.6               | 18.1               | 18.1               | 22.8               |
| BR. CIR. PROT. RTG. - MAX. (AMPS)           | 25                 | 30                 | 30                 | 35                 |
| <b>COMPRESSOR</b>                           | CLIMATUFF®- SCROLL | CLIMATUFF®- SCROLL | CLIMATUFF®- SCROLL | CLIMATUFF®- SCROLL |
| NO. USED - NO. STAGES                       | 1 - 1              | 1 - 1              | 1 - 1              | 1 - 1              |
| VOLTS/PH/HZ                                 | 200/230/3/60       | 200/230/3/60       | 200/230/3/60       | 200/230/3/60       |
| R.L. AMPS <sup>(d)</sup> - L.R. AMPS        | 12.8 - 97.5        | 12.2 - 102.8       | 12.2 - 120.4       | 16.0 - 156.4       |
| FACTORY INSTALLED                           |                    |                    |                    |                    |
| START COMPONENTS <sup>(e)</sup>             | NO                 | NO                 | NO                 | NO                 |
| INSULATION/SOUND BLANKET                    | NO                 | NO                 | NO                 | NO                 |
| COMPRESSOR HEAT                             | YES                | YES                | YES                | YES                |
| <b>OUTDOOR FAN</b>                          | PROPELLER          | PROPELLER          | PROPELLER          | PROPELLER          |
| DIA. (IN.) - NO. USED                       | 27.5 - 1           | 27.5 - 1           | 27.5 - 1           | 27.5 - 1           |
| TYPE DRIVE - NO. SPEEDS                     | DIRECT - 1         | DIRECT - 1         | DIRECT - 1         | DIRECT - 1         |
| CFM @ 0.0 IN. W.G. <sup>(f)</sup>           | 4230               | 4992               | 4992               | 4992               |
| NO. MOTORS - HP                             | 1 - 1/8            | 1 - 1/3            | 1 - 1/3            | 1 - 1/3            |
| MOTOR SPEED R.P.M.                          | 850                | 850                | 850                | 850                |
| VOLTS/PH/HZ                                 | 200/230/1/60       | 208/230/1/60       | 208/230/1/60       | 208/230/1/60       |
| F.L. AMPS                                   | 0.64               | 2.80               | 2.80               | 2.80               |
| <b>OUTDOOR COIL - TYPE</b>                  | SPINE FIN™         | SPINE FIN™         | SPINE FIN™         | SPINE FIN™         |
| ROWS - F.P.I.                               | 1 - 24             | 2 - 24             | 2 - 24             | 2 - 24             |
| FACE AREA (SQ. FT.)                         | 24                 | 30.8               | 30.8               | 30.8               |
| TUBE SIZE (IN.)                             | 3/8                | 3/8                | 3/8                | 3/8                |
| REFRIGERANT CONTROL                         | EXPANSION VALVE    | EXPANSION VALVE    | EXPANSION VALVE    | EXPANSION VALVE    |
| <b>REFRIGERANT</b>                          |                    |                    |                    |                    |
| LBS. - R-454B (O.D. UNIT) <sup>(g)</sup>    | 5 LBS., 10 OZ      | 7 LBS., 14 OZ      | 8 LBS., 9 OZ       | 8 LBS., 6 OZ       |
| FACTORY SUPPLIED                            | YES                | YES                | YES                | YES                |
| LINE SIZE - IN. O.D. GAS <sup>(h) (i)</sup> | 3/4                | 7/8                | 7/8                | 7/8                |
| LINE SIZE - IN. O.D. LIQ.                   | 5/16               | 5/16               | 5/16               | 5/16               |
| <b>CHARGING SPECIFICATIONS</b>              |                    |                    |                    |                    |
| SUBCOOLING                                  | 10°F               | 10°F               | 10°F               | 10°F               |
| <b>DIMENSIONS</b>                           | H x W x D          | H x W x D          | H x W x D          | H x W x D          |
| CRATED (IN.)                                | 38.5 x 35 x 37.9   | 50.5 x 35 x 37.9   | 50.5 x 35 x 37.9   | 50.5 x 35 x 37.9   |
| <b>WEIGHT</b>                               |                    |                    |                    |                    |
| SHIPPING (LBS.)                             | 256                | 301                | 301                | 301                |
| NET (LBS.)                                  | 222                | 251                | 251                | 251                |
| <b>OPTIONAL ACCESSORIES:</b>                |                    |                    |                    |                    |
| ANTI-SHORT CYCLE TIMER                      | TAYASCT501A        | TAYASCT501A        | TAYASCT501A        | TAYASCT501A        |
| EVAPORATOR DEFROST CONTROL                  | NA                 | NA                 | NA                 | NA                 |
| RUBBER ISOLATOR KIT                         | BAYISLT101         | BAYISLT101         | BAYISLT101         | BAYISLT101         |
| EXTREME CONDITION MOUNT KIT                 | BAYECMT004         | BAYECMT004         | BAYECMT004         | BAYECMT004         |
| SOUND ENCLOSURE                             | BAYSDEN003         | BAYSDEN004         | BAYSDEN004         | BAYSDEN004         |
| SEACOAST KIT                                | BAYSEAC001         | BAYSEAC001         | BAYSEAC001         | BAYSEAC001         |
| LOW AMBIENT KIT                             | BAYLOAM107         | BAYLOAM103         | BAYLOAM103         | BAYLOAM103         |
| SERVICE VALVE PANEL COVER                   | TAYSVPANL0044AA    | TAYSVPANL0046AA    | TAYSVPANL0046AA    | TAYSVPANL0046AA    |
| REFRIGERANT LINESET <sup>(j)</sup>          |                    |                    |                    |                    |

<sup>(a)</sup> Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.

<sup>(b)</sup> Rated in accordance with AHRI standard 270.

<sup>(c)</sup> Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.

<sup>(d)</sup> This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.

**Table 2. 3-Phase, 208/230V (continued)**

- (e) No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter. Optional kit shown.
- (f) Standard Air - Dry Coil - Outdoor
- (g) This value approximate. For more precise value see unit nameplate.
- (h) Reference the outdoor unit ship-with literature for refrigerant piping length and lift guidelines. Reference the *refrigerant piping software pub # 32-3312-xx* or *refrigerant piping application guide* (SS-APG006-xx) for long line sets or specialty applications (xx denotes latest revision).
- (i) The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. Always verify proper system charge via subcooling (TXV/EEV) or superheat (fixed orifice) per the unit nameplate.
- (j) 25, 30, 35 and 50 foot linesets available. For a complete listing of lineset options available from equipment or supply stores, refer to the Trane Residential and Light Commercial Product Handbook.

**Table 3. 4-Phase, 460V**

| <b>OUTDOOR UNIT</b> (a) (b)       | 5TWA4036A4000A     | 5TWA4042A4000A     | 5TWA4048A4000A     | 5TWA4060A4000A     |
|-----------------------------------|--------------------|--------------------|--------------------|--------------------|
| POWER CONNS. - V/PH/HZ (c)        | 460/3/60           | 460/3/60           | 460/3/60           | 460/3/60           |
| MIN. BRCH. CIR. AMPACITY          | 6.8                | 8.6                | 9.4                | 11                 |
| BR. CIR. PROT. RTG. - MAX. (AMPS) | 15                 | 15                 | 15                 | 15                 |
| <b>COMPRESSOR</b>                 | CLIMATUFF®- SCROLL | CLIMATUFF®- SCROLL | CLIMATUFF®- SCROLL | CLIMATUFF®- SCROLL |
| NO. USED - NO. STAGES             | 1 - 1              | 1 - 1              | 1 - 1              | 1 - 1              |
| VOLTS/PH/HZ                       | 460/3/60           | 460/3/60           | 460/3/60           | 460/3/60           |
| R.L. AMPS (d) - L.R. AMPS         | 5.1 - 44.3         | 5.8 - 50.0         | 6.4 - 50.0         | 7.7 - 69.0         |
| FACTORY INSTALLED                 |                    |                    |                    |                    |
| START COMPONENTS (e)              | NO                 | NO                 | NO                 | NO                 |
| INSULATION/SOUND BLANKET          | NO                 | NO                 | NO                 | NO                 |
| COMPRESSOR HEAT                   | YES                | YES                | YES                | YES                |
| <b>OUTDOOR FAN</b>                | PROPELLER          | PROPELLER          | PROPELLER          | PROPELLER          |
| DIA. (IN.) - NO. USED             | 27.5 - 1           | 27.5 - 1           | 27.5 - 1           | 27.5 - 1           |
| TYPE DRIVE - NO. SPEEDS           | DIRECT - 1         | DIRECT - 1         | DIRECT - 1         | DIRECT - 1         |
| CFM @ 0.0 IN. W.G. (f)            | 4230               | 4992               | 4992               | 4992               |
| NO. MOTORS - HP                   | 1 - 1/8            | 1 - 1/3            | 1 - 1/3            | 1 - 1/3            |
| MOTOR SPEED R.P.M.                | 825                | 850                | 850                | 850                |
| VOLTS/PH/HZ                       | 460/1/60           | 460/1/60           | 460/1/60           | 460/1/60           |
| F.L. AMPS                         | 0.38               | 1.4                | 1.4                | 1.4                |
| <b>OUTDOOR COIL - TYPE</b>        | SPINE FIN™         | SPINE FIN™         | SPINE FIN™         | SPINE FIN™         |
| ROWS - F.P.I.                     | 1 - 24             | 2 - 24             | 2 - 24             | 2 - 24             |
| FACE AREA (SQ. FT.)               | 24                 | 30.8               | 30.8               | 30.8               |
| TUBE SIZE (IN.)                   | 3/8                | 3/8                | 3/8                | 3/8                |
| REFRIGERANT CONTROL               | EXPANSION VALVE    | EXPANSION VALVE    | EXPANSION VALVE    | EXPANSION VALVE    |
| <b>REFRIGERANT</b>                |                    |                    |                    |                    |
| LBS. - R-454B (O.D. UNIT) (g)     | 5 LBS., 10 OZ      | 7 LBS., 14 OZ      | 8 LBS., 9 OZ       | 8 LBS., 6 OZ       |
| FACTORY SUPPLIED                  | YES                | YES                | YES                | YES                |
| LINE SIZE - IN. O.D. GAS (h) (i)  | 3/4                | 7/8                | 7/8                | 7/8                |
| LINE SIZE - IN. O.D. LIQ.         | 5/16               | 5/16               | 5/16               | 5/16               |
| <b>CHARGING SPECIFICATIONS</b>    |                    |                    |                    |                    |
| SUBCOOLING                        | 10°F               | 10°F               | 10°F               | 10°F               |
| <b>DIMENSIONS</b>                 | H x W x D          | H x W x D          | H x W x D          | H x W x D          |
| CRATED (IN.)                      | 38.5 x 35 x 37.9   | 50.5 x 35 x 37.9   | 50.5 x 35 x 37.9   | 50.5 x 35 x 37.9   |
| <b>WEIGHT</b>                     |                    |                    |                    |                    |
| SHIPPING (LBS.)                   | 256                | 301                | 301                | 301                |
| NET (LBS.)                        | 222                | 251                | 251                | 251                |
| <b>OPTIONAL ACCESSORIES:</b>      |                    |                    |                    |                    |
| ANTI-SHORT CYCLE TIMER            | TAYASCT501A        | TAYASCT501A        | TAYASCT501A        | TAYASCT501A        |
| EVAPORATOR DEFROST CONTROL        | NA                 | NA                 | NA                 | NA                 |
| RUBBER ISOLATOR KIT               | BAYISLT101         | BAYISLT101         | BAYISLT101         | BAYISLT101         |
| EXTREME CONDITION MOUNT KIT       | BAYECMT004         | BAYECMT004         | BAYECMT004         | BAYECMT004         |
| SOUND ENCLOSURE                   | BAYSDEN003         | BAYSDEN004         | BAYSDEN004         | BAYSDEN004         |



## Product Specifications

**Table 3. 4-Phase, 460V (continued)**

|                                    |                 |                 |                 |                 |
|------------------------------------|-----------------|-----------------|-----------------|-----------------|
| CRANKCASE KIT                      | BAYCCHT302      | BAYCCHT301      | BAYCCHT301      | BAYCCHT301      |
| START KIT                          | BAYKSKT263      | BAYKSKT263      | BAYKSKT263      | BAYKSKT263      |
| SEACOAST KIT                       | BAYSEAC001      | BAYSEAC001      | BAYSEAC001      | BAYSEAC001      |
| LOW AMBIENT KIT                    | BAYLOAM107      | BAYLOAM103      | BAYLOAM103      | BAYLOAM103      |
| SERVICE VALVE PANEL COVER          | TAYSVPANL3343AA | TAYSVPANL0046AA | TAYSVPANL0046AA | TAYSVPANL0046AA |
| REFRIGERANT LINESET <sup>(j)</sup> |                 |                 |                 |                 |

(a) Certified in accordance with the Air-Source Unitary Air-conditioner Equipment certification program, which is based on AHRI standard 210/240.

(b) Rated in accordance with AHRI standard 270.

(c) Calculated in accordance with Natl. Elec. Codes. Use only HACR circuit breakers or fuses.

(d) This value shown for compressor RLA on the unit nameplate and on this specification sheet is used to compute minimum branch circuit ampacity and max. fuse size. The value shown is the branch circuit selection current.

(e) No means no start components. Yes means quick start kit components. PTC means positive temperature coefficient starter. Optional kit shown.

(f) Standard Air - Dry Coil - Outdoor

(g) This value approximate. For more precise value see unit nameplate.

(h) Reference the outdoor unit ship-with literature for refrigerant piping length and lift guidelines. Reference the *refrigerant piping software pub # 32-3312-xx or refrigerant piping application guide (SS-APG006-xx)* for long line sets or specialty applications (xx denotes latest revision).

(i) The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. Always verify proper system charge via subcooling (TXV/EEV) or superheat (fixed orifice) per the unit nameplate.

(j) 25, 30, 35 and 50 foot linesets available. For a complete listing of lineset options available from equipment or supply stores, refer to the Trane Residential and Light Commercial Product Handbook.



# Sound Power Level

Table 4. Sound power level

| Sound Power Level |                                            |                             |        |        |        |         |         |         |         |
|-------------------|--------------------------------------------|-----------------------------|--------|--------|--------|---------|---------|---------|---------|
| MODEL             | A-Weighted<br>Sound Power<br>Level [dB(A)] | Full Octave Sound Power(dB) |        |        |        |         |         |         |         |
|                   |                                            | 63 Hz*                      | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
| 5TWA4036A3        | 76                                         | 78                          | 75     | 77     | 75     | 70      | 64      | 61      | 56      |
| 5TWA4042A3        | 74                                         | 72                          | 72     | 71     | 69     | 70      | 62      | 57      | 52      |
| 5TWA4048A3        | 74                                         | 72                          | 72     | 71     | 69     | 70      | 62      | 57      | 52      |
| 5TWA4060A3        | 76                                         | 78                          | 75     | 77     | 75     | 70      | 64      | 61      | 56      |
| 5TWA4036A4        | 76                                         | 78                          | 75     | 77     | 75     | 70      | 64      | 61      | 56      |
| 5TWA4042A4        | 74                                         | 72                          | 72     | 71     | 69     | 70      | 62      | 57      | 52      |
| 5TWA4048A4        | 74                                         | 72                          | 72     | 71     | 69     | 70      | 62      | 57      | 52      |
| 5TWA4060A4        | 76                                         | 78                          | 75     | 77     | 75     | 70      | 64      | 61      | 56      |

**Note:** Rated in accordance with AHRI Standard 270-2008 \*For reference only.



## Accessory Description and Usage

**Anti-Short Cycle Timer** — Solid state timing device that prevents compressor recycling until five (5) minutes have elapsed after satisfying call or power interruptions. Use in area with questionable power delivery, commercial applications, long lineset, etc.

**Evaporation Defrost Control** — SPST Temperature actuated switch that cycles the condenser off as indoor coil reaches freeze-up conditions. Used for low ambient cooling to 30°F with TXV.

**Rubber Isolators** — Five (5) large rubber donuts to isolate condensing unit from transmitting energy into mounting frame or pad. Use on any application where sound transmission needs to be minimized.

**Extreme Condition Mount Kit** — Bracket kits to securely mount condensing unit to a frame or pad without removing any panels. Use in areas with high winds, or on commercial roof tops, etc.

### AHRI Standard Capacity Rating Conditions

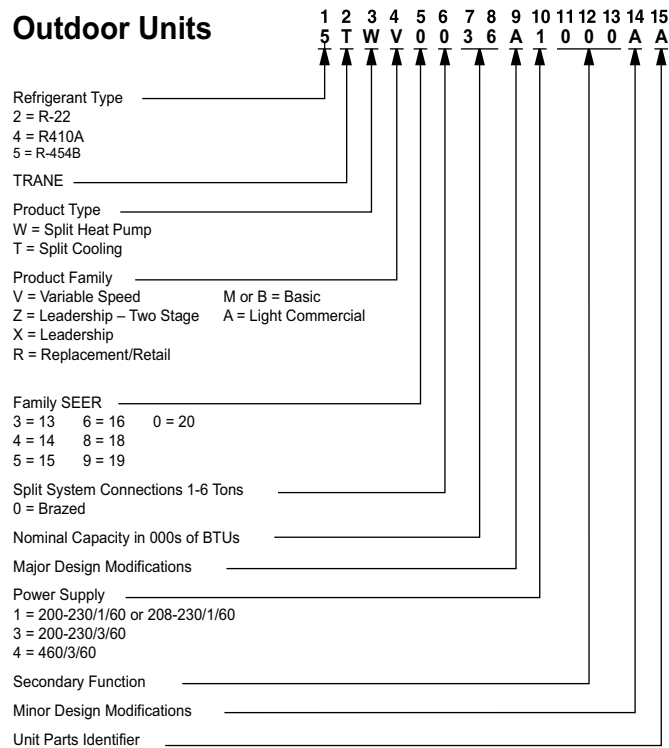
AHRI Standard 210/240 Rating Conditions

1. Cooling 80°F DB, 67°F WB air entering indoor coil, 95°F DB air entering outdoor coil.
2. High Temperature Heating 47°F DB, 43°F WB air entering outdoor coil, 70°F DB air entering indoor coil.
3. Low Temperature Heating 17°F DB air entering outdoor coil.
4. Rated indoor airflow for heating is the same as for cooling.

**AHRI Standard 270 Rating Conditions** — (Noise rating numbers are determined with the unit in cooling operations.) Standard Noise Rating number is at 95°F outdoor air.

## Model Nomenclature

### Outdoor Units



# Wiring Diagram

Figure 1. 036A3 models

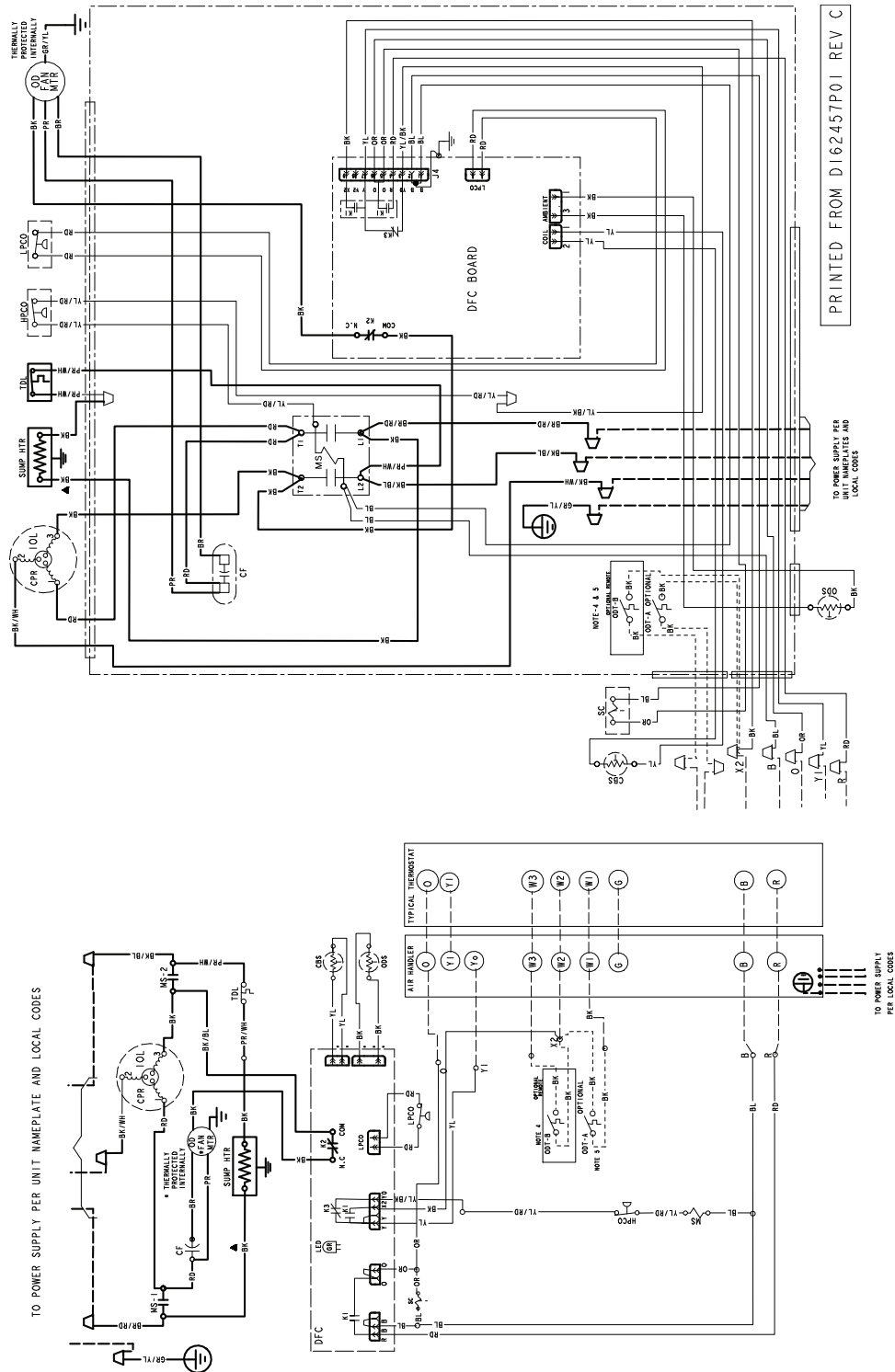
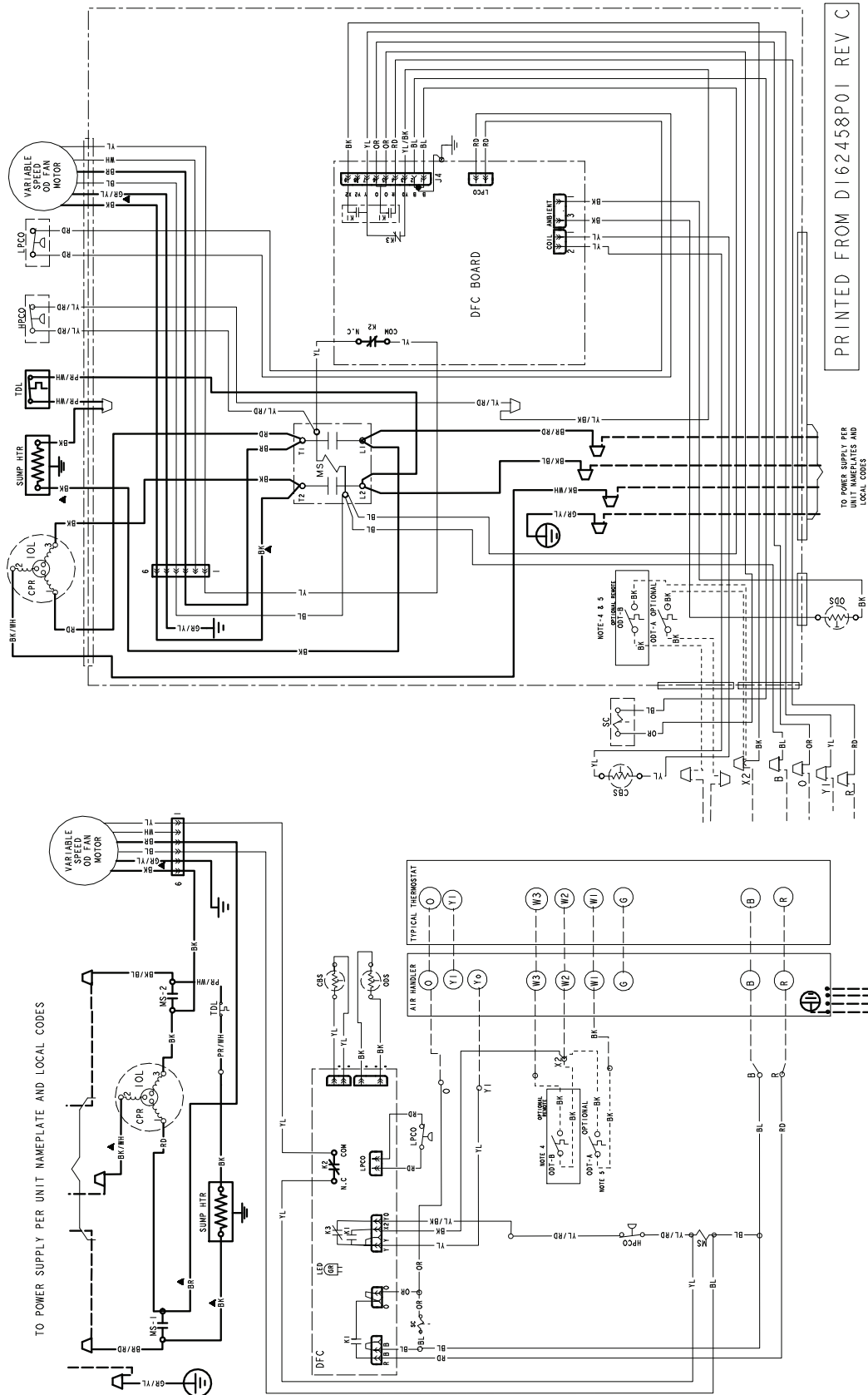
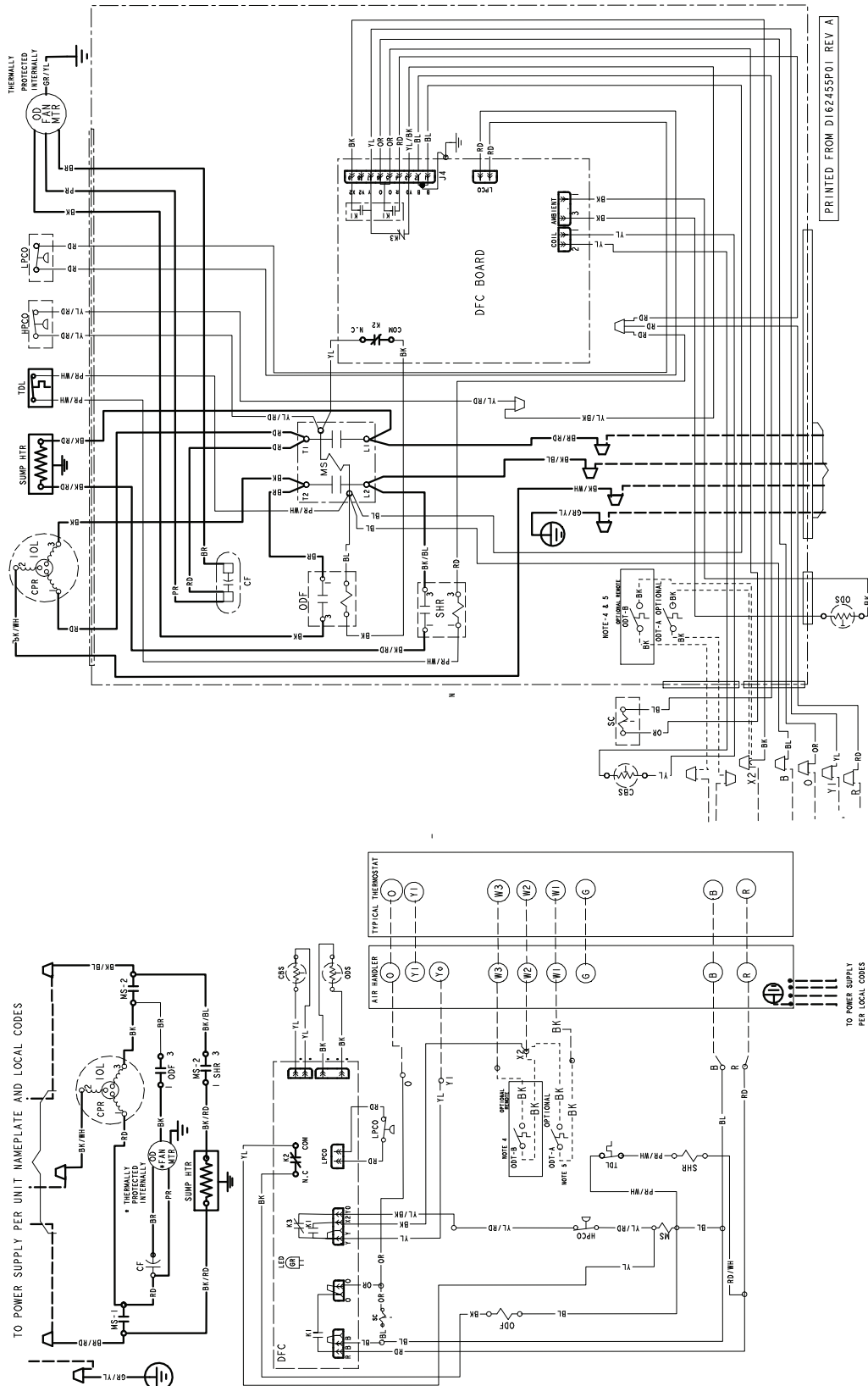


Figure 2. 042A3, 048A3, and 060A3 models



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**Figure 3. 036A4 models**





## Wiring Diagram

Figure 4. 042A4, 048A4, and 060A4 models

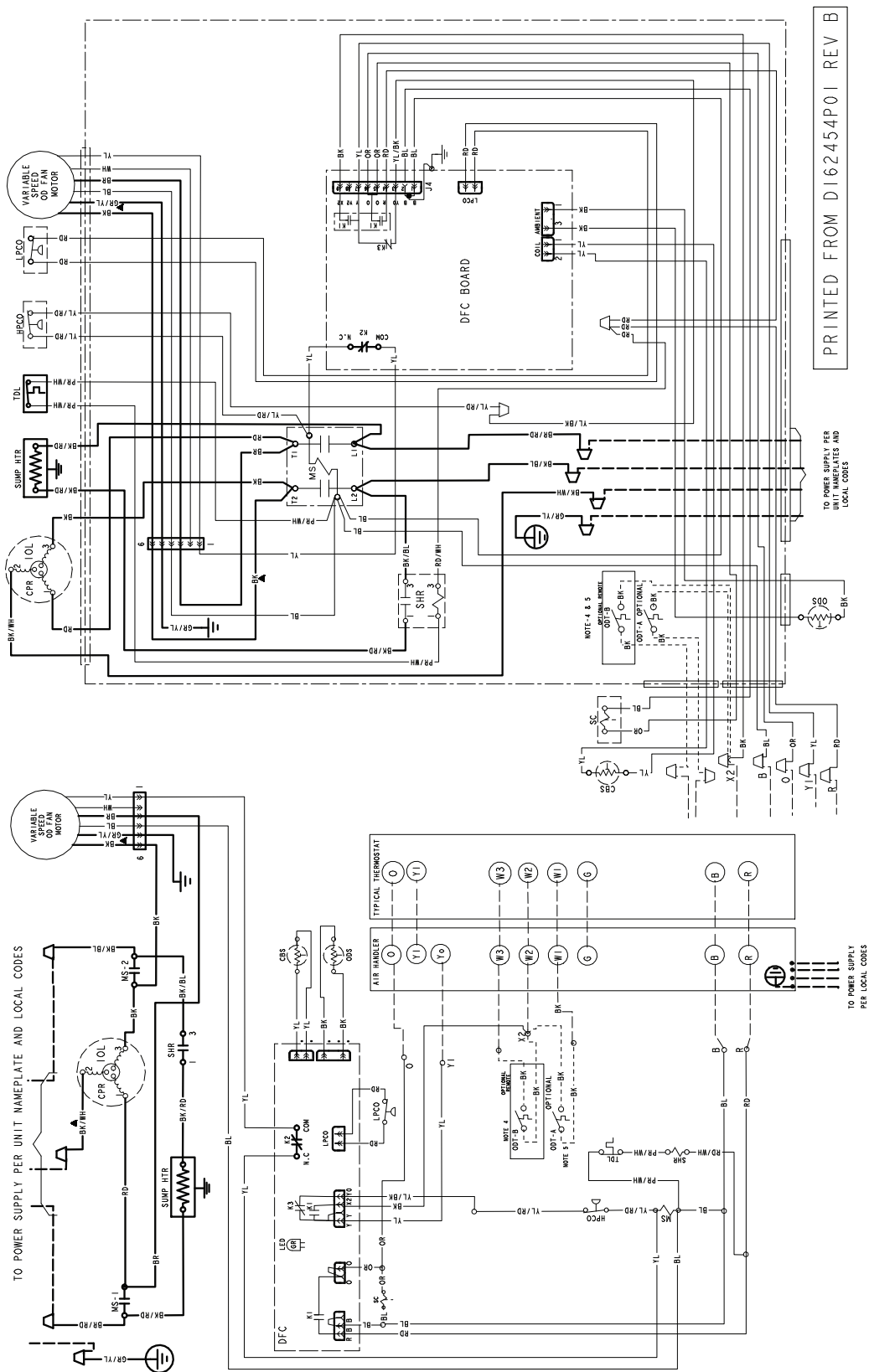
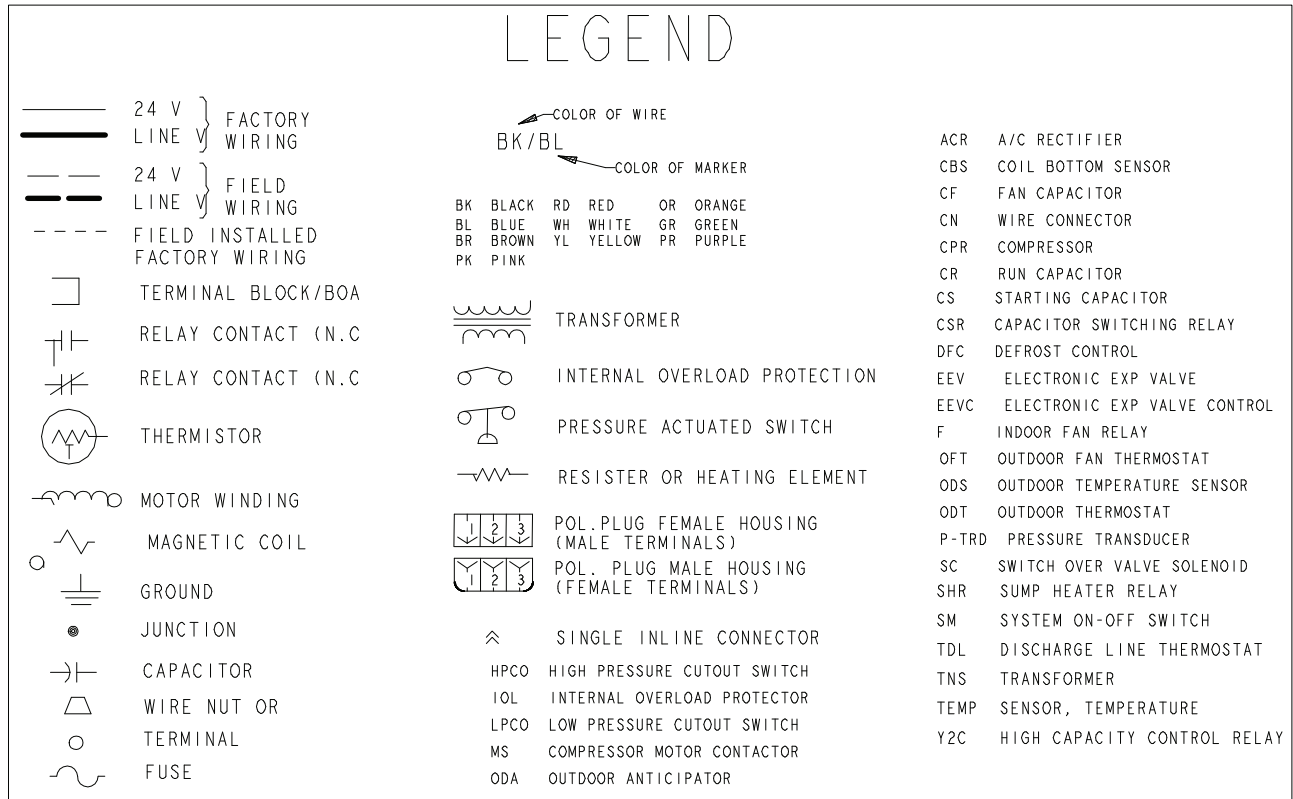


**Figure 5. Legend and warnings**

**NOTES:**

1. BE SURE POWER SUPPLY AGREES WITH EQUIPMENT NAMEPLATE.
2. POWER WIRING AND GROUNDING OF EQUIPMENT MUST COMPLY WITH LOCAL CODES.
3. LOW VOLTAGE WIRING TO BE NO. 18 AWG MINIMUM CONDUCTOR.
4. ODT-B MUST BE SET LOWER THAN ODT-A, IF ODT-B IS NOT USED, ADD JUMPER BETWEEN W2 AND W3 AT AIR HANDLER, IF USED, ODT-B MUST BE MOUNTED REMOTE OF CONTROL BOX IN AN APPROVED WEATHERPROOF ENCLOSURE
5. IF ODT-A IS NOT USED, ADD JUMPER BETWEEN W1 AND W2 AT AIR HANDLER



| R-454B REFRIGERANT CHARGING CHART |                        |     |     |     |     |     |     |
|-----------------------------------|------------------------|-----|-----|-----|-----|-----|-----|
| LIQUID TEMP (°F)                  | DESIGN SUBCOOLING (°F) |     |     |     |     |     |     |
|                                   | 8                      | 9   | 10  | 11  | 12  | 13  | 14  |
| LIQUID GAGE PRESSURE (PSI)        |                        |     |     |     |     |     |     |
| 55                                | 170                    | 172 | 175 | 178 | 181 | 184 | 187 |
| 60                                | 184                    | 187 | 190 | 194 | 197 | 200 | 203 |
| 65                                | 200                    | 203 | 206 | 210 | 213 | 217 | 220 |
| 70                                | 217                    | 220 | 223 | 227 | 230 | 234 | 238 |
| 75                                | 234                    | 238 | 241 | 245 | 249 | 252 | 256 |
| 80                                | 252                    | 256 | 260 | 264 | 268 | 272 | 276 |
| 85                                | 272                    | 276 | 280 | 284 | 288 | 292 | 297 |
| 90                                | 292                    | 297 | 301 | 305 | 309 | 314 | 318 |
| 95                                | 314                    | 318 | 323 | 327 | 332 | 336 | 341 |
| 100                               | 336                    | 341 | 346 | 351 | 355 | 360 | 365 |
| 105                               | 360                    | 365 | 370 | 375 | 380 | 385 | 390 |
| 110                               | 385                    | 390 | 396 | 401 | 406 | 412 | 417 |
| 115                               | 412                    | 417 | 422 | 428 | 433 | 439 | 445 |
| 120                               | 439                    | 445 | 450 | 456 | 462 | 468 | 474 |
| 125                               | 468                    | 474 | 480 | 486 | 492 | 498 | 504 |

### ⚠ WARNING

HAZARDOUS VOLTAGE!  
 DISCONNECT ALL ELECTRICAL POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.  
 Failure to disconnect power before servicing can cause severe personal injury or death.

### ⚠ CAUTION

USE COPPER CONDUCTORS ONLY!  
 UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS. Failure to do so may cause damage to the equipment.

### ▲ NOTE:

MATERIAL: WHITE POLYPROPYLENE SUITABLE FOR USE IN OUTDOOR ENVIRONMENT.  
 ADHESIVE: PRESSURE SENSITIVE ADHESIVE WITH RELEASE PAPER SUITABLE FOR OUTDOOR APPLICATION ON PAINTED OR GALVANIZED SHEET METAL SURFACES  
 SIZE: 6 1/2" X 11"

# Dimensional Data

**Figure 6. Dimensional data**

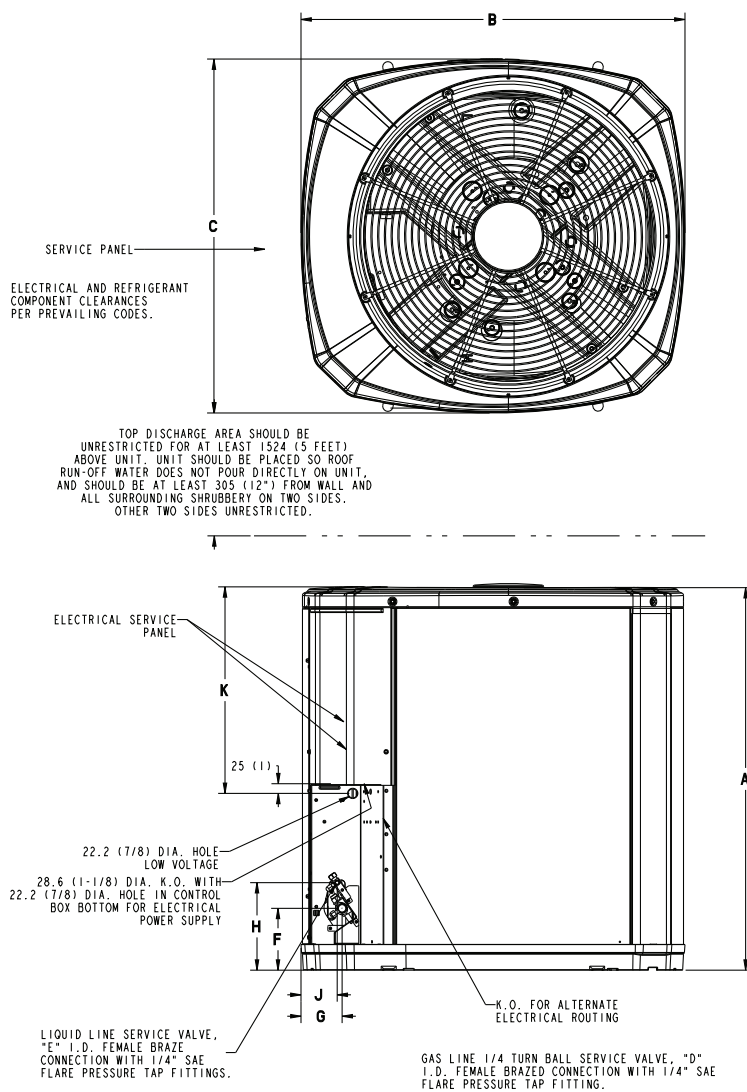


**Table 5. Unit dimensions**

| Model           | Base | A                | B               | C               | D   | E    | F              | G             | H              | J             | K           |
|-----------------|------|------------------|-----------------|-----------------|-----|------|----------------|---------------|----------------|---------------|-------------|
| 5TWA4036-A3000A | 4    | 841<br>(33-1/8)  | 946<br>(37-1/4) | 870<br>(34-1/4) | 3/4 | 5/16 | 143<br>(5-5/8) | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 508<br>(20) |
| 5TWA4042-A3000A | 4    | 1147<br>(45-1/8) | 946<br>(37-1/4) | 870<br>(34-1/4) | 7/8 | 5/16 | 152<br>(6)     | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 813<br>(32) |
| 5TWA4048-A3000A | 4    | 1147<br>(45-1/8) | 946<br>(37-1/4) | 870<br>(34-1/4) | 7/8 | 5/16 | 152<br>(6)     | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 813<br>(32) |
| 5TWA4060-A3000A | 4    | 1147<br>(45-1/8) | 946<br>(37-1/4) | 870<br>(34-1/4) | 7/8 | 5/16 | 152<br>(6)     | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 813<br>(32) |
| 5TWA4036-A4000A | 4    | 841<br>(33-1/8)  | 946<br>(37-1/4) | 870<br>(34-1/4) | 3/4 | 5/16 | 143<br>(5-5/8) | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 508<br>(20) |
| 5TWA4042-A4000A | 4    | 1147<br>(45-1/8) | 946<br>(37-1/4) | 870<br>(34-1/4) | 7/8 | 5/16 | 152<br>(6)     | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 813<br>(32) |
| 5TWA4048-A4000A | 4    | 1147<br>(45-1/8) | 946<br>(37-1/4) | 870<br>(34-1/4) | 7/8 | 5/16 | 152<br>(6)     | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 813<br>(32) |
| 5TWA4060-A4000A | 4    | 1147<br>(45-1/8) | 946<br>(37-1/4) | 870<br>(34-1/4) | 7/8 | 5/16 | 152<br>(6)     | 98<br>(3-7/8) | 219<br>(8-5/8) | 86<br>(3-3/8) | 813<br>(32) |



# Mechanical Specification Options

## General

The outdoor condensing units are factory charged with the system charge required for the outdoor condensing unit, ten (10) feet of tested connecting line, and the smallest rated indoor evaporative coil match. This unit is designed to operate at outdoor ambient temperatures as high as 115°F. Cooling capacities are matched with a wide selection of air handlers and furnace coils that are AHRI certified. The unit is certified to UL 60335-2-40. Exterior is designed for outdoor application.

## Casing

Unit casing is constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint finish. The corner panels are prepainted. All panels are subjected to our 1,000 hour salt spray test.

## Refrigerant Controls

Refrigeration system controls include condenser fan, compressor contactor and low and high pressure switches. A factory supplied, field installed liquid line drier is standard.

## Compressor

The compressor features internal over temperature and pressure protection. Other features include: Centrifugal oil pump and low vibration and noise.

## Condenser Coil

The outdoor coil provides low airflow resistance and efficient heat transfer. The coil is protected on all four sides by louvered panels.

## Low Ambient Cooling

As manufactured, this system has a cooling capacity to 55°F. The addition of an evaporator defrost control permits operation to 40°F. The addition of an evaporator defrost control with TXV permits low ambient cooling to 30°F.

The addition of the BAYLOAM107A low ambient kit permits ambient cooling to 20°F.

The addition of the BAYLOAM108 low ambient kit permits ambient cooling to 20°F.

**Thermostats** – Cooling only and heat/cooling (manual and automatic change over). Sub-base to match thermostat and locking thermostat cover.



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