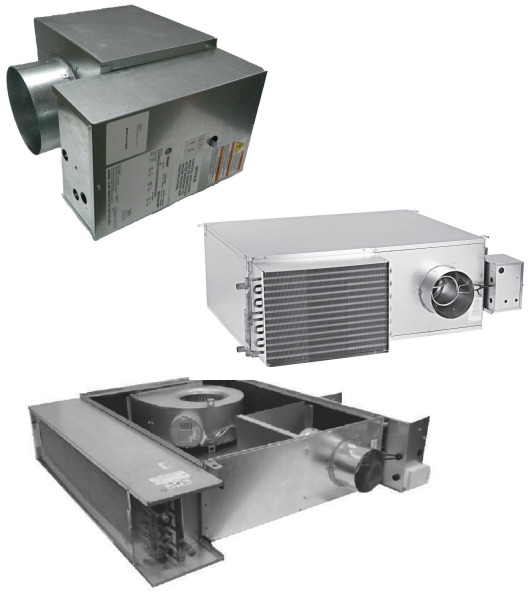
Installation, Operation, and Maintenance

VariTrane™ Variable Air Volume (VAV) Terminal Air Units

Shutoff, Fan Powered, and CoolSense™ Sensible Cooling



Single-Duct: VCCF, VCEF, VCWF
Dual-Duct: VDDF
Fan-Powered: VPCF, VPEF, VPWF, VSCG, VSEG, VSWG
Fan-Powered Low Height: LPCF, LPEF, LPWF, LSCF, LSEF, LSWF
Chilled Water Sensible Cooling Terminal Units: LDCF, LDEF, LDWF, VDCF, VDEF, VDWF

⚠ SAFETY WARNING

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

September 2024 **VAV-SVX08AA-EN**

Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

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

The three types of advisories are defined as follows:

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

Important Environmental Concerns

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

Important Responsible Refrigerant Practices

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

⚠ WARNING

Proper Field Wiring and Grounding Required!

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

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

⚠ WARNING

Personal Protective Equipment (PPE) Required!

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

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

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

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⚠ WARNING

Follow EHS Policies!

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

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

⚠ WARNING

Fiberglass Wool!

Exposure to glass wool fibers without all necessary PPE equipment could result in cancer, respiratory, skin or eye irritation, which could result in death or serious injury. Disturbing the insulation in this product during installation, maintenance or repair will expose you to airborne particles of glass wool fibers and ceramic fibers known to the state of California to cause cancer through inhalation.

You MUST wear all necessary Personal Protective Equipment (PPE) including gloves, eye protection, a NIOSH approved dust/mist respirator, long sleeves and pants when working with products containing fiberglass wool.

Precautionary Measures:

- **Avoid breathing fiberglass dust.**
- **Use a NIOSH approved dust/mist respirator.**
- **Avoid contact with the skin or eyes. Wear long-sleeved, loose-fitting clothing, gloves, and eye protection.**
- **Wash clothes separately from other clothing; rinse washer thoroughly.**
- **Operations such as sawing, blowing, tear-out, and spraying may generate fiber concentrations requiring additional respiratory protection. Use the appropriate NIOSH approved respirator.**

First Aid Measures:

- **Eye Contact - Flush eyes with water to remove dust. If symptoms persist, seek medical attention.**
- **Skin Contact - Wash affected areas gently with soap and warm water after handling.**

Important: *Changes or modifications not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.*

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Revision History

- Updated models on cover page.
- Updated About This Manual topic in Introduction chapter.
- Updated Model Numbers chapter.
- Updated Dual-Duct VAV Units, Typical Fan-powered Units, and Chilled Water Sensible Cooling Terminal Units topics in Unit Information chapter.
- Updated Unit Installation chapter.
- Added VSxG VDxG ECM CFM table in Unit Setup chapter.
- Updated Wiring Diagrams chapter.
- Updated Maintenance chapter.

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General Information

This manual describes the installation of with recommended wiring, piping, and mounting of single-duct, dual-duct, fan-powered, and low-height VAV terminal units, and chilled water sensible coil terminal units.

See also the following reference documents:

- *Air-Fi® Wireless System, Installation, Operation, and Maintenance* (BAS-SVX40*-EN)
- *Air-Fi® Network Design, Installation, Operation, and Maintenance* (BAS-SVX55*-EN)
- *Tracer® UC210 Programmable Variable-Air-Volume (VAV) Box Controller, Installation, Operation, and Programming* (BAS-SVX62*-EN)
- *Tracer® UC400 Programmable BACnet® Controller for Variable-Air-Volume (VAV) Units, Installation, Operation, and Programming* (VAV-SVX07*-EN)
- *Symbio™ 210 Programmable Variable-Air-Volume (VAV) Box Controller, Installation, Operation, and Maintenance* (BAS-SVX084*-EN)
- *Symbio™ 500 Programmable BACnet® Controller for Variable-Air-Volume (VAV) units, Installation, Operation, and Maintenance* (BAS-SVX091*-EN)

Receiving and Handling

These units are shipped completely assembled with the exceptions of outlet duct temperature sensors on non-VCEF products, water valves, and accessories. Upon receiving the equipment, complete the following:

- Locate the nameplate and refer to the model and sales order number and check that the correct units have been delivered.
- Inspect the control enclosures and air valve casing for dents or punctures.
- Verify that all options have been included, such as filters, controls, heating coils, water valves, etc. Also check that the unit voltages agree with the building parameters.
- Manually rotate fan (if applicable) to assure that there are no obstructions within the housing.
- Claims for in-transit damage must be filed immediately with the delivery carrier.
- For hot water reheat units, check the coil fins and make sure that coils are not damaged.
- Locate and verify that the correct zone sensors are with the order. These will be marked with an orange “Accessories Enclosed” label. Store in a secure location until needed. Accessories lost at the job site are NOT covered by the Trane warranty.
- If a discrepancy occurs between what was ordered and what is received, contact you local Trane representative immediately.
- Read appropriate section in this manual for installation procedures prior to starting equipment.

Upon receiving the equipment, please inspect each unit and components for external or internal damage. Refer to the bill of lading to insure all equipment and accessories have been received. Contact your local Trane sales representative and notify the trucking company immediately of any short ship or damaged equipment.

Read this manual thoroughly before operating or servicing this unit.

Model Numbers

Single-Duct VAV Units

Digit 1, 2— Unit Type

VC = VariTrane™ Single—Duct

Digit 3— Reheat

C = Cooling Only
E = Electric Heat
W = Hot Water Heat

Digit 4 — Development Sequence

F = Sixth

Digit 5, 6 — Primary Air Valve

04 = 4" inlet (225 cfm)
05 = 5" inlet (350 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
12 = 12" inlet (2000 cfm
14 = 14" inlet (3000 cfm)
16 = 16" inlet (4000 cfm)
24 = 24" x 16" inlet (8000 cfm)

Digit 7, 8, 9— Not Used

000 = N/A

Digit 10, 11— Design Sequence

M0 = New Hot Water Coil

Digit 12, 13, 14, 15 — Controls

DD00 = Trane Actuator Only and Enclosure
DD41 = UC400 DDC- Basic (No Water or Electric Heat)
DD42 = UC400 DDC- Basic (Water heat- N.C. 2-position)
DD43 = UC400 DDC- Basic (Water heat- Modulating)
DD44 = UC400 DDC- Basic (Electric heat- Staged)
DD45 = UC400 DDC- Basic (Electric heat- PWM)
DD46 = UC400 DDC- Ventilation Flow- cooling only
DD47 = UC400 DDC- Basic (Water heat- N.O. 2-position)
DD49 = UC400 DDC- Flow Tracking (Cooling only)
DD50 = UC400 DDC- Ventilation Flow (Water heat- N.C. 2-position
DD51 = UC400 DDC- Ventilation Flow (Electric heat- Staged)
DD52 = UC400 DDC- Ventilation Flow (Water heat- Modulating)
DD53 = UC400 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)

Digit 12, 13, 14, 15 — Controls (continued)

DD54 = UC400 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
DD55 =UC400 DDC- Basic plus Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
DD56 = UC400 Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - Modulating)
DD57 = UC400 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
DD58 = UC400 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
DD59 = UC400 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
DD60 = UC400 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
DD61 = UC400 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
DD62 = UC400 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged EH)
DD63 = UC400 DDC- Ventilation Flow (Water heat- N.O. 2-position)
DD65 = UC400 Basic (Electric Heat Modulating SCR)
DD66 = UC400 Basic plus- Local (Electric heat- Modulating SCR) Remote (Staged EH)
DD67 = UC400 Ventilation Flow (Electric heat- Modulating SCR)
DD71 = UC210 DDC- Basic (No water or Electric heat)
DD72 = UC210 DDC- Basic (Water heat- N.C. 2-position)
DD73 = UC210 DDC- Basic (Water heat- Modulating)
DD74 = UC210 DDC- Basic (Electric heat- Staged)
DD75 = UC210 DDC- Basic (Electric heat- PWM)
DD76 = UC210 DDC Ventilation flow- cooling only
DD77 = UC210 DDC- Basic (Water heat- N.O. 2-position)
DD79 = UC210 DDC- Flow Tracking (Cooling only)
DD80 = UC210 DDC- Ventilation Flow (Water heat- N.C. 2-position)
DD81 = UC210 DDC- Ventilation Flow (Electric heat- Staged)
DD82 = UC210 DDC- Ventilation Flow (Water heat- Modulating)
DD83 = UC210 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)
DD84 = UC210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
DD85 = UC210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
DD86 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)

Digit 12, 13, 14, 15 — Controls (continued)

DD87 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
DD88 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
DD89 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
DD90 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
DD91 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
DD92 = UC210 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged EH)
DD93 = UC210 Ventilation Flow (Water heat- N.O. 2-position)
DD95 = UC210 Basic (Electric Heat Modulating SCR)
DD96 = UC210 Basic plus- Local (Electric heat- Modulating SCR) Remote (Staged EH)
DD97 = UC210 Ventilation Flow (Electric heat- Modulating SCR)
ENCL = Shaft Only in Enclosure
FM00 = Other Actuator and Control
FM01 = Trane Supplied Actuator, Other Control
N.C. = Normally-Closed
N.O. = Normally-Open
FM = Factory Installation of Customer-supplied Controllers
SE41 = Symbio™ 500 DDC- Basic (Cooling only)
SE42 = Symbio™ 500 DDC- Basic (Water heat - N. C. 2-position)
SE43 = Symbio™ 500 DDC- Basic (Water heat -Modulating)
SE44 = Symbio™ 500 DDC- Basic (Electric heat -Staged)
SE45 = Symbio™ 500 DDC- Basic (Electric heat -PWM)
SE46 = Symbio™ 500 DDC- Ventilation Flow (no reheat)
SE47 = Symbio™ 500 DDC- Basic (Water heat - N. O. 2-position)
SE49 = Symbio™ 500 DDC- Flow track (Cooling only)
SE50 = Symbio™ 500 DDC- Ventilation Flow (N.C. 2-position)
SE51 = Symbio™ 500 DDC- Ventilation Flow (Electric heat - Staged)
SE52 = Symbio™ 500 DDC- Ventilation Flow (Water heat-Modulating)
SE53 = Symbio™ 500 DDC- Basic plus Local (Electric heat - PWM) Remote (Staged)
SE54 = Symbio™ 500 DDC- Basic plus Local (Water heat Modulating) Remote (Water N.C. 2-position)
SE55 = Symbio™ 500 DDC- Basic plus Local (Water heat Modulating) Remote (Water N.O. 2-position)
SE56 = Symbio™ 500 DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water- Modulating)

Digit 12, 13, 14, 15 — Controls (continued)

SE57 = Symbio™ 500 DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water-Modulating)
SE58 = Symbio™ 500 DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water N.O. 2-position)
SE59 = Symbio™ 500 DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water N.C. 2-position)
SE60 = Symbio™ 500 DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water N.C. 2-position)
SE61 = Symbio™ 500 DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water N.O. 2-position)
SE62 = Symbio™ 500 DDC- Basic plus Local (Electric heat - Staged) Remote (Staged)
SE63 = Symbio™ 500 DDC -Ventilation Flow (water heat - N.O. 2-position)
SE65 = Symbio™ 500 DDC- Control with modulating SCR
SE66 = Symbio™ 500 DDC- Space temp control with local SCR and remote stage electric heat
SE67 = Symbio™ 500 DDC- Ventilation Flow with SCR electric heat
SE71 = Symbio™ 210e DDC- Basic (Cooling only)
SE72 = Symbio™ 210e DDC- Basic (Water heat - N.C. 2-position)
SE73 = Symbio™ 210e DDC- Basic (Water heat -Modulating)
SE74 = Symbio™ 210e DDC- Basic (Electric heat - Staged)
SE75 = Symbio™ 210e DDC- Basic (Electric heat - PWM)
SE76 = Symbio™ 210e DDC- Ventilation Flow (no reheat)
SE77 = Symbio™ 210e DDC- Basic (Water heat - N.O. 2-position)
SE79 =Symbio™ 210e DDC- Flow track (Cooling only)
SE80 =Symbio™ 210e DDC- Ventilation Flow (N.C. 2-position)
SE81 = Symbio™ 210e DDC- Ventilation Flow (Electric heat - Staged)
SE82 = Symbio™ 210e DDC- Ventilation Flow (Water heat-Modulating)
SE83 = Symbio™ 210e DDC- Basic plus Local (Electric heat - PWM) Remote (Staged)
SE84 = Symbio™ 210e DDC- Basic plus Local (Water heat Modulating) Remote (Water N.C. 2-position)
SE85 = Symbio™ 210e DDC- Basic plus Local (Water heat Modulating) Remote (Water N.O. 2-position)
SE86 = Symbio™ 210e DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water-Modulating)

Digit 12, 13, 14, 15 — Controls (continued)

SE87 = Symbio™ 210e DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water-Modulating)
SE88 = Symbio™ 210e DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water N.O. 2-position)
SE89 = Symbio™ 210e DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water N.C. 2-position)
SE90 = Symbio™ 210e DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water N.C. 2-position)
SE91 = Symbio™ 210e DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water N.O. 2-position)
SE92 = Symbio™ 210e DDC- Basic plus Local (Electric heat - Staged) Remote (Staged)
SE93 = Symbio™ 210e DDC -Ventilation Flow (water heat - N.O. 2-position)
SE95 = Symbio™ 210e DDC- Control with modulating SCR
SE96 = Symbio™ 210e DDC- Space temp control with local SCR and remote stage electric heat
SE97 = Symbio™ 210e DDC- Ventilation Flow with SCR electric heat
SY71 = Symbio™ 210 DDC- Basic (Cooling only)
SY72 = Symbio™ 210 DDC- Basic (Water heat - N. C. 2-position)
SY73 = Symbio™ 210 DDC- Basic (Water heat-Modulating)
SY74 = Symbio™ 210 DDC- Basic (Electric heat - Staged)
SY75 = Symbio™ 210 DDC- Basic (Electric heat - PWM)
SY76 = Symbio™ 210 DDC- Ventilation Flow (no reheat)
SY77 = Symbio™ 210 DDC- Basic (Water heat - N. O. 2-position)
SY79 = Symbio™ 210 DDC- Flow track (Cooling only)
SY80 = Symbio™ 210 DDC- Ventilation Flow (N.C. 2-position)
SY81 = Symbio™ 210 DDC- Ventilation Flow (Electric heat - Staged)
SY82 = Symbio™ 210 DDC- Ventilation Flow (Water heat-Modulating)
SY83 = Symbio™ 210 DDC- Basic plus Local (Electric heat - PWM) Remote (Staged)
SY84 = Symbio™ 210 DDC- Basic plus Local (Water heat Modulating) Remote (Water N.C. 2-position)
SY85 = Symbio™ 210 DDC- Basic plus Local (Water heat Modulating) Remote (Water N.O. 2-position)
SY86 = Symbio™ 210 DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water-Modulating)
SY87 = Symbio™ 210 DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water-Modulating)

Digit 12, 13, 14, 15 — Controls (continued)

SY88 = Symbio™ 210 DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water N.O. 2-position)
SY89 = Symbio™ 210 DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water N.C. 2-position)
SY90 = Symbio™ 210 DDC- Basic plus Local (Water heat - N.O. 2-position) Remote (Water N.C. 2-position)
SY91 = Symbio™ 210 DDC- Basic plus Local (Water heat - N.C. 2-position) Remote (Water N.O. 2-position)
SY92 = Symbio™ 210 DDC- Basic plus Local (Electric heat - Staged) Remote (Staged)
SY93 = Symbio™ 210 DDC -Ventilation Flow (Water heat - N.O. 2-position)
SY95 = Symbio™ 210 DDC- Control with Modulating SCR
SY96 = Symbio™ 210 DDC- Space temp control with local SCR and Remote Stage Electric Heat
SY97 = Symbio™ 210 DDC- Vent Flow with SCR Electric Heat

Digit 16 — Insulation

A = 1/2-in. Matte-faced
B = 1-in Matte-faced
D = 1-in Foil-faced
F = 1-in Double Wall
G = 3/8-in Closed-cell

Digit 17, 18— Not Used

00 = Not Applicable

Digit 19— Not Used

0 = Not Applicable

Digit 20— Not Used

0 = Not Applicable

Digit 21— Water Coil

0 = None
1 = 1 Row
2 = 2 Row
3 = 3 Row
4 = 4 Row
A = 1 Row Premium
B = 2 Row Premium
C = 3 Row Premium
D = 4 Row Premium

Model Numbers

Digit 22— Electrical Connections

F = Able to Flip for LH/RH Connections (VCEF Only)
L = Left, Airflow hits in face
R = Right, Airflow hits in face
0 = Opposite side connection, coil and control (VCWF Only)

Note: *VCCF/VCWF can be flipped in field for opposite connections.*

Digit 23— Transformer

0 = None
1 = 120/24V, 50 VA
2 = 208/24V, 50 VA
3 = 240/24V, 50 VA
4 = 277/24V, 50 VA
5 = 480/24V, 50 VA
6 = 347/24V, 50 VA
7 = 380/24V, 50 VA
8 = 575/24V, 50 VA

Note: *For VCEF units with transformers the VA depends on the staging, control, and contactor type (ranges are 50 VA or 75 VA)*

Digit 24 — Disconnect Switch

0 = None
W = With

Note: *VCCF/VCWF— toggle disconnect. VCEF- door interlocking power disconnect.*

Digit 25 — Power Fuse

0 = None
W = With

Digit 26 — Electric Heat Voltage

0 = None
A = 208/60/1
B = 208/60/3
C = 240/60/1
D = 277/60/1
E = 480/60/1
F = 480/60/3
G = 347/60/1
H = 575/60/3
J = 380/50/3
K = 120/60/1

Digit 27, 28, 29 — Electric Heat kW

000 = None
010 = 1.0 kW
015 = 1.5 kW
460 = 46.0 kW

Notes:

- *0.5 to 8.0 kW in 1/2 kW increments*
- *8.0 to 18.0 kW in 1 kW increments*
- *18.0 to 46.0 kW in 2 kW increments*

Digit 30 — Electric Heat Stages

0 = None
1 = 1 Stage
2 = 2 Stages Equal
3 = 3 Stages Equal

Digit 31 — Electric Heat Contactors

0 = None
1 = 24V Magnetic
5 = 0–10Vdc SCR Heat; Symbio™ 210/210e, Symbio™ 500, UC200, UC400
6 = 0–10Vdc SCR Heat; FMTD/ENCL/DD00
7 = 24V SSR (Solid State Relay)

Digit 32, 33— Not Used

00 = Not Applicable

Digit 34 — Actuator

0 = Standard
A = Spring Return, Normally Open
B = Spring Return, Normally Closed
C = Belimo™ Actuator
G = Trane Analog Actuator (Symbio™ 210/210e, Symbio™ 500, UC210, UC400)

Digit 35 — Sensor Options

0 = Standard, Wired
3 = Trane Air-Fi® Wireless Communications Interface

Digit 36 — Pre-wired Factory Solutions

0 = None
1 = Factory Wired Duct Temperature Sensor (DTS)
2 = HW Valve Harness
3 = Both Factory Wired DTS/HW Valve Harness
4 = Averaging DTS Factory-installed in Unit (Required Symbio™ 210/210e, Symbio™ 500, UC210, UC400 w/SCR Heat)
5 = Duct Temperature Sensor -Factory Mounted
6 = Factory-mounted DTS and HWV Harness

Digit 37 — Integral Attenuator with Cam Lock Bottom Access

0 = None
1 = Attenuator and bottom access - left side controls
2 = Attenuator and bottom access - right side controls
3 =Attenuator and bottom access - left side controls, right side water coil connections
4 = Attenuator and bottom access - right side controls, left side water coil connections
5 = Attenuator only

Digit 38 —Piping Package

0 = None
A = 2–Way Automatic Balancing
B = 3–Way Automatic Balancing
C = 2-Way Standard Valve Only, Floating Point Actuator
D = 3-Way Standard Valve Only, Floating Point Actuator
E = 2-Way Standard Valve Piping Package, Floating Point Actuator
F = 3-Way Standard Valve Piping Package, Floating Point Actuator
G = 2-Way Belimo Valve Only, Floating Point Actuator
H = 3-Way Belimo Valve Only, Floating Point Actuator
J = 2-Way Belimo Valve Piping Package, Floating Point Actuator
K = 3-Way Belimo Valve Piping Package, Floating Point Actuator
L = 2-Way Belimo Valve Only, Analog Actuator
M = 3-Way Belimo Valve Only, Analog Actuator
N = 2-Way Belimo Valve Piping Package, Analog Actuator
P = 3-Way Belimo Valve Piping Package, Analog Actuator
Q = 2-Way Standard Valve Factory Mounted Piping Package, Floating Point Actuator
R = 3-Way Standard Valve Factory Mounted Piping Package, Floating Point Actuator
S = 2-Way Belimo Valve Factory Mounted Piping Package, Floating Point Actuator
T = 3-Way Belimo Valve Factory Mounted Piping Package, Floating Point Actuator
U = 2-Way Belimo Valve Factory Mounted Piping Package, Analog Actuator
V = 3-Way Belimo Valve Factory Mounted Piping Package, Analog Actuator

Digit 39 — Water Valve

0 = None
1 = Trane HW Valve 0.7 Cv
2 = Trane HW Valve 2.7 Cv
5 = Analog HW Valve, field provided (Symbio™ 210/210e, Symbio™ 500, UC210, UC400)
6 = Trane HW Valve, 1.7 Cv
7 = Trane HW Valve, 5.0 Cv
A = Belimo HW Valve, 0.3 Cv
B = Belimo HW Valve, 0.46 Cv
C = Belimo HW Valve, 0.8 Cv
D = Belimo HW Valve, 1.2 Cv
E = Belimo HW Valve, 1.9 Cv
F = Belimo HW Valve, 3.0 Cv
G = Belimo HW Valve, 4.7 Cv

Digit 40 — Flow Rate

0 = None
A = 0.5 gpm, 0.03 l/s
B = 1.0 gpm, 0.06 l/s
C = 1.5 gpm, 0.09 l/s
D = 2.0 gpm, 0.13 l/s
E = 2.5 gpm, 0.16 l/s
F = 3.0 gpm, 019 l/s
G = 3.5 gpm, 0.22 l/s
H = 4.0 gpm, 0.25 l/s
J = 4.5 gpm, 0.28 l/s
K = 5.0 gpm, 0.31 l/s
L = 5.5 gpm, 0.35 l/s
M = 6.0 gpm, 0.38 l/s
N = 6.5 gpm, 0.41 l/s
P = 7.0 gpm, 0.44 l/s
Q = 7.5 gpm, 0.47 l/s
R = 8.0 gpm, 0.50 l/s
S = 9.0 gpm, 0.57 l/s
T = 10.0 gpm, 0.63 l/s
U = 11.0 gpm, 0.69 l/s
V = 12.0 gpm, 0.76 l/s

Digit 41 — Air Leakage Class

0 = Standard Air Leakage
1 = Certified Ultra-Low Air Leakage

Dual-Duct VAV Units

Digit 1, 2, 3— Unit Type

VDD = VariTrane™ Dual—Duct

Digit 4 — Development Sequence

F = Sixth

Digit 5, 6 — Primary Air Valve

05 = 5" inlet (350 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
12 = 12" inlet (2000 cfm
14 = 14" inlet (3000 cfm)
16 = 16" inlet (4000 cfm)

Digit 7, 8 — Secondary Air Valve

05 = 5" inlet (350 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
12 = 12" inlet (2000 cfm
14 = 14" inlet (3000 cfm)
16 = 16" inlet (4000 cfm)

Digit 9— Not Used

0 = Not applicable

Digit 10, 11— Design Sequence

**** = Factory Assigned

Digit 12, 13, 14, 15 — Controls

DD00 = Trane Actuator Only
DD41 = UC400 DDC Basic Variable Air Volume
DD48 = UC400 DDC Basic, Constant Volume
FM00 = Other Actuator and Control
FM01 = Trane Supplied Actuator, Other Ctrl
SE41 = Symbio™ 500 - DDC Basic Variable Air Volume
SE48 = Symbio™ 500 - DDC Basic Constant Volume

Digit 16 — Insulation

A = 1/2" Matte-faced
B = 1" Matte-faced
D = 1" Foil-faced
F = 1" Double Wall
G = 3/8" Closed-cell

Digit 17— Not Used

0 = Not Applicable

Digit 18— Not Used

0 = Not Applicable

Digit 19 — Not Used

0 = Not Applicable

Digit 20— Not Used

0 = Not Applicable

Digit 21— Not Used

0 = Not Applicable

Digit 22— Not Used

0 = Not Applicable

Digit 23 — Transformer

0 = None
1 = 120/24V, 50 VA
2 = 208/24V, 50 VA
3 = 240/24V, 50 VA
4 = 277/24V, 50 VA
5 = 480/24V, 50 VA
6 = 347/24V, 50 VA
7 = 575/24V, 50 VA

Digit 24— Disconnect Switch

0 = None
W = With Toggle

Digit 25 — Power Fuse

0 = None
W = With

Digit 26 — Not Used

0 = Not Applicable

Digit 27 — Not Used

0 = Not Applicable

Digit 28 — Not Used

0 = Not Applicable

Digit 29 — Not Used

0 = Not Applicable

Digit 30— Not Used

0 = Not Applicable

Digit 31 — Not Used

0 = Not Applicable

Digit 32 — Not Used

0 = Not Applicable

Digit 33 — Special Options

0 = None
X = Varies, Factory Assigned

Digit 34 — Actuator

0 = Standard
A = Belimo™ Actuator
B = Trane Analog Actuator (Symbio™ 500, UC400)

Digit 35 — Wireless Sensor

0 = Sensor/Receiver Standard
3 = Trane Air-Fi® Wireless Communication Interface

Note: *All sensors selected in accessories.*

Digit 36 — Duct Temperature Sensor

0 = None
1 = With Duct Temperature Sensor

Fan Powered VAV Units

Series (VSxG)

Digit 1, 2, 3, 4 — Unit Model

VSCG = Series Fan Powered Cooling Only
VSEG = Series Fan Powered With Electric Heat
VSWG = Series Fan Powered With Hot Water Heat

Digit 5, 6 — Primary Inlet

04 = 4" inlet (225 cfm)
05 = 5" inlet (350 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
12 = 12" inlet (2000 cfm
14 = 14" inlet (3000 cfm)
16 = 16" inlet (4000 cfm)

Digit 7, 8 — Secondary Inlet

00 = Not Used For Product Coding

Digit 9 — Fan Size

1 = Small
2 = Medium
3 = Large

Digit 10, 11 — Design Sequence

A0 = Design Sequence

Digit 12, 13, 14, 15 — Unit Controls

ENCL = Shaft Only In Enclosure
DD00 = Trane Actuators Only
DD41 = UC400 DDC-Basic (Cooling only)
DD42 = UC400 DDC- Basic (Water heat- N.C. 2-position)
DD43 = UC400 DDC-Basic (Water heat-Modulating)
DD44 = UC400 DDC-Basic (Electric heat-Staged)
DD45 = UC400 DDC-Basic (Electric heat-PWM)
DD47 = UC400 DDC- Basic (Water heat- N.O. 2-position)
DD53 = UC400 DDC-Basic Plus Local (Electric heat-PWM) Remote (Staged)
DD58 = UC400 DDC-Basic Plus Local (Water heat N.O. 2-position) Remote (Water-N.O. 2-position)
DD59 = UC400 DDC-Basic Plus Local (Water heat N.C. 2-position) Remote (Water-N.C. 2-position)
DD60 = UC400 DDC-Basic Plus Local (Water heat N.O. 2-position) Remote (Water-N.C. 2-position)
DD61 = UC400 DDC-Basic Plus Local (Water heat N.C. 2-position) Remote (Water-N.O. 2-position)

Digit 12, 13, 14, 15 — Unit Controls (continued)

DD62 = UC400 DDC-Basic Plus Local (Electric heat-staged) Remote (Staged)
DD65 = UC400 DDC-Control with Modulating SCR
DD66 = UC400 DDC-Space Temp Control with Local SCR and Remote Staged Electric heat
DD71 = UC210 DDC-Basic (Cooling only)
DD72 = UC210 DDC-Basic (Water heat-N.C. 2-position)
DD73 = UC210 DDC-Basic (Water heat-Modulating)
DD74 = UC210 DDC-Basic (Electric heat-Staged)
DD75 = UC210 DDC-Basic (Electric heat-PWM)
DD77 = UC210 DDC-Basic (Water heat-N.O. 2-position)
DD83 = UC210 DDC-Basic Plus Local (Electric heat-PWM) Remote (Staged)
DD84 = UC210 DDC-Basic Plus Local (Water heat Modulating) Remote (Water-N.C. 2-position)
DD85 = UC210 DDC-Basic Plus Local (Water heat Modulating) Remote (Water-N.O. 2-position)
DD86 = UC210 DDC-Basic Plus Local (Water heat N.O. 2-position) Remote (Water-Modulating)
DD87 = UC210 DDC-Basic Plus Local (Water heat N.C. 2-position) Remote (Water-Modulating)
DD88 = UC210 DDC-Basic Plus Local (Water heat N.O. 2-position) Remote (Water-N.O. 2-position)
DD89 = UC210 DDC-Basic Plus Local (Water heat N.C. 2-position) Remote (Water-N.C. 2-position)
DD90 = UC210 DDC-Basic Plus Local (Water heat N.O. 2-position) Remote (Water-N.C. 2-position)
DD91 = UC210 DDC-Basic Plus Local (Water heat N.C. 2-position) Remote (Water-N.O. 2-position)
DD92 = UC210 DDC-Basic Plus Local (Electric heat-staged) Remote (Staged)
DD95 = UC210 DDC-Control with Modulating SCR
DD96 = UC210 DDC-Space Temp Control with Local SCR and Remote Staged Electric heat
SE41 = Symbio™ 500 DDC-Basic (Cooling only) or VAV Dual-Duct
SE42 = Symbio 500 DDC-Basic (Water heat-N.C. 2-position)
SE43 = Symbio 500 DDC-Basic (Water heat-Modulating)
SE44 = Symbio 500 DDC-Basic (Electric heat-staged)
SE45 = Symbio 500 DDC-Basic (Electric heat-PWM)
SE46 = Symbio 500 DDC-Ventilation Flow (no reheat)
SE47 = Symbio 500 DDC-Basic (Water heat-N.O. 2-position)
SE53 = Symbio 500 DDC-Basic Plus Local (Electric heat-pwm) Remote (Staged)
SE54 = Symbio 500 DDC-Basic Plus Local (Water heat Modulating) Remote (Water-N.C. 2-position)

Digit 12, 13, 14, 15 — Unit Controls (continued)

SE55 = Symbio 500 DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.O. 2-position)
SE56 = Symbio 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-Modulating)
SE57 = Symbio 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-Modulating)
SE58 = Symbio 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.O. 2-position)
SE59 = Symbio 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.C. 2-position)
SE60 = Symbio 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.C. 2-position)
SE61 = Symbio 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.O. 2-position)
SE62 = Symbio 500 DDC-Basic plus Local (Electric heat-staged) Remote (Staged)
SE63 = Symbio 500 DDC -Ventilation Flow (water heat-no 2-position)
SE65 = Symbio 500 DDC-Control with Modulating SCR
SE66 = Symbio 500 DDC-Space Temp Control with Local SCR and Remote Staged Electric heat
SE71 = Symbio 210e DDC-Basic (Cooling only)
SE72 = Symbio 210e DDC-Basic (Water heat-nc 2-position)
SE73 = Symbio 210e DDC-Basic (Water heat-Modulating)
SE74 = Symbio 210e DDC-Basic (Electric heat-staged)
SE75 = Symbio 210e DDC-Basic (Electric heat-PWM)
SE77 = Symbio 210e DDC-Basic (Water heat-N.O. 2-position)
SE83 = Symbio 210e DDC-Basic plus Local (Electric heat-PWM) Remote (Staged)
SE84 = Symbio 210e DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.C. 2-position)
SE85 = Symbio 210e DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.O. 2-position)
SE86 = Symbio 210e DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-Modulating)
SE87 = Symbio 210e DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-Modulating)
SE88 = Symbio 210e DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.O. 2-position)
SE89 = Symbio 210e DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.C. 2-position)
SE90 = Symbio 210e DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.C. 2-position)

Digit 12, 13, 14, 15 — Unit Controls (continued)

SE91 = Symbio 210e DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.O. 2-position)
SE92 = Symbio 210e DDC-Basic plus Local (Electric heat-staged) Remote (Staged)
SE95 = Symbio 210e DDC-Control with Modulating SCR
SE96 = Symbio 210e DDC-Space Temp Control with Local SCR and Remote Staged Electric heat
SY71 = Symbio 210 DDC-Basic (Cooling only)
SY72 = Symbio 210 DDC-Basic (Water heat- N.C.-2 position)
SY73 = Symbio 210 DDC - Basic (Water heat-Modulating)
SY74 = Symbio 210 DDC - Basic (Electric heatstaged)
SY75 = Symbio 210 DDC - Basic (Electric heat-PWM)
SY77 = Symbio 210 DDC -Basic (Water heat -N.O.-2 position)
SY83 = Symbio™ 210 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged)
SY84 = Symbio™ 210 DDC- Basic plus Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
SY85 = Symbio 210 DDC- Basic plus Local (Water heat- Modulating) Remote (Water-N.O. 2-position)
SY86 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water-Modulating)
SY87 = Symbio 210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water-Modulating)
SY88 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
SY89 = Symbio 210 DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
SY90 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
SY91 = Symbio 210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
SY92 = Symbio 210 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
SY95 = Symbio™ 210 DDC - Control with Modulating SCR
SY96 = Symbio 210 DDC - Space Temp Control with Local SCR and Remote Staged Electric heat
DDSS = DDC Special
FM00 = Other Actuator and Control
FM01 = Trane Supplied Actuator, Other Control

Digit 16 — Insulation

B = 1” Matte-faced
D = 1” Foil-faced
F = 1” Double Wall
G = 3/8” Closed-cell
S = Special

Digit 17 — Motor Type

D = PSC Motor
E = Constant Volume (ECM)
F = Variable Volume (ECM)
S = Special Motor

Digit 18 — Motor Voltage

1 = 115/60/1
2 = 277/60/1
4 = 208/60/1
5 = 230/50/1
S = Special Motor Voltage

Digit 19 — Outlet Connection

1 = Flanged Connection VSCG and VSEG
2 = Slip and Drive Connection VSWG

Digit 20 — Attenuators

0 = Standard Unit (No Attenuator)
A = With Integral Return Attenuator
S = Special Attenuator

Digit 21 — Hot Water Coil

0 = No Water Coil
1 = One Row Water Coil
2 = Two Row Water Coil
3 = Three Row Water Coil
4 = Four Row Water Coil
A = One Row Premium Water Coil
B = Two Row Premium Water Coil
C = Three Row Premium Water Coil
D = Four Row Premium Water Coil
S = Special Hot Water Coil

Digit 22 — Hot Water Coil Connection

1 = Same Side Connection - Coil and Control
2 = Coil Connection Opposite Of Control

Digit 23 — Unit Filter

0 = 1" Throw Away
8 = 1" Merv8
3 = 2" Merv13
S = Special Filter

Digit 24 — Toggle Switch

0 = With Toggle Switch VSCG and VSWG
W = Unit Disconnect with Toggle Switch VSEG
S = Special Toggle Switch

Digit 25 — POWER FUSE

0 = No Fusing
W = With Power Fuse
S = Special Power Fuse

Digit 26 — Electric Heater Voltage

0 = NO HEATER VOLTAGE
A = 208/60/1
B = 208/60/3
C = 240/60/1
D = 277/60/1
E = 480/60/1
F = 480/60/3
J = 380/50/3
K = 120/60/1
S = Special Electric Heater Voltage

Digit 27, 28, 29 — Electric Heater Kilowatt

000 = N0 kW
010 = 1.0 kW
015 = 1.5 kW
020 = 2.0 kW
025 = 2.5 kW
030 = 3.0 kW
035 = 3.5 kW
040 = 4.0 kW
045 = 4.5 kW
050 = 5.0 kW
055 = 5.5 kW
060 = 6.0 kW
065 = 6.5 kW
070 = 7.0 kW
075 = 7.5 kW
080 = 8.0 kW
090 = 9.0 kW
100 = 10.0 kW
110 = 11.0 kW
120 = 12.0 kW
130 = 13.0 kW
140 = 14.0 kW
150 = 15.0 kW
160 = 16.0 kW
170 = 17.0 kW
180 = 18.0 kW
200 = 20.0 kW
220 = 22.0 kW
SSS = Special kW

Digit 30 — Electric Heater Stage

0 = NO STAGES OF HEAT
1 = 1 STAGE
2 = 2 STAGES EQUAL
S = Special Electric Heater Stage

Digit 31 — Electric Heater Control

0 = No Contactors
1 = 24 Volt Magnetic Contactor
5 = SCR Heat With Trane Controls
6 = SCR Heat Fmtd/Encl/Dd00
7 = Solid State Relay
S = Special Electric Heater Control

Digit 32 — Electric Heater Air Flow Switch

0 = No Air Flow Switch
W = With Air Flow Switch
S = Special Air Flow Switch

Digit 33 — Special Options

0 = No Special Options
A = Dual Power Connection Special

Digit 34 — Actuator

0 = Standard Actuator - Floating Point
A = Belimo Actuator - Floating Point
B = Spring Return Actuator - Normally Open
C = Spring Return Actuator - Normally Closed
G = Trane Analog Actuator - Trane Conrols Only
S = Special Actuator

Digit 35 — Wireless Sensor Option

0 = Wired Sensor
A = Air-Fi® Wireless Communication Interface (Fm)

Digit 36 — Factory Attached Field Mounted

0 = None
1 = Factory Terminated/Field Installed DTS
2 = Factory Terminated/Field Installed HW Valve Harness
4 = Factory Terminated and Installed - DTS in Plenum
5 = Factory Terminated and Installed - DTS in Plenum Factory Terminated/Field Installed HW Valve Harness

Digit 37 — Bottom Access

0 = Standard Top And Bottom Access

Digit 38 — Hot Water Piping Package

0 = None (No Piping Package)
C = 2-Way Standard Valve Only, Floating Point Actuator
D = 3-Way Standard Valve Only, Floating Point Actuator
E = 2-Way Standard Valve Piping Package, Floating Point Actuator
F = 3-Way Standard Valve Piping Package, Floating Point Actuator
G = 2-Way Belimo Valve Only, Floating Point Actuator
H = 3-Way Belimo Valve Only, Floating Point Actuator
J = 2-Way Belimo Valve Piping Package, Floating Point Actuator
K = 3-Way Belimo Valve Piping Package, Floating Point Actuator
L = 2-Way Belimo Valve Only, Analog Actuator
M = 3-Way Belimo Valve Only, Analog Actuator
N = 2-Way Belimo Valve Piping Package, Analog Actuator
P = 3-Way Belimo Valve Piping Package, Analog Actuator

Digit 39 — Water Valve

0 = None (No Water Valve)
1 = HW Valve, 0.7 Cv
2 = HW Valve, 2.7 Cv
5 = Analog HW Valve, field provided (UC210 or UC400 only)
6 = HW Valve, 1.7 Cv
7 = HW Valve, 5.0 Cv
A = HW Valve, 0.3 Cv
B = HW Valve, 0.46 Cv
C = HW Valve, 0.8 Cv
D = HW Valve, 1.2 Cv
E = HW Valve, 1.9 Cv
F = HW Valve, 3.0 Cv
F = HW Valve, 4.7 Cv

Digit 40 — Hot Water Flow Rate

0 = None (No Flow Rate)
A = 0.5 gpm (0.03 l/s)
U = 0.75 gpm (0.05 l/s)
B = 1 gpm (0.06 l/s)
V = 1.25 gpm (0.08 l/s)
C = 1.5 gpm (0.09 l/s)
W = 1.75 gpm (0.11 l/s)
D = 2 gpm (0.13 l/s)
E = 2.5 gpm (0.16 l/s)
F = 3 gpm (0.19 l/s)
G = 3.5 gpm (0.22 l/s)
H = 4 gpm (0.25 l/s)
J = 4.5 gpm (0.28 l/s)
K = 5 gpm (0.32 l/s)
L = 5.5 gpm (.035 l/s)
M = 6 gpm (0.38 l/s)
N = 6.5 gpm (0.41 l/s)
P = 7 gpm (0.44 l/s)
Q = 7.5 gpm (0.47 l/s)

Series (LSxF)

Digit 1, 2 — Unit Type

LS = VariTrane™ Fan-Powered Low Height Series

Digit 3 — Reheat

C = Cooling Only
E = Electric Heat
W = Hot Water Heat

Digit 4 — Development Sequence

F = Low Height Units

Digit 5, 6 — Primary Air Valve

05 = 5" inlet (350 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
RT = 8" × 14" inlet (1800 cfm)

Digit 7, 8 — Secondary Air Valve Used

00 = N/A

Digit 9 — Fan

1 = Small Fan
2 = Medium Fan
3 = Large Fan
A = DS02 Fan (1300 nom cfm)
B = DS03 Fan (1950 nom cfm)

Digit 10, 11 — Design Sequence

**** = Factory Assigned

Digit 12, 13, 14, 15 — Controls

DD41 = UC400 DDC - Basic (No water or electric heat)
DD42 = UC400 DDC - Basic (Water heat - N.C. 2-position)
DD43 = UC400 DDC - Basic (Water heat - Modulating)
DD44 = UC400 DDC - Basic (Electric heat - Staged)
DD45 = UC400 DDC - Basic (Electric heat - PWM)
DD47 = UC400 DDC - Basic (Water heat - N.O. 2-position)
DD53 = UC400 DDC - Basic plus - Local (Electric heat - PWM) Remote (Staged EH)
DD58 = UC400 DDC - Basic plus - Local (Water heat - Modulating) Remote (Water - N.O. 2-position)
DD59 = UC400 DDC - Basic plus - Local (Water heat - Modulating) Remote (Water - N.C. 2-position)
DD60 = UC400 DDC - Basic Plus Local (Water Heat - N.O. 2-position) Remote Water - N.C. 2-position)
DD61 = UC400 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N.O. 2- position)

Digit 12, 13, 14, 15 — Controls (continued)

DD62 = UC400 DDC - Basic plus - Local (Electric heat - Staged) Remote (Staged EH)
DD65 = UC400 Basic (Electric Heat Modulating SCR)
DD66 = UC400 Basic plus - Local (Electric heat - Modulating SCR) Remote (Staged EH)
DD71 = UC210 DDC - Basic (No water or electric heat)
DD72 = UC210 DDC - Basic (Water heat - N.C. 2-position)
DD73 = UC210 DDC - Basic (Water heat - Modulating)
DD74 = UC210 DDC - Basic (Electric heat - Staged)
DD75 = UC210 DDC - Basic (Electric heat - PWM)
DD77 = UC210 DDC - Basic (Water heat - N.O. 2-position)
DD83 = UC210 DDC - Basic plus - Local (Electric heat - PWM) Remote (Staged EH)
DD84 = UC210 DDC - Basic plus - Local (Water heat - Modulating) Remote (Water- N.C. 2-position)
DD85 = UC210 DDC - Basic plus - Local (Water heat - Modulating) Remote (Water- N.O. 2-position)
DD86 = UC210 DDC - Basic plus - Local (Water heat- N.O. 2-position) Remote (Water - Modulating)
DD87 = UC210 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - Modulating)
DD88 = UC210 DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - N.O. 2-position)
DD89 = UC210 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N.C. 2-position)
DD90 = UC210 DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - N.C. 2-position)
DD91 = UC210 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N.O. 2-position)
DD92 = UC210 DDC - Basic plus - Local (Electric heat - Staged) Remote (Staged)
DD95 = UC210 Basic (Electric Heat Modulating SCR)
DD96 = UC210 Basic plus - Local (Electric heat - Modulating SCR) Remote (Staged EH)
DD00 = Trane Actuator Only
ENCL = Shaft Only in Enclosure
FM00 = Other Actuator and Control
FM01 = Trane Supplied Actuator, Other Control
SE41 = Symbio™ 500 DDC - Basic (Cooling only) or VAV Dual-Duct
SE42 = Symbio 500 DDC - Basic (Water heat - N. C. 2-position)
SE43 = Symbio 500 DDC - Basic (Water heat - Modulating)
SE44 = Symbio 500 DDC - Basic (Electric heat - Staged)
SE45 = Symbio 500 DDC - Basic (Electric heat- PWM)
SE47 = Symbio 500 DDC-Basic (Water heat - N. O. 2-position)
SE53 = Symbio 500 DDC - Basic plus Local (Electric heat - pwm) Remote (Staged)

Digit 12, 13, 14, 15 — Controls (continued)

SE54 = Symbio 500 DDC - Basic plus Local (Water heat - Modulating) Remote (Water - N.C. 2–position)
SE55 = Symbio 500 DDC - Basic plus Local (Water heat - Modulating) Remote (Water-N.O. 2–position)
SE56 = Symbio 500 DDC - Basic plus Local (Water heat - N.O. 2-position) Remote (Water - Modulating)
SE57 = Symbio 500 DDC - Basic plus Local (Water heat - N.C. 2-position) Remote (Water - Modulating)
SE58 = Symbio 500 DDC - Basic plus Local (Water heat - N.O. 2-position) Remote (Water - N.O. 2-position)
SE59 = Symbio 500 DDC - Basic plus Local (Water heat - N.C. 2-position) Remote (Water - N.C. 2-position)
SE60 = Symbio 500 DDC - Basic plus Local (Water heat - N.O. 2-position) Remote (Water - N.C. 2-position)
SE61 = Symbio 500 DDC - Basic plus Local (Water heat - N.C. 2-position) Remote (Water - N.O. 2-position)
SE62 = Symbio 500 DDC - Basic plus Local (Electric heat - staged) Remote (Staged)
SE65 = Symbio 500 DDC - Control with Modulating SCR
SE66 = Symbio 500 DDC - Space Temp Control with Local SCR and Remote Stage Electric heat
SE71 = Symbio 210e DDC - Basic (Cooling only)
SE72 = Symbio 210e DDC - Basic (Water heat - N.C. - 2-position)
SE73 = Symbio 210e DDC - Basic (Water heat - Modulating)
SE74 = Symbio 210e DDC - Basic (Electric heat - staged)
SE75 = Symbio 210e DDC - Basic (Electric heat - PWM)
SE77 = Symbio 210e DDC - Basic (Water heat - N.O. - 2 position)
SE83 = Symbio 210e DDC - Basic plus - Local (Electric heat - PWM) Remote (Staged)
SE84 = Symbio 210e DDC - Basic plus - Local (Water heat - Modulating) Remote (Water - N.C. 2-position)
SE85 = Symbio 210e DDC - Basic plus - Local (Water heat - Modulating) Remote (Water - N.O. 2-position)
SE86 = Symbio 210e DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - Modulating)
SE87 = Symbio 210e DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - Modulating)
SE88 = Symbio 210e DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - N.O. 2-position)
SE89 = Symbio 210e DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N.C. 2-position)
SE90 = Symbio 210e DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - N.C. 2-position)
SE91 = Symbio 210e DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N.O. 2-position)

Digit 12, 13, 14, 15 — Controls (continued)

SE92 = Symbio 210e DDC - Basic plus - Local (Electric heat - Staged) Remote (Staged)
SE95 = Symbio 210e DDC - Control with Modulating SCR
SE96 = Symbio 210e DDC - Space Temp Control with Local SCR and Remote Staged Electric heat
SY71 = Symbio 210 DDC - Basic (Cooling only)
SY72 = Symbio 210 DDC - Basic (Water heat- N. C. - 2-position)
SY73 = Symbio 210 DDC - Basic (Water heat - Modulating)
SY74 = Symbio 210 DDC - Basic (Electric heat - staged)
SY75 = Symbio 210 DDC - Basic (Electric heat - PWM)
SY77 = Symbio 210 DDC - Basic (Water heat - N. O. - 2-position)
SY83 = Symbio 210 DDC - Basic plus - Local (Electric heat - PWM) Remote (Staged)
SY84 = Symbio 210 DDC - Basic plus - Local (Water heat - Modulating) Remote (Water - N.C. 2-position)
SY85 = Symbio 210 DDC - Basic plus - Local (Water heat - Modulating) Remote (Water - N.O. 2-position)
SY86 = Symbio 210 DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - Modulating)
SY87 = Symbio 210 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - Modulating)
SY88 = Symbio 210 DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - N. O. 2-position)
SY89 = Symbio 210 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N. C. 2-position)
SY90 = Symbio 210 DDC - Basic plus - Local (Water heat - N.O. 2-position) Remote (Water - N. C. 2-position)
SY91 = Symbio™ 210 DDC - Basic plus - Local (Water heat - N.C. 2-position) Remote (Water - N. O. 2-position)
SY92 = Symbio 210 DDC - Basic plus - Local (Electric heat - Staged) Remote (Staged)
SY95 = Symbio 210 DDC - Control with Modulating SCR
SY96 = Symbio 210 DDC - Space Temp Control with Local SCR and Remote Staged Electric heat

Digit 16 — Insulation

B = 1" Matte-faced
D = 1" Foil-faced
F = 1" Double Wall
G = 3/8" Closed-cell

Digit 17 — Motor Type

D = PSC Motor
E = High-efficiency Electronically Commutated Motor (ECM)
F = Variable Speed High-efficiency Electronically Commutated Motor (ECV)

Digit 18 — Motor Voltage

1 = 115/60/1
2 = 277/60/1
4 = 208/60/1

Digit 19 — Outlet Connection

1 = Flanged
2 = Slip–and-Drive Connection

Digit 20 — Attenuator

0 = None
A = Integral Return Attenuator
T = Thinline Suppressor

Digit 21 — Water Coil

0 = None
3 = 1 Row Discharge Installed LH
4 = 1 Row Discharge Installed RH
5 = 2 Row Discharge Installed LH
6 = 2 Row Discharge Installed RH
C = 1 Row Premium, Hot Coil on Discharge LH
D = 2 Row Premium, Hot Coil on Discharge LH
E = 1 Row Premium, Hot Coil on Discharge RH
F = 2 Row Premium, Hot Coil on Discharge RH

Digit 22 — Electrical Connections

F = Flippable Left and Right Hand

Digit 23 — Transformer

0 = Not Applicable

Digit 24 — Disconnect Switch

0 = None
W = With

Note: *Electric reheat with door interlocking power disconnect, cooling only and water reheat with toggle disconnect.*

Digit 25 — Power Fuse

0 = None
W = With

Digit 26 — Electric Heat Voltage

0 = None
A = 208/60/1
B = 208/60/3
C = 240/60/1
D = 277/60/1
E = 480/60/1
F = 480/60/3
G = 347/60/1
H = 575/60/3
J = 380/50/3

Digit 27, 28, 29 — Electric Heat kW

000 = None
010 = 1.0 kW
015 = 1.5 kW
200 = 20.0 kW

Notes:

- *0.5 to 8.0 kW in 1/2 kW increments.*
- *8.0 to 18.0 kW in 1 kW increments.*
- *18.0 to 20.0 kW in 2 kW increments.*

Digit 30 — Electric Heat Stages

0 = None
1 = 1 Stage
2 = 2 Stages Equal

Digit 31 — Electric Heat Contactors

0 = None
1 = 24V Magnetic
5 = 0 to 10 Vdc SCR Heat; Symbio™ 500, UC400
6 = 0 to 10 Vdc SCR Heat; FMTD/ENCL/DD00

Notes: *SCR cannot be selected with the following:*

- *kW > 10,208V, 3Ph, Low Height*
- *kW > 22,480V, 3Ph, Low Height*
- *Voltage = 575V*

Digit 32 — Air Switch

0 = Not Applicable
W = With

Digit 33 — Not Used

0 = Not Applicable

Digit 34 — Actuator

0 = Standard
A = Belimo™ Actuator
B = Spring return, Normally Open
C = Spring return, Normally Closed
G = Trane Analog Actuator (UC210 or UC400 only)

Digit 35 — Wireless Sensors

0 = None
3 = Trane Air-Fi® Wireless Communications Interface

Note: *All sensors selected in accessories.*

Digit 36 — Pre-wired Factory Solutions

0 = None
1 = Factory-mounted DTS
2 = HW Valve Harness
3 = Both DTS/HW Valve Harness

Digit 37 — Not Used

0 = Not Applicable

Digit 38 — Piping Package

0 = None
A = 2-Way Automatic Balancing
B = 3-Way Automatic Balancing
C = 2-Way Standard Valve Only, Floating Point Actuator
D = 3-Way Standard Valve Only, Floating Point Actuator
E = 2-Way Standard Valve Piping Package, Floating Point Actuator
F = 3-Way Standard Valve Piping Package, Floating Point Actuator
G = 2-Way Belimo Valve Only, Floating Point Actuator
H = 3-Way Belimo Valve Only, Floating Point Actuator
J = 2-Way Belimo Valve Piping Package, Floating Point Actuator
K = 3-Way Belimo Valve Piping Package, Floating Point Actuator
L = 2-Way Belimo Valve Only, Analog Actuator
M = 3-Way Belimo Valve Only, Analog Actuator
N = 2-Way Belimo Valve Piping Package, Analog Actuator
P = 3-Way Belimo Valve Piping Package, Analog Actuator

Digit 39 — Water Valve

0 = None
1 = Trane HW Valve 0.7 Cv
2 = Trane HW Valve 2.7 Cv
5 = Analog HW Valve, Field Provided (UC210 or UC400 only)
6 = Trane HW Valve 1.7 Cv
7 = Trane HW Valve 5.0 Cv
A = Belimo HW Valve, 0.3 Cv
B = Belimo HW Valve, 0.46 Cv
C = Belimo HW Valve, 0.8 Cv
D = Belimo HW Valve, 1.2 Cv
E = Belimo HW Valve, 1.9 Cv
F = Belimo HW Valve, 3.0 Cv
G = Belimo HW Valve, 4.7 Cv

Digit 40 — Flow Rate

0 = None
A = 0.5 gpm, 0.03 l/s
B = 1.0 gpm, 0.06 l/s
C = 1.5 gpm, 0.09 l/s
D = 2.0 gpm, 0.13 l/s
E = 2.5 gpm, 0.16 l/s
F = 3.0 gpm, 019 l/s
G = 3.5 gpm, 0.22 l/s
H = 4.0 gpm, 0.25 l/s
J = 4.5 gpm, 0.28 l/s
K = 5.0 gpm, 0.31 l/s
L = 5.5 gpm, 0.35 l/s
M = 6.0 gpm, 0.38 l/s
N = 6.5 gpm, 0.41 l/s
P = 7.0 gpm, 0.44 l/s
Q = 7.5 gpm, 0.47 l/s

Fan Powered VAV Units - Parallel

Digit 1, 2 — Unit Type

VP = VariTrane™ Fan-Powered Parallel

Digit 3— Reheat

C = Cooling Only
E = Electric Heat
W = Hot Water Heat

Digit 4 — Development Sequence

F = Sixth

Digit 5, 6 — Primary Air Valve

04 = 4" inlet (225 cfm)
05 = 5" inlet (350 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
12 = 12" inlet (2000 cfm
14 = 14" inlet (3000 cfm)
16 = 16" inlet (4000 cfm)

Digit 7, 8 — Secondary Air Valve Used

00 = N/A

Digit 9 — Fan

P = 02SQ Fan (500 nom cfm)
Q =03SQ Fan (1100 nom cfm)
R = 04SQ Fan (1350 nom cfm)
S = 05SQ Fan (1550 nom cfm)
T =06SQ Fan (1850 nom cfm)
U = 07SQ Fan (2000 nom cfm)

Digit 10, 11 — Design Sequence

**** = Factory Assigned

Digit 12, 13, 14, 15 — Controls

DD41 = UC400 DDC- Basic (No water or electric heat)
DD42 = UC400 DDC- Basic (Water heat- N.C. 2-position)
DD43 = UC400 DDC- Basic (Water heat - Modulating)
DD44 = UC400 DDC- Basic (Electric heat- Staged)
DD45 = UC400 DDC- Basic (Electric heat- PWM)
DD47 = UC400 DDC- Basic (Water heat- N.O. 2-position)
DD53 = UC400 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)

Digit 12, 13, 14, 15 — Controls (Continued)

DD58 = UC400 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
DD59 =UC400 DDC- Basic plus Local (Water heat-Modulating) Remote (Water- N.C. 2-position)
DD60 = UC400 DDC- Basic Plus Local (Water Heat- N.O. 2-position) Remote Water- N.C. 2-position)
DD61 = UC400 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
DD62 = UC400 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged EH)
DD65 = UC400 Basic (Electric Heat Modulating SCR)
DD66 = UC400 Basic plus- Local (Electric heat-Modulating SCR) Remote (Staged EH)
DD71 = UC210 DDC- Basic (No water or electric heat)
DD72 = UC210 DDC- Basic (Water heat- N.C. 2-position)
DD73 = UC210 DDC- Basic (Water heat-Modulating)
DD74 = UC210 DDC- Basic (Electric heat- Staged)
DD75 = UC210 DDC- Basic (Electric heat- PWM)
DD77 = UC210 DDC- Basic (Water heat- N.O. 2-position)
DD83 = UC210 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)
DD84 = UC210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water-N.C. 2-position)
DD85 = UC210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water-N.O. 2-position)
DD86 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)
DD87 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
DD88 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
DD89 = UC210 DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
DD90 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
DD91 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
DD92 = UC210 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
DD95 = UC210 Basic (Electric Heat Modulating SCR)
DD96 = UC210 Basic plus- Local (Electric heat-Modulating SCR) Remote (Staged EH)

Digit 12, 13, 14, 15 — Controls (continued)

DD00 = Trane Actuator Only
ENCL = Shaft Only in Enclosure
FM00 = Other Actuator and Control
FM01 = Trane Supplied Actuator, Other Ctrl
SE41 = Symbio™ 500 DDC-Basic (Cooling only) or VAV Dual-Duct
SE42 = Symbio™ 500 DDC-Basic (Water heat-N. C. 2-position)
SE43 = Symbio™ 500 DDC-Basic (Water heat-Modulating)
SE44 = Symbio™ 500 DDC-Basic (Electric heat-Staged)
SE45 = Symbio™ 500 DDC-Basic (Electric heat-PWM)
SE47 = Symbio™ 500 DDC-Basic (Water heat-N. O. 2-position)
SE53 = Symbio™ 500 DDC-Basic plus Local (Electric heat-pwm) Remote (Staged)
SE54 = Symbio™ 500 DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.C. 2–position)
SE55 = Symbio™ 500 DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.O. 2–position)
SE56 = Symbio™ 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-Modulating)
SE57 = Symbio™ 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-Modulating)
SE58 = Symbio™ 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.O. 2-position)
SE59 = Symbio™ 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.C. 2-position)
SE60 = Symbio™ 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.C. 2-position)
SE61 = Symbio 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.O. 2-position)
SE62 = Symbio 500 DDC-Basic plus Local (Electric heat-staged) Remote (Staged)
SE65 = Symbio 500 DDC-Control with Modulating SCR
SE66 = Symbio 500 DDC-Space Temp Control with Local SCR and Remote Stage Electric heat

Digit 12, 13, 14, 15 — Controls (continued)

SE71 = Symbio 210e DDC - Basic (Cooling only)
SE72 = Symbio 210e DDC - Basic (Water heat- N. C.- 2 position)
SE73 = Symbio 210e DDC - Basic (Water heat- Modulating)
SE74 = Symbio 210e DDC - Basic (Electric heat- staged)
SE75 = Symbio 210e DDC - Basic (Electric heat- PWM)
SE77 = Symbio 210e DDC -Basic (Water heat -N. O.- 2 position)
SE83 = Symbio 210e DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged)
SE84 = Symbio 210e DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
SE85 = Symbio 210e DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
SE86 = Symbio 210e DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)
SE87 = Symbio 210e DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
SE88 = Symbio 210e DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
SE89 = Symbio 210e DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
SE90 = Symbio 210e DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
SE91 = Symbio 210e DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
SE92 = Symbio 210e DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
SE95 = Symbio 210e DDC - Control with Modulating SCR
SE96 = Symbio 210e DDC - Space Temp Control with Local SCR and Remote Staged Electric heat
SY71 = Symbio 210 DDC - Basic (Cooling only)
SY72 = Symbio 210 DDC - Basic (Water heat- N. C.- 2 position)

Digit 12, 13, 14, 15 — Controls (continued)

SY73 = Symbio 210 DDC - Basic (Water heat- Modulating)
SY74 = Symbio 210 DDC - Basic (Electric heat- staged)
SY75 = Symbio 210 DDC - Basic (Electric heat- PWM)
SY77 = Symbio 210 DDC -Basic (Water heat -N.O.- 2 position)
SY83 = Symbio 210 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged)
SY84 = Symbio 210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
SY85 = Symbio 210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
SY86 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)
SY87 = Symbio 210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
SY88 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
SY89 = Symbio 210 DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
SY90 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
SY91 = Symbio 210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
SY92 = Symbio 210 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
SY95 = Symbio 210 DDC - Control with Modulating SCR
SY96 = Symbio 210 DDC - Space Temp Control with Local SCR and Remote Staged Electric heat

Digit 16 — Insulation

A = 1/2” Matte-faced
B = 1” Matte-faced
D = 1” Foil-faced
F = 1” Double Wall
G = 3/8” Closed-cell

Digit 17— Motor Type

D = PSC Motor
E = High-efficiency Electronically Commutated Motor (ECM)
F = Variable Speed High-efficiency Electronically Commutated Motor (ECV)

Digit 18 — Motor Voltage

1 = 115/60/1
2 = 277/60/1
4 = 208/60/1
5 = 230/50/1

Digit 19 — Outlet Connection

1 = Flanged
2 = Slip–and-Drive Connection

Digit 20 — Attenuator

0 = None
B = Suppressor

Digit 21 — Water Coil

0 = None
1 = 1 Row, Plenum Inlet Installed
2 = 2 Row, Plenum Inlet Installed
3 = 1 Row, Discharge Installed LH
4 = 1 Row, Discharge Installed RH
5 = 2 Row, Discharge Installed LH
6 = 2 Row, Discharge Installed RH
A = 1 Row Premium, Plenum Inlet Installed
B = 2 Row Premium, Plenum Inlet Installed
C = 1 Row Premium, Hot Coil on Discharge LH
D = 1 Row Premium, Hot Coil on Discharge RH
E = 2 Row Premium, Hot Coil on Discharge LH
F = 2 Row Premium, Hot Coil on Discharge RH

Digit 22 — Electrical Connections

L = Left, Airflow hits in face
R = Right, Airflow hits in face

Digit 23 — Transformer

0 = Not Applicable

Digit 24 — Disconnect Switch

0 = None
W = With

Note: *Electric reheat door comes with interlocking power disconnect is standard, cooling only and water reheat Comes with toggle on/off switch.*

Digit 25 — Power Fuse

0 = None
W = With

Digit 26 — Electric Heat Voltage

0 = None
A = 208/60/1
B = 208/60/3
C = 240/60/1
D = 277/60/1
E = 480/60/1
F = 480/60/3
H = 575/60/3
J = 380/50/3
K = 120/60/1

Digit 27, 28, 29 — Electric Heat kW

000 = None
010 = 1.0 kW
015 = 1.5 kW
460 = 46.0 kW

Notes:

- *0.5 to 8.0 kW in 1/2 kW increments*
- *8.0 to 18.0 kW in 1 kW increments*
- *18.0 to 46.0 kW in 2 kW increments*

Digit 30 — Electric Heat Stages

0 = None
1 = 1 Stage
2 = 2 Stages Equal
3 = 3 Stages Equal

Digit 31 — Electric Heat Contactors

0 = None
1 = 24V Magnetic
5 = 0-10 Vdc SCR Heat; Symbio™ 500, UC400
6 = 0-10 Vdc SCR Heat; FMTD/ENCL/DD00
7 = 24V SSR (Solid State Relay)

Notes: *SCR cannot be selected with the following:*

- *kW>10,208V, 3Ph, Low Height*
- *kW>22,480V, 3Ph, Low Height*
- *Voltage = 575V*

Digit 32 — Air Switch

0 = Not Applicable
W = With

Digit 33 — Not Used

0 = Not Applicable

Digit 34 — Actuator

0 = Standard
A = Belimo™ Actuator
G = Trane Analog Actuator (Trane Controls only)

Digit 35 — Wireless Sensors

0 = None
3 = Trane Air-Fi® Wireless Communications Interface

Note: *All sensors selected in accessories.*

Digit 36 — Pre-wired Factory Solutions

0 = None
1 = Factory Wired Duct Temperature Sensor (DTS)
2 = HW Valve Harness
3 = Both Factory Wired DTS/HW Valve Harness

Digit 37 — Bottom Access

0 = None
W = Bottom Access

Digit 38 — Piping Package

0 = None
C = 2-Way Standard Valve Only, Floating Point Actuator
D = 3-Way Standard Valve Only, Floating Point Actuator
E = 2-Way Standard Valve Piping Package, Floating Point Actuator
F = 3-Way Standard Valve Piping Package, Floating Point Actuator
G = 2-Way Belimo Valve Only, Floating Point Actuator
H = 3-Way Belimo Valve Only, Floating Point Actuator
J = 2-Way Belimo Valve Piping Package, Floating Point Actuator
K = 3-Way Belimo Valve Piping Package, Floating Point Actuator
L = 2-Way Belimo Valve Only, Analog Actuator
M = 3-Way Belimo Valve Only, Analog Actuator
N = 2-Way Belimo Valve Piping Package, Analog Actuator
P = 3-Way Belimo Valve Piping Package, Analog Actuator

Digit 39 — Water Valve

0 = None
1 = Trane HW Valve 0.7 Cv
2 = Trane HW Valve 2.7 Cv
5 = Analog HW Valve, Field Provided (Trane Controls only)
6 = Trane HW Valve 1.7 Cv
7 = Trane HW Valve 5.0 Cv
A = Belimo HW Valve, 0.3 Cv
B = Belimo HW Valve, 0.46 Cv
C = Belimo HW Valve, 0.8 Cv
D = Belimo HW Valve, 1.2 Cv
E = Belimo HW Valve, 1.9 Cv
F = Belimo HW Valve, 3.0 Cv
G = Belimo HW Valve, 4.7 Cv

Digit 40 — Flow Rate

0 = None
A = 0.5 gpm, 0.03 l/s
B = 1.0 gpm, 0.06 l/s
C = 1.5 gpm, 0.09 l/s
D = 2.0 gpm, 0.13 l/s
E = 2.5 gpm, 0.16 l/s
F = 3.0 gpm, 019 l/s
G = 3.5 gpm, 0.22 l/s
H = 4.0 gpm, 0.25 l/s
J = 4.5 gpm, 0.28 l/s
K = 5.0 gpm, 0.31 l/s
L = 5.5 gpm, 0.35 l/s
M = 6.0 gpm, 0.38 l/s
N = 6.5 gpm, 0.41 l/s
P = 7.0 gpm, 0.44 l/s
Q = 7.5 gpm, 0.47 l/s

Fan Powered Low Height VAV Units - Parallel

Digit 1, 2 — Unit Type

LP = VariTrane™ Fan-Powered Low Height Parallel

Digit 3 — Reheat

C = Cooling Only
E = Electric Heat
W = Hot Water Heat

Digit 4 — Development Sequence

F = Sixth

Digit 5, 6 — Primary Air Valve

05 = 5" inlet (225 cfm)
06 = 6" inlet (500 cfm)
08 = 8" inlet (900 cfm)
10 = 10" inlet (1400 cfm)
14 = 8" x 14" inlet (1800 cfm)

Digit 7, 8 — Secondary Air Valve Used

00 = N/A

Digit 9 — Fan

A = DS02 Fan (1300 nom cfm)

Digit 10, 11 — Design Sequence

** = Factory Assigned

Digit 12, 13, 14, 15 — Controls

DD41 = UC400 DDC- Basic (No water or electric heat)
DD42 = UC400 DDC- Basic (Water heat- N.C. 2-position)

Digit 12, 13, 14, 15 — Controls (Continued)

DD43 = UC400 DDC- Basic (Water heat - Modulating)
DD44 = UC400 DDC- Basic (Electric heat- Staged)
DD45 = UC400 DDC- Basic (Electric heat- PWM)
DD47 = UC400 DDC- Basic (Water heat- N.O. 2-position)
DD53 = UC400 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)
DD41 = UC400 DDC- Basic (No water or electric heat)
DD42 = UC400 DDC- Basic (Water heat- N.C. 2-position)
DD43 = UC400 DDC- Basic (Water heat -Modulating)
DD44 = UC400 DDC- Basic (Electric heat- Staged)
DD45 = UC400 DDC- Basic (Electric heat- PWM)
DD47 = UC400 DDC- Basic (Water heat- N.O. 2-position)
DD53 = UC400 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)
DD58 = UC400 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
DD59 =UC400 DDC- Basic plus Local (Water heat-Modulating) Remote (Water- N.C. 2-position)
DD60 = UC400 DDC- Basic Plus Local (Water Heat- N.O. 2-position) Remote Water- N.C. 2-position)
DD61 = UC400 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
DD62 = UC400 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged EH)
DD65 = UC400 Basic (Electric Heat Modulating SCR)
DD66 = UC400 Basic plus- Local (Electric heat-Modulating SCR) Remote (Staged EH)
DD71 = UC210 DDC- Basic (No water or electric heat)
DD72 = UC210 DDC- Basic (Water heat- N.C. 2-position)
DD73 = UC210 DDC- Basic (Water heat-Modulating)
DD74 = UC210 DDC- Basic (Electric heat- Staged)
DD75 = UC210 DDC- Basic (Electric heat- PWM)
DD77 = UC210 DDC- Basic (Water heat- N.O. 2-position)
DD83 = UC210 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged EH)
DD84 = UC210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water-N.C. 2-position)
DD85 = UC210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water-N.O. 2-position)
DD86 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)

Digit 12, 13, 14, 15 — Controls (continued)

DD87 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
DD88 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
DD89 = UC210 DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
DD90 = UC210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
DD91 = UC210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
DD92 = UC210 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
DD95 = UC210 Basic (Electric Heat Modulating SCR)
DD96 = UC210 Basic plus- Local (Electric heat-Modulating SCR) Remote (Staged EH)
DD00 = Trane Actuator Only
ENCL = Shaft Only in Enclosure
FM00 = Other Actuator and Control
FM01 = Trane Supplied Actuator, Other Ctrl
SE41 = Symbio™ 500 DDC-Basic (Cooling only) or VAV Dual-Duct
SE42 = Symbio™ 500 DDC-Basic (Water heat-N. C. 2-position)
SE43 = Symbio™ 500 DDC-Basic (Water heat-Modulating)
SE44 = Symbio™ 500 DDC-Basic (Electric heat-Staged)
SE45 = Symbio™ 500 DDC-Basic (Electric heat-PWM)
SE47 = Symbio™ 500 DDC-Basic (Water heat-N. O. 2-position)
SE53 = Symbio™ 500 DDC-Basic plus Local (Electric heat-pwm) Remote (Staged)
SE54 = Symbio™ 500 DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.C. 2–position)
SE55 = Symbio™ 500 DDC-Basic plus Local (Water heat Modulating) Remote (Water-N.O. 2–position)
SE56 = Symbio™ 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-Modulating)
SE57 = Symbio™ 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-Modulating)
SE58 = Symbio™ 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.O. 2-position)
SE59 = Symbio™ 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.C. 2-position)
SE60 = Symbio™ 500 DDC-Basic plus Local (Water heat N.O. 2-position) Remote (Water-N.C. 2-position)
SE61 = Symbio 500 DDC-Basic plus Local (Water heat N.C. 2-position) Remote (Water-N.O. 2-position)
SE62 = Symbio 500 DDC-Basic plus Local (Electric heat-staged) Remote (Staged)
SE65 = Symbio 500 DDC-Control with Modulating SCR
SE66 = Symbio 500 DDC-Space Temp Control with Local SCR and Remote Stage Electric heat

Digit 12, 13, 14, 15 — Controls (continued)

SE71 = Symbio 210e DDC - Basic (Cooling only)
SE72 = Symbio 210e DDC - Basic (Water heat- N. C.- 2 position)
SE73 = Symbio 210e DDC - Basic (Water heat- Modulating)
SE74 = Symbio 210e DDC - Basic (Electric heat- staged)
SE75 = Symbio 210e DDC - Basic (Electric heat- PWM)
SE77 = Symbio 210e DDC -Basic (Water heat -N. O.- 2 position)
SE83 = Symbio 210e DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged)
SE84 = Symbio 210e DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
SE85 = Symbio 210e DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
SE86 = Symbio 210e DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)
SE87 = Symbio 210e DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
SE88 = Symbio 210e DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
SE89 = Symbio 210e DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
SE90 = Symbio 210e DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
SE91 = Symbio 210e DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
SE92 = Symbio 210e DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
SE95 = Symbio 210e DDC - Control with Modulating SCR
SE96 = Symbio 210e DDC - Space Temp Control with Local SCR and Remote Staged Electric heat
SY71 = Symbio 210 DDC - Basic (Cooling only)
SY72 = Symbio 210 DDC - Basic (Water heat- N. C.- 2 position)

Digit 12, 13, 14, 15 — Controls (continued)

SY73 = Symbio 210 DDC - Basic (Water heat- Modulating)
SY74 = Symbio 210 DDC - Basic (Electric heat- staged)
SY75 = Symbio 210 DDC - Basic (Electric heat- PWM)
SY77 = Symbio 210 DDC -Basic (Water heat -N.O.- 2 position)
SY83 = Symbio 210 DDC- Basic plus- Local (Electric heat- PWM) Remote (Staged)
SY84 = Symbio 210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.C. 2-position)
SY85 = Symbio 210 DDC- Basic plus- Local (Water heat- Modulating) Remote (Water- N.O. 2-position)
SY86 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- Modulating)
SY87 = Symbio 210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- Modulating)
SY88 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.O. 2-position)
SY89 = Symbio 210 DDC-Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.C. 2-position)
SY90 = Symbio 210 DDC- Basic plus- Local (Water heat- N.O. 2-position) Remote (Water- N.C. 2-position)
SY91 = Symbio 210 DDC- Basic plus- Local (Water heat- N.C. 2-position) Remote (Water- N.O. 2-position)
SY92 = Symbio 210 DDC- Basic plus- Local (Electric heat- Staged) Remote (Staged)
SY95 = Symbio 210 DDC - Control with Modulating SCR
SY96 = Symbio 210 DDC - Space Temp Control with Local SCR and Remote Staged Electric heat

Digit 16 — Insulation

A = 1/2" Matte-faced
B = 1" Matte-faced
D = 1" Foil-faced
F = 1" Double Wall
G = 3/8" Closed-cell

Digit 17 — Motor Type

E = High-efficiency Electronically Commutated Motor (ECM)
F = Variable Speed High-efficiency Electronically Commutated Motor (ECV)

Digit 18 — Motor Voltage

1 = 115/60/1
2 = 277/60/1
4 = 208/60/1

Digit 19 — Outlet Connection

1 = Flanged

Digit 20 — Attenuator

0 = None
T = Thinline Suppressor

Digit 21 — Water Coil

0 = None
1 = 1 Row, Plenum Inlet Installed
2 = 2 Row, Plenum Inlet Installed
3 = 1 Row, Discharge Installed LH
4 = 1 Row, Discharge Installed RH
5 = 2 Row, Discharge Installed LH
6 = 2 Row, Discharge Installed RH
A = 1 Row Premium, Plenum Inlet Installed
B = 2 Row Premium, Plenum Inlet Installed
C = 1 Row Premium, Hot Coil on Discharge LH
D = 1 Row Premium, Hot Coil on Discharge RH
E = 2 Row Premium, Hot Coil on Discharge LH
F = 2 Row Premium, Hot Coil on Discharge RH

Digit 22 — Electrical Connections

F = Flippable Left and Right Hand

Digit 23 — Transformer

0 = Not Applicable

Digit 24 — Disconnect Switch

0 = None
W = With

Note: *Electric reheat door comes with interlocking power disconnect is standard, cooling only and water reheat Comes with toggle on/off switch.*

Digit 25 — Power Fuse

0 = None
W = With

Digit 26 — Electric Heat Voltage

0 = None
A = 208/60/1
B = 208/60/3
C = 240/60/1
D = 277/60/1
E = 480/60/1
F = 480/60/3
H = 575/60/3
J = 380/50/3

Digit 27, 28, 29 — Electric Heat kW

000 = None
010 = 1.0 kW
015 = 1.5 kW

Notes:

- *0.5 to 8.0 kW in 1/2 kW increments*
- *8.0 to 14.0 kW in 1 kW increments*

Digit 30 — Electric Heat Stages

0 = None
1 = 1 Stage
2 = 2 Stages Equal

Digit 31 — Electric Heat Contactors

0 = None
1 = 24V Magnetic
5 = 0-10 Vdc SCR Heat; Symbio™ 500, UC400
6 = 0-10 Vdc SCR Heat; FMTD/ENCL/DD00

Notes: *SCR cannot be selected with the following:*

- *kW>10,208V, 3Ph, Low Height*
- *kW>22,480V, 3Ph, Low Height*
- *Voltage = 575V*

Digit 32 — Air Switch

0 = Not Applicable
W = With

Digit 33 — Not Used

0 = Not Applicable

Digit 34 — Actuator

0 = Standard
A = Belimo™ Actuator
G = Trane Analog Actuator (Trane Controls only)

Digit 35 — Wireless Sensors

0 = None
3 = Trane Air-Fi® Wireless Communications Interface

Note: *All sensors selected in accessories.*

Digit 36 — Pre-wired Factory Solutions

0 = None
1 = Factory Wired Duct Temperature Sensor (DTS)
2 = HW Valve Harness
3 = Both Factory Wired DTS/HW Valve Harness

Digit 37 — Bottom Access

W = Bottom Access

Digit 38 — Piping Package

0 = None
C = 2-Way Standard Valve Only, Floating Point Actuator
D = 3-Way Standard Valve Only, Floating Point Actuator
E = 2-Way Standard Valve Piping Package, Floating Point Actuator
F = 3-Way Standard Valve Piping Package, Floating Point Actuator
G = 2-Way Belimo Valve Only, Floating Point Actuator
H = 3-Way Belimo Valve Only, Floating Point Actuator
J = 2-Way Belimo Valve Piping Package, Floating Point Actuator
K = 3-Way Belimo Valve Piping Package, Floating Point Actuator
L = 2-Way Belimo Valve Only, Analog Actuator
M = 3-Way Belimo Valve Only, Analog Actuator
N = 2-Way Belimo Valve Piping Package, Analog Actuator
P = 3-Way Belimo Valve Piping Package, Analog Actuator

Digit 39 — Water Valve

0 = None
1 = Trane HW Valve 0.7 Cv
2 = Trane HW Valve 2.7 Cv
5 = Analog HW Valve, Field Provided (Trane Controls only)
6 = Trane HW Valve 1.7 Cv
7 = Trane HW Valve 5.0 Cv
A = Belimo HW Valve, 0.3 Cv
B = Belimo HW Valve, 0.46 Cv
C = Belimo HW Valve, 0.8 Cv
D = Belimo HW Valve, 1.2 Cv
E = Belimo HW Valve, 1.9 Cv
F = Belimo HW Valve, 3.0 Cv
G = Belimo HW Valve, 4.7 Cv

Digit 40 — Flow Rate

0 = None
A = 0.5 gpm, 0.03 l/s
B = 1.0 gpm, 0.06 l/s
C = 1.5 gpm, 0.09 l/s
D = 2.0 gpm, 0.13 l/s
E = 2.5 gpm, 0.16 l/s
F = 3.0 gpm, 019 l/s
G = 3.5 gpm, 0.22 l/s
H = 4.0 gpm, 0.25 l/s
J = 4.5 gpm, 0.28 l/s
K = 5.0 gpm, 0.31 l/s
L = 5.5 gpm, 0.35 l/s
M = 6.0 gpm, 0.38 l/s
N = 6.5 gpm, 0.41 l/s
P = 7.0 gpm, 0.44 l/s
Q = 7.5 gpm, 0.47 l/s

Chilled Water Sensible Cooling Terminal Units

Digit 1, 2,3, 4 — Unit Model

LDCF = LH Series DOAS Fan Powered - Cooling Only
LDEF = LH Series DOAS Fan Powered - With Electric Heat
LDWF = LH Series DOAS Fan Powered - With Hot Water
VDCG = Series DOAS Fan Powered - Cooling Only
VDEG = Series DOAS Fan Powered - With Electric Heat
VDWG = Series DOAS Fan Powered - With Hot Water

Digit 5, 6 — Primary Inlet

04 = 4 in. inlet (225 cfm)
05 = 5 in. inlet (350 cfm)
06 = 6 in. inlet (500 cfm)
08 = 8 in. inlet (900 cfm)
10 = 10 in. inlet (1400 cfm)
12 = 12 in. inlet (2000 cfm)
RT = 8 in. x 14 in. inlet (1800 cfm)

Digit 7, 8 — Secondary Inlet

00 = N/A

Digit 9 — Fan

B = Low Height Fan - 100 to 1300 Cfm
1 = Small
2 = Medium
3 = Large

Digit 10, 11 — Design Sequence

L0 = Design Sequence

Digit 12, 13, 14, 15 — Unit Controls

ENCL = Shaft Only In Enclosure
DD00 = Trane Actuators Only
SC41 = UC400 DDC - Sensible Cooling - Basic (No Water Or Electric Heat)
SC43 = UC400 DDC - Sensible Cooling - Basic (Water Heat - Modulating)
SC44 = UC400 DDC - Sensible Cooling - Basic (Electric Heat - Staged)
SC62 = UC400 DDC - Sensible Cooling - Basic Plus Local (Electric Heat - Staged) Remote (Staged EH)
SC65 = UC400 DDC - Sensible Cooling - Basic (Electric Heat - Modulating SCR)
SC66 = UC400 DDC - Sensible Cooling - Basic Plus Local (Electric Heat - Modulating SCR) Remote (Staged EH)
DE41 = Symbio500 DDC - Sensible Cooling - Basic (No Water Or Electric Heat)
DE43 = Symbio500 DDC - Sensible Cooling - Basic (Water Heat - Modulating)
DE44 = Symbio500 DDC - Sensible Cooling - Basic (Electric Heat - Staged)
DE62 = Symbio500 DDC - Sensible Cooling - Basic Plus Local (Electric Heat - Staged) Remote (Staged EH)

Digit 12, 13, 14, 15 — Unit Controls (continued)

DE65 = Symbio500 DDC - Sensible Cooling - Basic (Electric Heat - Modulating SCR)
DE66 = Symbio500 DDC - Sensible Cooling - Basic Plus Local (Electric Heat - Modulating SCR) Remote (Staged EH)
DDSS = DDC Special
FM00 = OTHER Actuator and Control
FM01 = Trane Supplied Actuator, Other Control

Digit 16 — Insulation

B = 1 in. Matte-faced
D = 1 in. Foil-faced
F = 1 in. Double Wall
G = 3/8 in. Closed-cell
S = Special

Digit 17 — Motor Type

F = Variable Volume (ECM)
S = Special Motor

Digit 18 — Motor Voltage

1 = 115/60/1
2 = 277/60/1
4 = 208/60/1
S = Special Motor Voltage

Digit 19 — Outlet Connection

1 = Flanged Connection VDCG and VDEG
2 = Slip and Drive Connection VDWG

Digit 20 — Atteniuators

0 = No Attenuator
S = Special Attenuator

Digit 21 — Hot Water Coil

0 = No Hot Water Coil
3 = 1 Row Hot Coil on Discharge Left Hand
4 = 1 Row Hot Coil on Discharge Right Hand
5 = 2 Row Hot Coil on Discharge Left Hand
6 = 2 Row Hot Coil on Discharge Right Hand
C = 1 Row Premium Hot Coil on Discharge Left Hand
D = 1 Row Premium Hot Coil on Discharge Right Hand
E = 2 Row Premiuim Hot Coil on Discharge Left Hand
F = 2 Row Premium Hot Coil on Discharge Right Hand
G = One Row Water Coil
H = Two Row Water Coil
J = Three Row Water Coil
K = Four Row Water Coil

Digit 21 — Hot Water Coil (Continued)

L = One Row Premium Water Coil
M = Two Row Premium Water Coil
N = Three Row Premium Water Coil
P = Four Row Premium Water Coil
S = Special Hot Water Coil

Digit 22 — Hot Water Coil Connection

1 = Same Side Connection - Coil and Control
2 = Coil Connection Opposite of Control

Digit 23 — Unit Filter - 2 in.

0 = Construction Throw-Away Filter
8 = MERV 8 Filter
3 = MERV 13 Filter
S = Special Filter

Digit 24 — Toggle Switch

0 = With Toggle Switch VDCG and VDWG
W = Unit Disconnect with Toggle Switch VDEG
S = Special Toggle Switch

Digit 25 — Power Fuse

0 = No Fusing
W = With Power Fuse
S = Special Power Fuse

Digit 26 — Electric Heater Voltage

0 = No Heater Voltage
A = 208/60/1
B = 208/60/3
C = 240/60/1
D = 277/60/1
E = 480/60/1
F = 480/60/3
J = 380/50/3
K = 120/60/1
S = Special Electric Heater Voltage

Digit 27, 28, 29 — Electric Heater kW

000 = No kW
010 = 1.0 kW
015 = 1.5 kW
020 = 2.0 kW
025 = 2.5 kW
030 = 3.0 kW
035 = 3.5 kW
040 = 4.0 kW
045 = 4.5 kW
050 = 5.0 kW
055 = 5.5 kW

Digit 27, 28, 29 — Electric Heater kW (continued)

060 = 6.0 kW
065 = 6.5 kW
070 = 7.0 kW
075 = 7.5 kW
080 = 8.0 kW
090 = 9.0 kW
100 = 10.0 kW
110 = 11.0 kW
120 = 12.0 kW
130 = 13.0 kW
140 = 14.0 kW
150 = 15.0 kW
160 = 16.0 kW
170 = 17.0 kW
180 = 18.0 kW
200 = 20.0 kW
220 = 22.0 kW
SSS = Special kW

Digit 30 — Electric Heater Stage

0 = No Stages Of Heat
1 = 1 Stage
2 = 2 Stages Equal
S = Special Electric Heater Stage

Digit 31 — Electric Heater Control

0 = No Contactor
1 = 24 Volt Magnetic Contactor
5 = SCR Heat with Trane Controls
6 = SCR Heat FMTD/ENCL/DD00
7 = Solid State Relay
8 = Special Electric Heater Control

Digit 32 — Electric Heater Air Flow Switch

0 = No Air Flow Switch
W = With Air Flow Switch
S = Special Air Flow Switch

Digit 33 — Special Options Dual Power Connection

0 = No Special Options
S = Misc Special Options

Digit 34 — Actuator

0 = Standard Actuator - Floating Point
A = Belimo Actuator - Floating Point
B = Spring Return Actuator - Normally Open
C = Spring Return Actuator - Normally Closed
G = Trane Analog Actuator - Trane Conrols Only
S = Special Actuator

Digit 35 — Wireless Sensor

0 = Wired Sensor
3 = AirFi™ Wireless Communication Interface (FM)

Digit 36 — Pre-Wired Factory Solutions

0 = None
1 = Factory Terminated/Field Installed DTS
4 = Factory Terminated and Installed - DTS in Plenum
6 = Factory Terminated and Installed - DTS in Plenum
Factory Terminated/Field Installed CW and HW Valve Harness
7 = CW Valve Harness - Factory Wired
8 = CW and HW Valve Harness - Factory Wired
B = DTS with CW Valve Harness - Factory Wired

Digit 37 — Bottom Access

0 = Not Used For Product Coding

Digit 38 — Hot Water Piping Package

0 = None (No Piping Package)
C = 2-Way Standard Valve Only, Floating Point Actuator
D = 3-Way Standard Valve Only, Floating Point Actuator
E = 2-Way Standard Valve Piping Package, Floating Point Actuator
F = 3-Way Standard Valve Piping Package, Floating Point Actuator
G = 2-Way Belimo Valve Only, Floating Point Actuator
H = 3-Way Belimo Valve Only, Floating Point Actuator
J = 2-Way Belimo Valve Piping Package, Floating Point Actuator
K = 3-Way Belimo Valve Piping Package, Floating Point Actuator
L = 2-Way Belimo Valve Only, Analog Actuator
M = 3-Way Belimo Valve Only, Analog Actuator
N = 2-Way Belimo Valve Piping Package, Analog Actuator
P = 3-Way Belimo Valve Piping Package, Analog Actuator

Digit 39 — Water Valve

0 = None (No Water Valve)
1 = HW Valve, 0.7 Cv
2 = HW Valve, 2.7 Cv
5 = Analog HW Valve, Field Provided
6 = HW Valve, 1.7 Cv
7 = HW Valve, 5.0 Cv
A = HW Valve, 0.3 Cv, Belimo
B = HW Valve, 0.46 Cv, Belimo

Digit 39 — Water Valve (continued)

C = HW Valve, 0.8 Cv, Belimo
D = HW Valve, 1.2 Cv, Belimo
E = HW Valve, 1.9 Cv, Belimo
F = HW Valve, 3.0 Cv, Belimo
G = HW Valve, 4.7 Cv, Belimo

Digit 40 — Hot Water Flow Rate

0 = None (No Flow Rate)
A = 0.5 gpm (0.03 l/s)
R = 0.75 gpm (0.05 l/s)
B = 1 gpm (0.06 l/s)
S = 1.25 gpm (0.08 l/s)
C = 1.5 gpm (0.09 l/s)
T = 1.75 gpm (0.11 l/s)
D = 2 gpm (0.13 l/s)
E = 2.5 gpm (0.16 l/s)
F = 3 gpm (0.19 l/s)
G = 3.5 gpm (0.22 l/s)
H = 4 gpm (0.25 l/s)
J = 4.5 gpm (0.28 l/s)
K = 5 gpm (0.32 l/s)
L = 5.5 gpm (.035 l/s)
M = 6 gpm (0.38 l/s)
N = 6.5 gpm (0.41 l/s)
P = 7 gpm (0.44 l/s)
Q = 7.5 gpm (0.47 l/s)

Digit 41 — Sensible Cooling Coil

4 = Four Row Standard Water Coil
6 = Six Row Standard Water Coil

Digit 42 — Chilled Water Coil Connections

D = Cooling Coil Connections at Unit Dishcarge End
V = Cooling Coil Connections at Air Valve End

Digit 43 — Chilled Water Piping Package

0 = None (No Piping Package)
C = 2 Way Standard Valve Only, Floating Point Actuator
D = 3 Way Standard Valve Only, Floating Point Actuator
E = 2 Way Standard Valve Piping Package, Floating Point Actuator
F = 3 Way Standard Valve Piping Package, Floating Point Actuator
G = 2 Way Belimo Valve Only, Floating Point Actuator
H = 3 Way Belimo Valve Only, Floating Point Actuator
J = 2 Way Belimo Valve Piping Package, Floating Point Actuator
K = 3 Way Belimo Valve Piping Package, Floating Point Actuator
L = 2 Way Belimo Valve Only, Analog Actuator
M = 3 Way Belimo Valve Only, Analog Actuator
N = 2 Way Belimo Valve Piping Package, Analog Actuator
P = 3 Way Belimo Valve Piping Package, Analog Actuator

Digit 44 — Chilled Water Valve

0 = None (No Water Valve)
1 = CW VALVE 0.7 Cv
2 = CW VALVE 2.7 Cv
5 = Analog CW Valve, Field Provided
6 = CW Valve 1.7 Cv
7 = CW Valve 5.0 Cv
A = CW Valve 0.3 Cv
B = CW Valve 0.46 Cv
C = CW Valve 0.8 Cv
D = CW Valve 1.2 Cv
E = CW Valve 1.9 Cv
F = CW Valve 3.0 Cv
G = CW Valve 4.7 Cv

Digit 45 — Chilled Water Flow Rate

0 = None (No Flow Rate)
A = 0.5 GPM (0.03 L/s)
S = 0.75 GPM (0.05 L/s)
B = 1 GPM (0.06 L/s)
T = 1.25 GPM (0.06 L/s)
C = 1.5 GPM (0.09 L/s)
U = 1.75 GPM (0.09 L/s)
D = 2 GPM (0.13 L/s)
E = 2.5 GPM (0.16 L/s)
F = 3 GPM (0.19 L/s)
G = 3.5 GPM (0.22 L/s)
H = 4 GPM (0.25 L/s)
J = 4.5 GPM (0.28 L/s)
K = 5 GPM (0.32 L/S)
L = 5.5 GPM (0.35 L/s)
M = 6 GPM (0.38 L/s)
N = 6.5 GPM (0.41 L/s)
P = 7 GPM (0.44 L/s)
Q = 7.5 GPM (0.47 L/s)
R = 8 GPM (0.50 L/s)

Unit Information

Single-Duct VAV Units

The basic unit consists of a sheet metal casing with an air valve, which is used to modulate the air being delivered into the occupied zone. The unit is designed to modulate either cooling or heating air between 40°F and 140°F (4.44°C and 60°C). Air enters the air valve through the round or rectangular inlet and exits into the sheet metal casing to be distributed to the zone either through integral round outlets in the casing or through rectangular duct attached to the discharge of the unit.

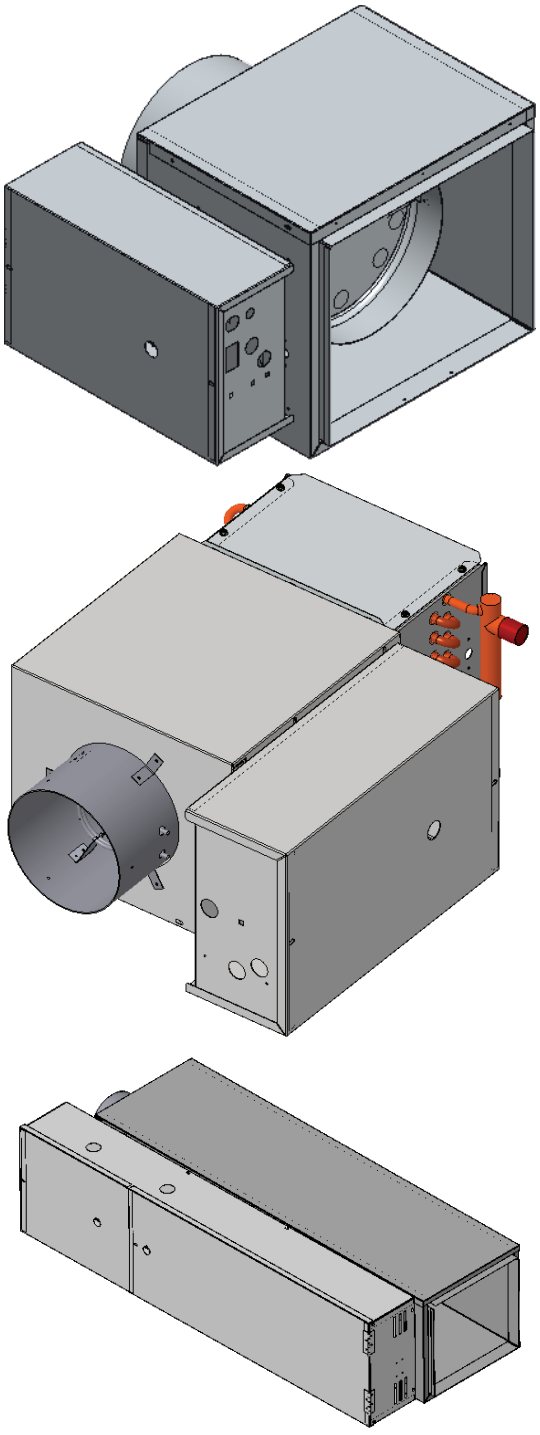
The basic unit can also be ordered with factory-mounted electric or hot water heating coils attached to the discharge.

These reheat units are used primarily to reheat air-to-zone temperature when the load in the occupied space is low.

Primary air is measured by a flow-sensor that is upstream of the damper and is modulated through the VariTrane™ air valve by rotating the damper blade. All air valves have a round/rectangular inlet for easy fit-up with incoming duct work.

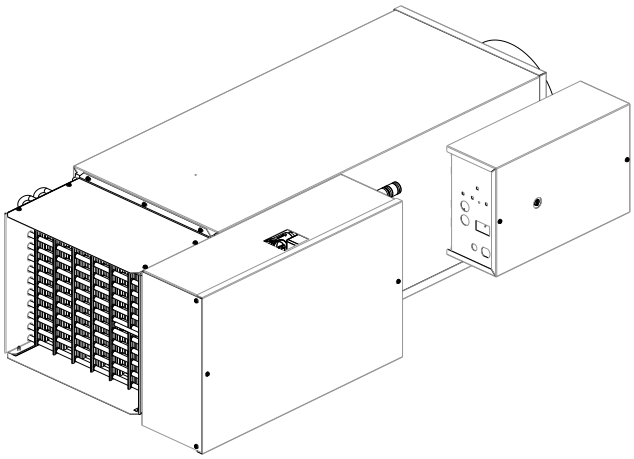
Typical Single-Duct VAV Units

Figure 1. Typical single-duct unit; VCCF VCWF, VCEF



Single Duct Hot Water VAV with Factory Installed Piping Package

Figure 2. Typical hot water single duct unit with factory installed piping package



Dual-Duct VAV Units

Dual-duct units provide two air valves: one as heating primary air and the other as cooling primary air. Both discharge into the common outlet, which leads to the zone being controlled. See Figure 3, p. 27.

Units are provided with a slip and drive rectangular duct connection or can be ordered with integral outlet plenum.

Sequencing of hot and cold air valve is dependent on job requirements. One typical control is valves working in conjunction to respond to zone temperature.

When the cooling valve becomes fully closed or reaches a specified minimum, the heating valve will begin to modulate or vice versa. The typical result is that air flowing to the zone varies from maximum down to a minimum and back up to maximum as load varies and controls would cause one air valve to close and the other to open.

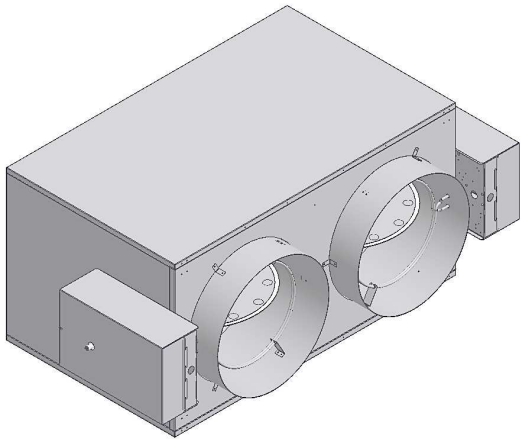
Another typical application is when the unit provides a constant volume to the zone. When the zone sensor is tied directly to the heating valve, it will modulate the heating valve according to the zone temperature.

When the heating valve is fully closed or there is a call for cooling in the zone, the cooling valve will be at constant supply. As the space becomes too cool, the heating valve will modulate open, decreasing the cooling valve flow. The typical result is that the air flowing into the zone stays at a constant flow whether the unit is heating or cooling.

Factory-installed Trane unit controls available include;

- Symbio™ 500 or UC400 — one required per unit

Figure 3. Typical dual-duct unit; VDDF



Fan-Powered/Fan-Powered Low Height VAV Units

VariTrane™ fan-powered and low height fan-powered units can be either parallel or series, with or without reheat. Refer to the following figures.

Typical Fan-powered Units

Figure 4. Parallel fan-powered terminal unit (top) and series fan-powered terminal units (bottom)

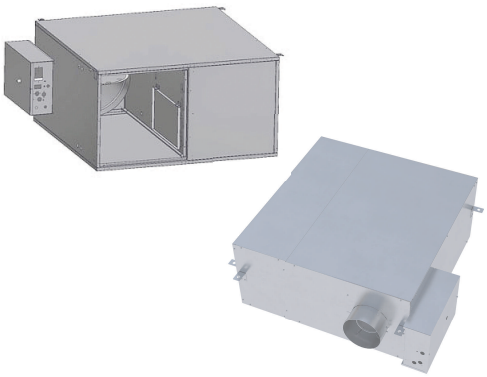


Figure 5. Low height series: LSCF

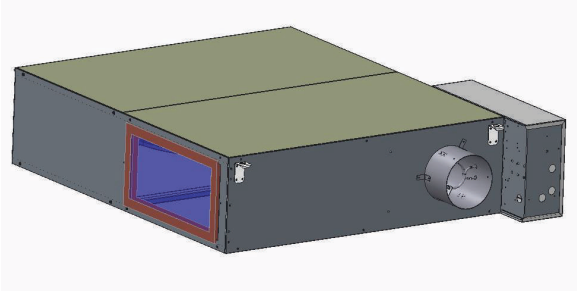
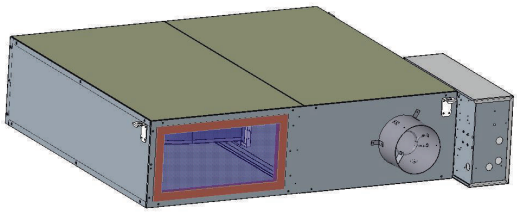


Figure 6. Low height parallel: LPCF



The fan on a series unit runs continuously whenever the main air handler unit is in operation. There are three methods to start the fan: remotely, by a duct pressure switch, or by a combination of both. The particular fan control method may vary from unit to unit, depending upon job needs.

Typically, the heater is off while air valve modulates primary air and responds to zone temperature. If zone temperature decreases to the point where a decrease in primary air will not maintain the desired temperature, reheat will be activated to increase the temperature of the discharge air.

On a parallel unit, the VariTrane™ air valve delivers primary cooling air to the unit outlet. When the space temperature decreases beyond air valve control, the fan is turned on as the first stage of heat. The fan delivers plenum air from above the occupied space to the unit outlet, which is mixed with primary air and delivered to the occupied space.

Note: *Either the fan, the air valve, or both can deliver airflow into the occupied space. In order to prevent primary airflow from exiting through the fan when the fan is not running on a parallel unit, a back draft damper is provided. When the fan is not running, the efficiency of this system is the same as a standard single-duct VAV unit.*

Typically, the control systems applied to parallel units cause the air valve to close to zero or a minimum flow before the fan is activated. After the fan is activated, the optional heat will be activated upon further reduction in zone temperature. Minimal primary air is mixed with the heated air.

VariTrane fan-powered unit fan sizes 02SQ – 05SQ, DS02, and DS03 were performance tested at 0.12 in·w·g. and sizes 06SQ and 07SQ were tested at 0.15 in·w·g. Units are not designed to operate without ducts and below these tested static pressures.

Note: *Fan-powered units are available with rectangular discharge connection only. The optional heater is mounted on the discharge of the unit. Hot water coils are connected to either the plenum inlet or on the discharge on parallel units, and to the discharge of series units.*

Chilled Water Sensible Cooling Terminal Units

Chilled water sensible cooling terminal units are available with or without reheat. Refer to the following figures.

Figure 7. Series fan powered chilled water sensible cooling unit

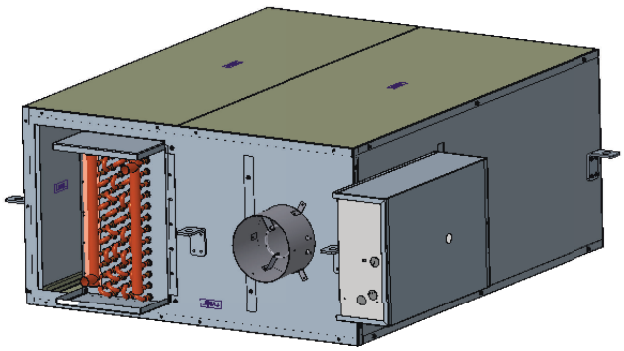
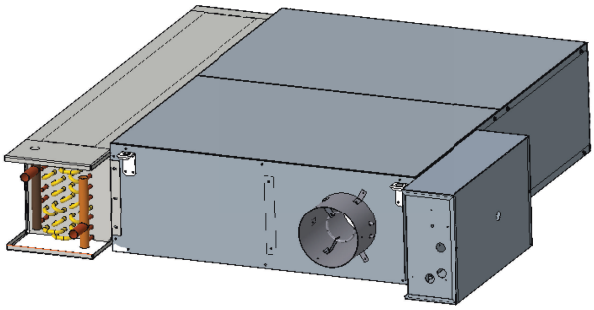


Figure 8. Low height chilled water sensible cooling unit



The function of the Trane chilled water sensible cooling terminal units is a little different than traditional VAV Terminal Units. These terminal units are part of a system that uses a dedicated outdoor-air unit to distribute outdoor air to an air valve on each terminal unit to meet the ventilation requirements of the zone. Each terminal unit is also equipped with a cooling coil mounted on the plenum inlet. Recirculated air from the plenum (or directly from the occupied space) is drawn in through the cooling coil by the local fan. This cooled air is then mixed with the conditioned (cooled, dehumidified, heated, or humidified) outdoor air from the dedicated OA unit, and distributed through the downstream ductwork to the zone.

In most applications, the water supplied to this local cooling coil is controlled to a temperature above the dew point in the zone. This avoids moisture in the air from condensing on the coil, so it operates dry and provides only sensible cooling. All the dehumidification must then be provided by the dedicated outdoor-air unit. Trane chilled water sensible cooling terminal units are built with a drip pan located beneath the cooling coil, with a moisture sensor installed in it, to detect and prevent any moisture from getting on the ceiling beneath the units or into the occupied space below. These terminal units can be configured with either a hot water coil or electric heater mounted at the unit discharge.

Unit Installation

⚠ WARNING

Hazardous Voltage w/Capacitors!

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

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

⚠ WARNING

Proper Structural Support Required!

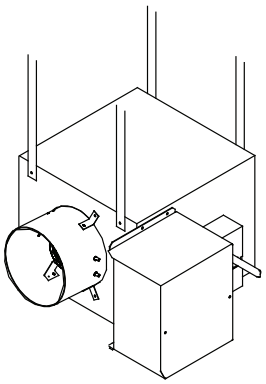
Failure to ensure proper structural ceiling support could result in unit falling from its location which could result in death or serious injury.

Ceiling structure must be strong enough to support the weight of the unit and any accessories. If unsure, check with a structural engineer.

Due to weight, the VAV terminal units should be suspended from the uppermost ceiling, independent of the false ceiling grid. VAV terminal units are primarily designed for installation in the plenum space between the upper most ceiling and the false ceiling grid below it. See "Base Unit Weights," p. 43 for unit weights. Suspension devices should be supplied by the installer. Units must be installed level and upright. Failure to level the unit properly may prevent proper operation of the controls and/or terminal unit. Units are not designed to be installed vertically. Consequently, this will also void the U.L. ratings and any warranty on the unit.

Single-Duct VAV Units

Figure 9. Single-duct hanging recommendations

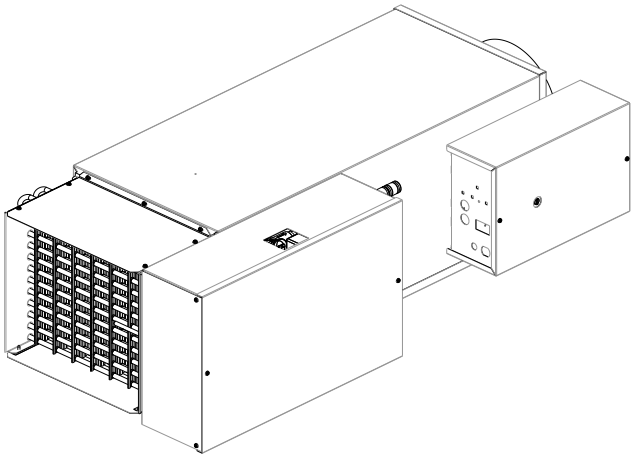


Depending upon the size and weight of the single-duct unit, it may be capable of being supported by the ductwork that is connected to it. No hanger brackets are provided on these units since the unit should be supported by means of a hanger strap. The hanger strap should be secured directly to the unit casing as shown above.

- For cooling only single-duct units or single-duct units with hot water coil, the unit may be rotated 180° for opposite side connections.
- For units with electric heat, the unit can be flipped to either RH or LH connection orientation if model number digit 22 Electrical Connections = F.

Single Duct Hot Water VAV with Factory Installed Piping Package

Figure 10. Typical hot water single duct unit with factory installed piping package



General Information

1. Clean the lines of all foreign material, (welding slag, pipe scale, dirt, thread chips, etc.). Upstream installation of a strainer may be necessary in dirty systems.
2. Air should be eliminated from the system prior to startup to assure quiet operation and freedom from water hammer.
3. Standard reducing bushings or flanges may be directly connected to the hose ends if required.
4. Automatic control valves are marked with direction of flow. Automatic valves will be labeled with the GPM and the water valve Cv.

   Important: *The arrow must point in the direction of flow for proper operation.*
5. Automatic flow control valves must be located in the RETURN Line.

Installation

1. Determine which is the supply section and which is the return section. The strainer is only on the supply side. Flow controls and the proportional water valve are only on the return side.
2. Sweat connections according to the following information:
   a. Ball valves must be in the closed position during sweating.
   b. The outside of the tubing, and the inside of the fitting are to be mechanically cleaned and then lightly coated with solder flux.
   c. The tube is then inserted one diameter into the fitting and the central portion of the valve body wrapped with a wet rag, wet sponge, or heat-absorbing putty.
   d. Never apply heat to the automatic temperature-control valve body.
   e. Heat may be applied, either to the tubing or to the end of the fitting to achieve solder flow.
   f. When the parts have achieved the necessary temperature; solder is to be added to the joint and the joint allowed to cool.
   g. he heat is to be applied for the shortest time possible, and never directly to the area where the solder is being applied.
   h. The internal parts of the piping packages are capable of continuous use at 300°F, but will be quickly damaged at higher temperatures.
   i. When soldering vertical assemblies care must be taken to prevent excess solder from dripping into the valve.
   j. Heat discoloration from the sweating operation should not extend to the major diameter of the valve body.
   k. If disassembled, the valve must be reassembled in the reverse order, with all of the parts returned to their original positions.
   l. Automatic flow valves, strainers, and unions are equipped with O-ring seals in the union connection. These seals provide reliable, easy to use connections, but care must be taken to prevent damage during installation.
3. Inspect installation for leaks, kinks, twists, sharp bends, stretching, and chafing.

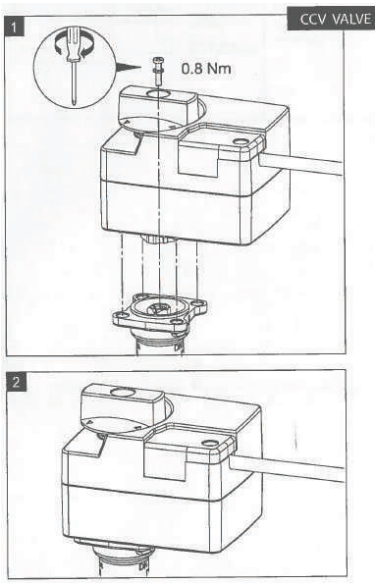
Operation

1. For optimum operation, air entrapment in the system must be prevented. The flow control valve must remain filled with fluid. The system must be clean and free of foreign materials.
2. The piping packages must only be used with fluids that are compatible with iron, brass, santoprene and EPDM materials. The temperature during operation must be limited to the range of 32°F to 225°F.
3. Piping packages are fully compatible with ethylene glycol and propylene glycol with all concentrations.

Maintenance

General maintenance is not required for piping packages. However, if the system experiences large amounts of pipe scale due to poor water conditions, as sometimes is found in older or retrofit systems, some maintenance may be required. Provisions should be made to keep the system clean. Proper water treatment is also recommended.

Figure 11. Valve - exploded view



Installing Replacement Actuator

Note: *Installation of a new actuator does not require draining the system, provided the valve body remain in the pipeline.*

1. Check replacement part number and voltage ratings for match with old device.
2. Disconnect power supply before servicing to avoid electrical shock or equipment damage.
3. Disconnect lead wires to actuator. Where appropriate, label wires for rewiring.
4. Remove the screw attaching actuator to valve.
5. Install new actuator by matching the positions of the square shaft and actuator stem.
6. Match locating pins to mating holes.
7. Screw actuator to valve body hand tight.
8. Reconnect lead wires.
9. Restore power and check-out operation.

Manual Operation

The valve can be manipulated to any position manually as required. To manually operate the valve, simultaneously press the manual button and rotate the lever to the desired position (see Figure 12, p. 32 and Figure 13, p. 32). The manual open position may be used for filling, venting, and draining the system, or for opening the valve in case of power failure. The valve and actuator will return to the automatic position when power is restored.

The manual lever on the actuator is used both as a position indicator and as a manual opener for putting the valve in full open position to allow initial system flushing.

Figure 12. Belimo water valve

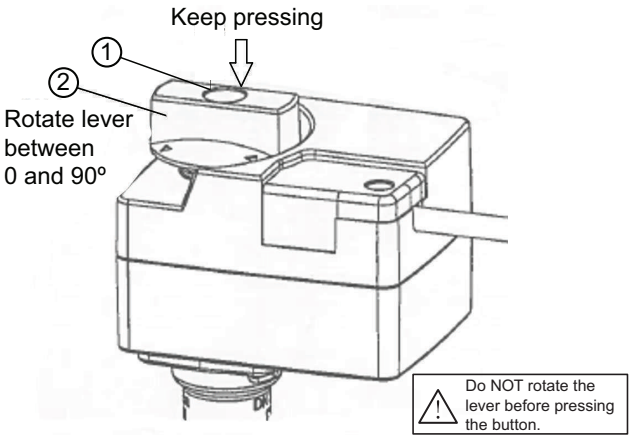
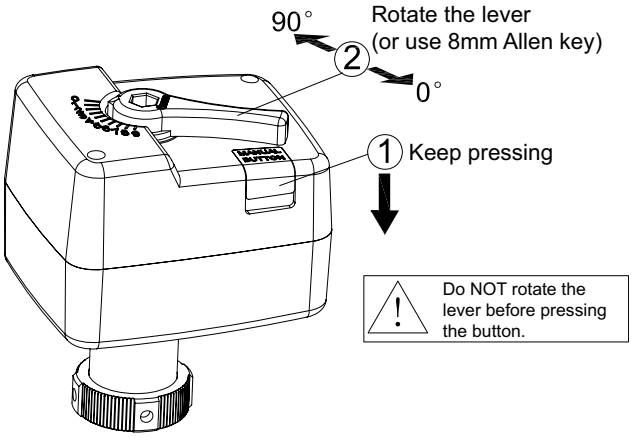


Figure 13. Trane water valve



Dual-Duct VAV Units

Dual-duct units should be supported by either hanger straps or by using a threaded rod in conjunction with the hanger brackets that are provided on the unit.

Figure 14. Dual-duct hanger bracket locations

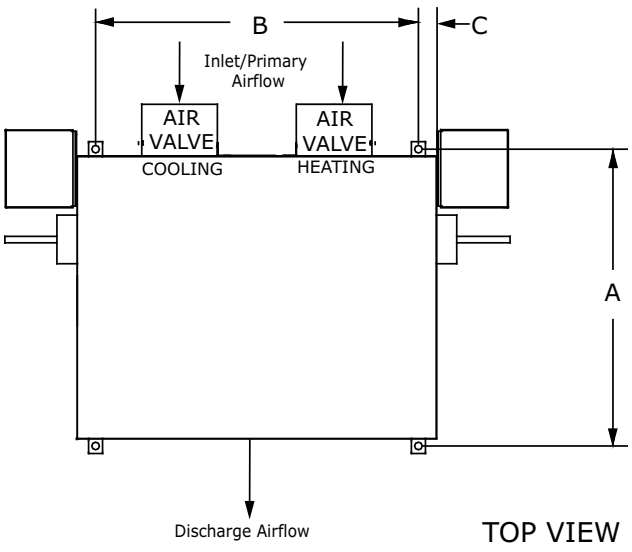


Table 1. Dual-duct VAV unit hanger location dimensions

Inlet Size (in)	A		B		C	
	in.	mm	in.	mm	in.	mm
5–10	23.15	588	25.25	641	1.38	35
12–16	23.15	588	37.25	946	1.38	35

Fan-Powered VAV Units and Chilled Water Sensible Cooling Terminal Units

Fan-powered (standard and low height) and chilled water sensible cooling terminal units should be supported by either hanger straps or by using a threaded rod in conjunction with the hanger brackets that are provided on the unit. Care should be exercised to insure that the hanging straps do not block the side access panel. Refer to the following figures.

Bracket Locations — Fan Powered

Figure 15. Parallel hanger bracket location sizes

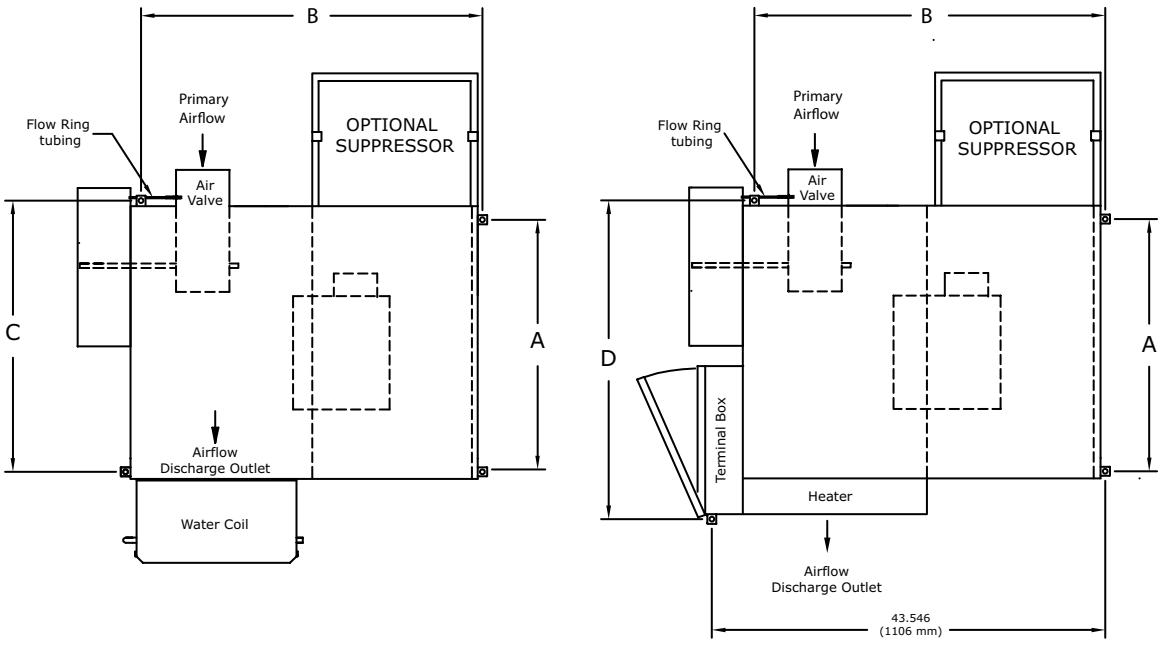
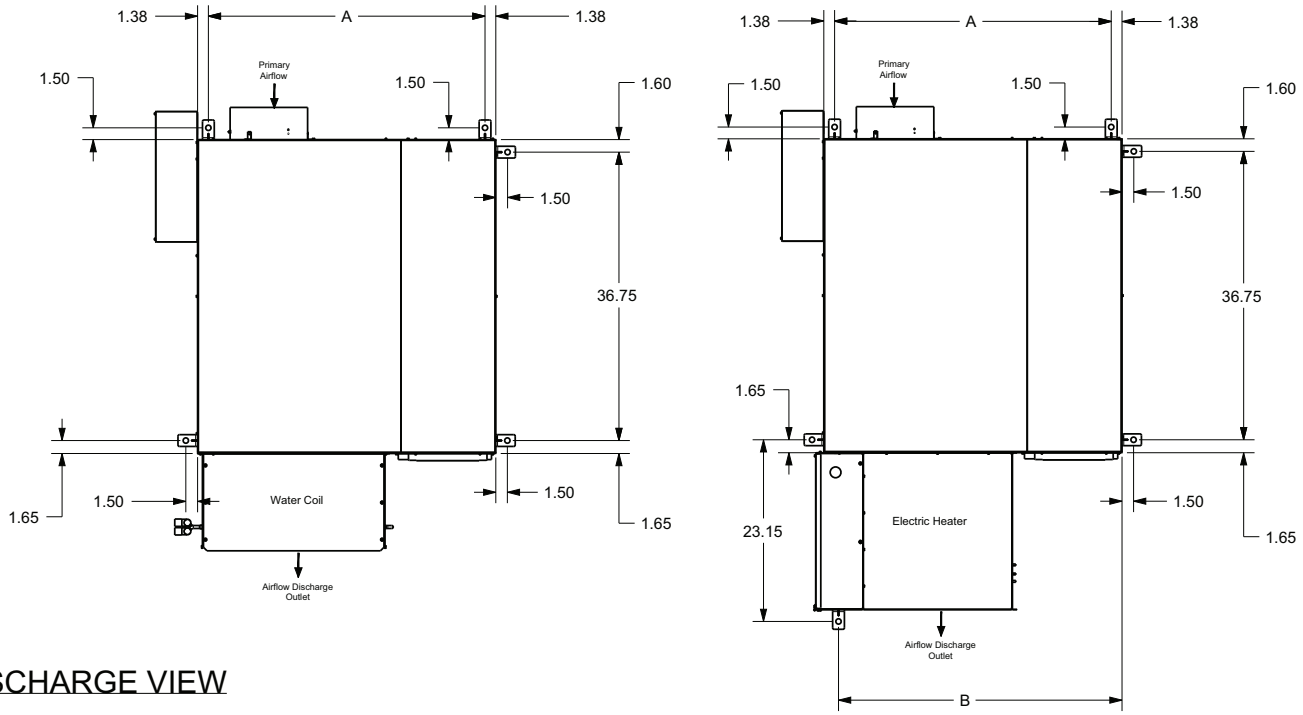


Table 2. Parallel hanger bracket location dimensions

Fan Size	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
02SQ	26.75	679	38.95	989	28.95	735	37.10	942
03SQ, 04SQ, 05SQ	29.75	756	38.95	989	31.45	799	39.70	1008
06SQ, 07SQ	36.75	933	38.95	989	38.95	989	47.10	1196

Figure 16.

TOP VIEW



DISCHARGE VIEW

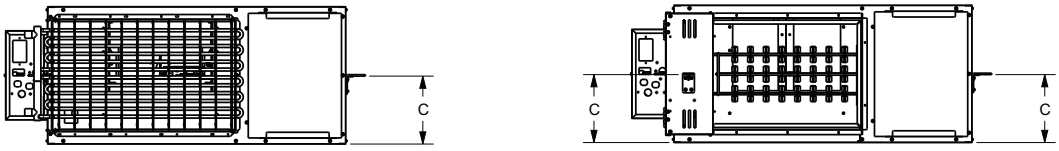
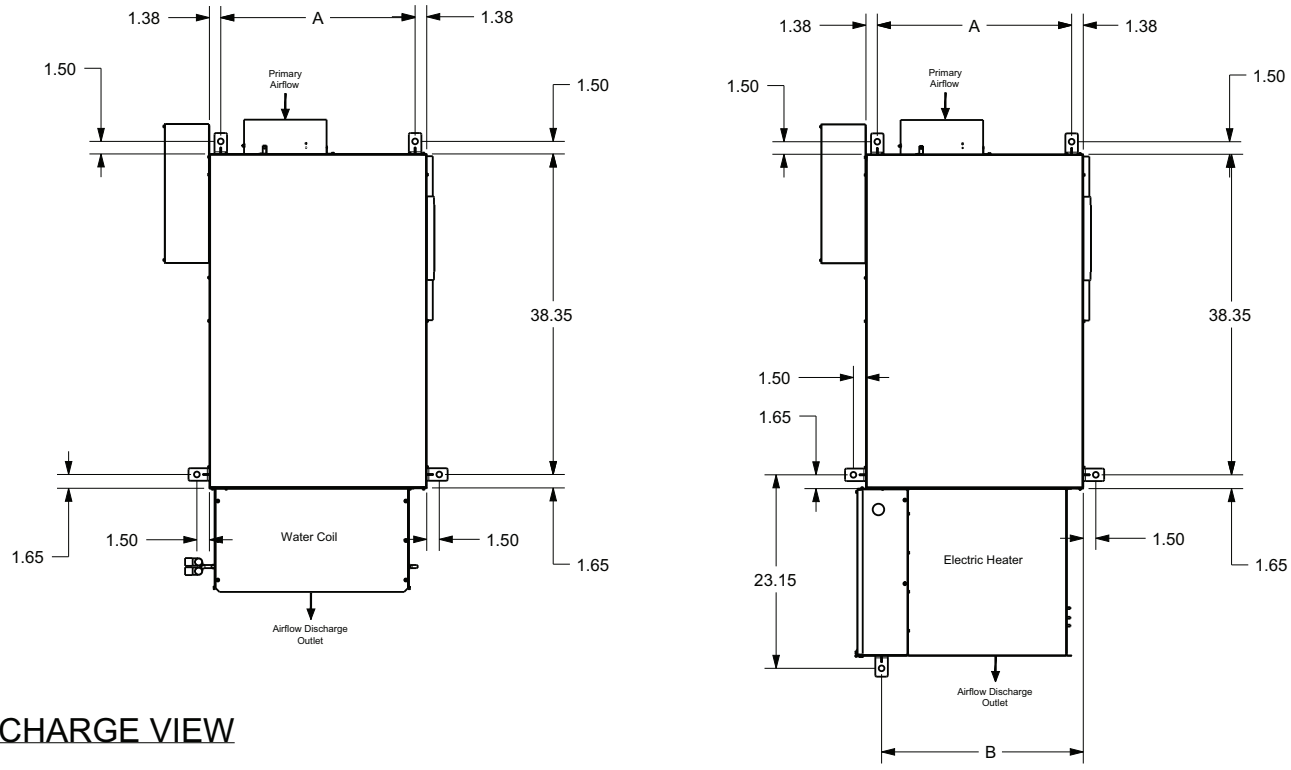


Table 3. Series hanger bracket location dimensions - VSxG with attenuator

Fan Size	A		B		C	
	in.	mm	in.	mm	in.	mm
Small	27.25	692	29.00	737	8.66	220
Medium	35.25	895	36.13	918	8.66	220
Large	39.25	997	40.13	1019	9.91	252

Figure 17.

TOP VIEW



DISCHARGE VIEW

Table 4. Series hanger bracket location dimensions - VSxG

Fan Size	A		B		C	
	in.	mm	in.	mm	in.	mm
Small	15.33	389	18.51	470	8.66	220
Medium	23.25	591	24.13	651	8.66	220
Large	27.25	692	29.63	753	9.91	252

Figure 18. Low height parallel DS02/PS02

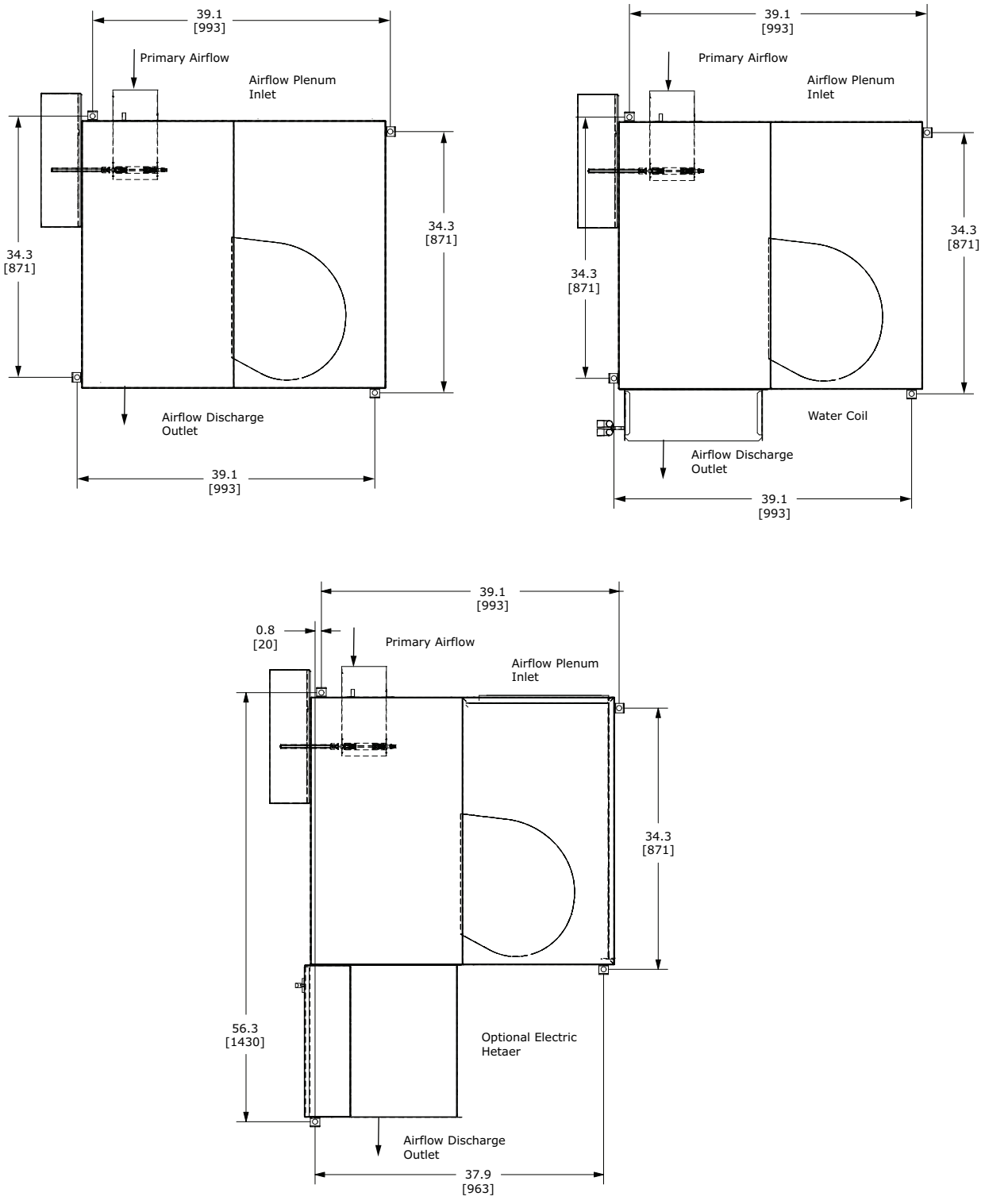
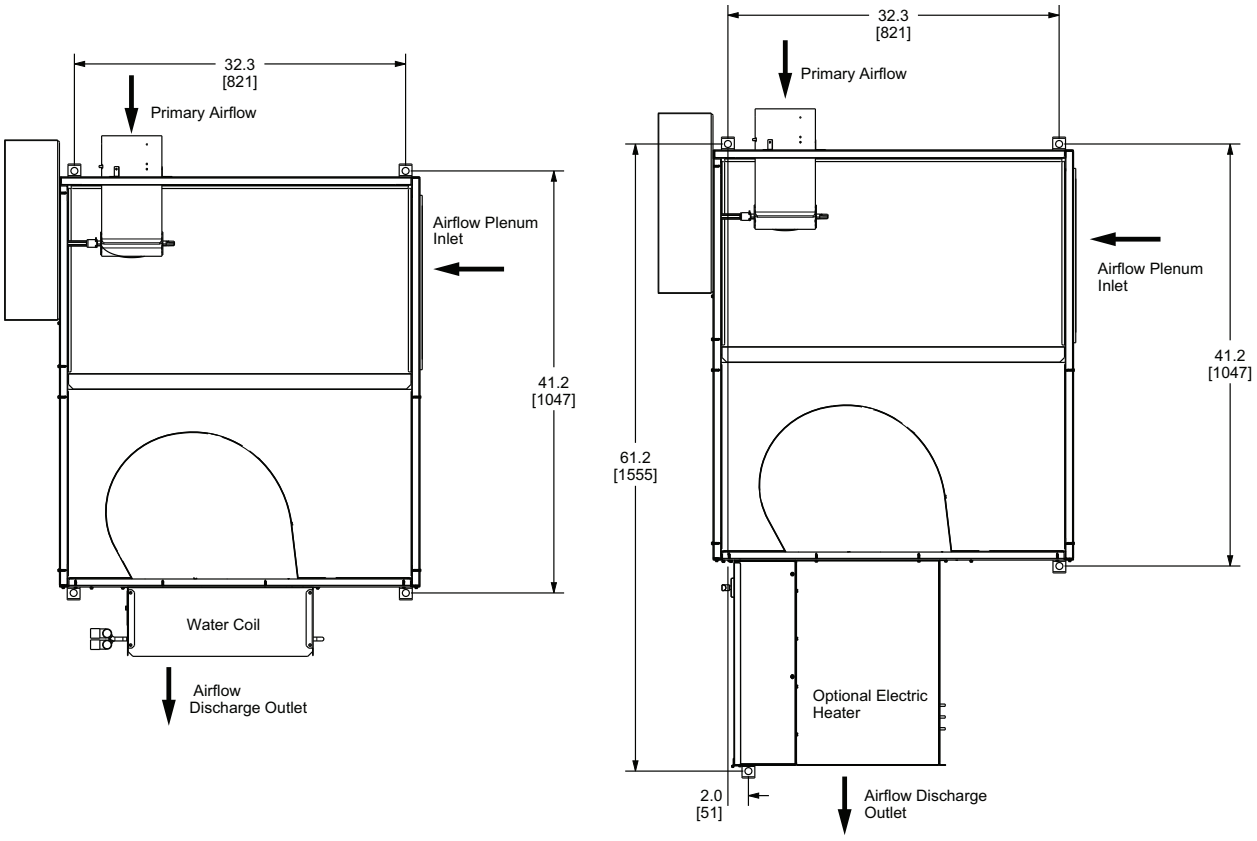


Figure 19. Low height series DS02/PS02/DS03 w/hot water or electric heat

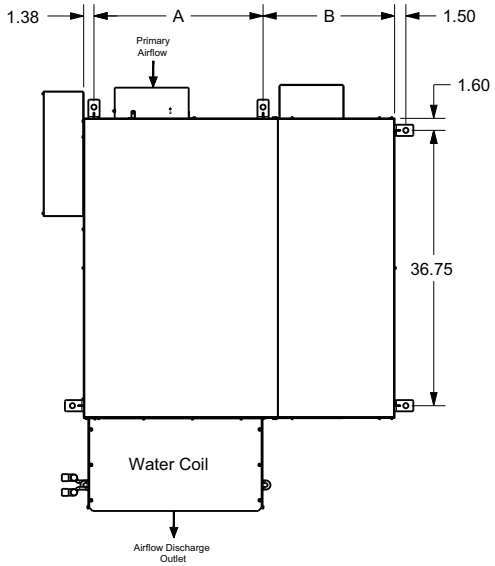


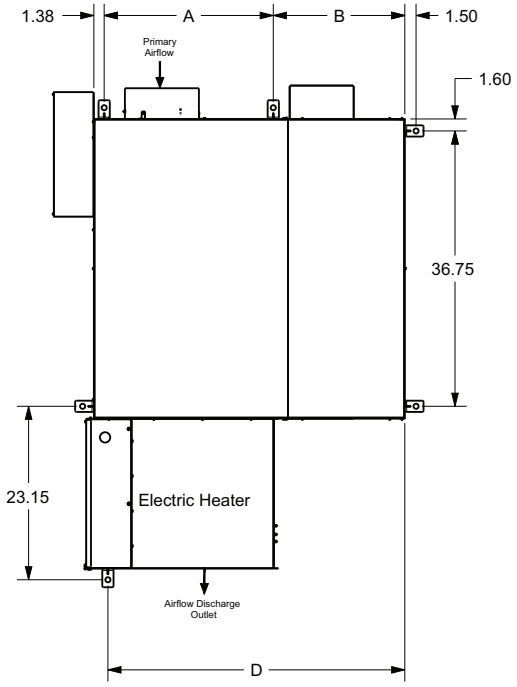
Bracket Locations

Bracket Locations VDxG

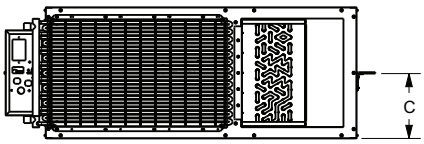
Figure 20. Bracket locations VDxG

TOP VIEW





DISCHARGE VIEW



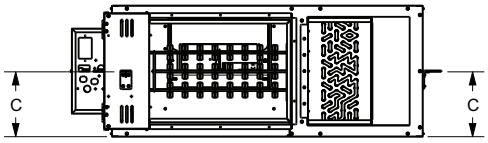


Table 5. Hanger bracket location dimensions - VDxG

Fan Size	A		B		C		D (Electric heater only)	
	in.	mm	in.	mm	in.	mm	in.	mm
Small	14.57	370	17.55	446	8.66	220	32.50	826
Medium	22.57	574	17.55	446	8.66	220	39.62	1007
Large	22.57	574	21.55	548	9.91	252	43.63	1109

Chilled Water Sensible Cooling Terminal Units

Figure 21. Bracket locations — cooling only unit, and unit with hot water coil

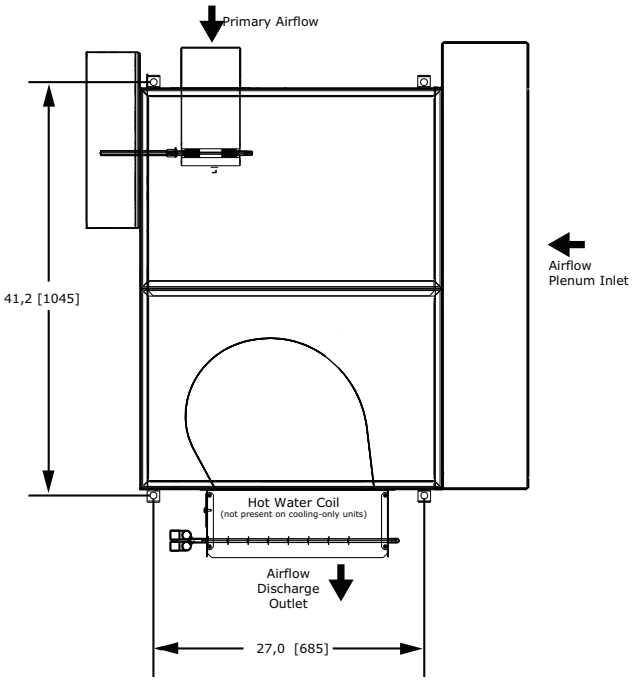
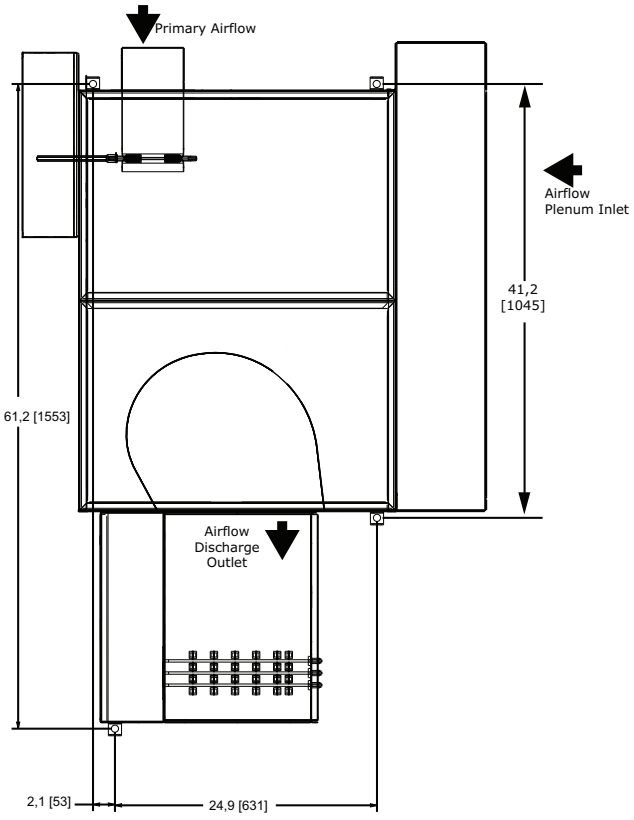


Figure 22. Bracket locations — electric heat unit



Duct Connections

All VariTrane™ units should be provided with a minimum of 1.5-duct diameters of straight duct prior to the inlet of the unit. It is recommended that at least 48 inches of straight duct be provided from the discharge of the units prior to any take-offs or transitions.

Important: *This is a requirement for electric heat fan-powered units used in applications with 100% downward discharge.*

In order to maintain good air distribution over the elements and not create turbulence which could cause a limit cutout there should be four feet of ductwork, consistent of the discharge dimensions of the heater. downstream of the reheat coil prior to any diffuser takeoffs for VariTrane™ electric coils.

1. After all connections are made, verify the entire ductwork system is airtight. In some high-pressure systems, duct sealer may be necessary.

   Note: *All inlet duct on the VAV boxes are sized approximately 0.125 inches smaller in diameter than the nominal size in order to allow the incoming duct to slide over the inlet of the VAV box.*

2. Provide insulation around the entire inlet collar (all the way to the unit casing).

   Note: *Use caution not to damage the flow tubes when making ductwork connections or insulating.*

3. Cut slits in the insulation for the flow tubes and secure with duct tape.
4. If the unit will be installed in a location with high humidity, external insulation around the heating coil should be installed as required.

Water Coil Connections

Notes: *The following coils have 0.375 inches OD water coil piping connections.*

- *Single-Duct 1-row coils (inlet sizes 05, 05, 06, 08 or 10 only)*
- *Low Height Parallel Inlet 1-row*
- *Low Height Parallel Discharge 1-row*

All others require a 0.875 inches OD water coil piping connections.

1. If necessary, change the coil connection from left-handed to right-handed (and vice-versa) by disconnecting the coil from the unit and rotating the coil like a steering wheel 180°.

   Note: *The coil connection cannot be changed on parallel fan powered unit with hot water coil on plenum inlet.*

2. Use port at the bottom for inlet and top for outlet on single row coils. For multi-row coils, always plumb in counter flow orientation.

- Water inlet is always on the airflow downstream side of the hot water coil.
- Water outlet is always on the upstream side of the hot water coil.

3. Care should be taken to properly support the water coil piping connections while connecting the adjoining pipe.
4. It is recommended that piping to the water coil should be done after field-mounted controls, external insulation, and ductwork connections have been completed.

   Important: *Do not connect water valve or pipe extensions to the water coil connections unless supported.*

5. For use with water only, maximum temperature is 200° F (93°C) and maximum pressure is 300 PSI (2068 KPa).
6. For use with parallel hot water units, maximum off coil air temperature 140°F (60°C).

Electrical Installation

Notes:

- *Any modifications, additions, or changes to the control box could void the factory warranty and UL certification. Such modifications, additions, or changes is the responsibility of the modifying contractor.*
- *This unit is suitable for installation in plenums above hung (suspended) ceilings or equivalent.*

Unit Wiring Diagrams

Specific unit wiring diagrams, based on unit options ordered, are provided inside each unit. Use these diagrams for connections or trouble analysis.

Supply Power Wiring

- Refer to the unit nameplate to obtain the minimum circuit ampacity (MCA) and maximum overcurrent protection (MOP) to properly size field supply wiring and fuses or circuit breakers.
- Refer to the unit operating voltage listed on the unit wiring schematic, submittal, or nameplate.
- Refer to the wiring schematic for specific wiring connections.

Note: *All field wiring should conform to NEC and all applicable state and local code requirements.*

If the unit does not have a disconnect switch, the power connection leads and ground screw with brass cup washer are inside the control panel.

If the unit has a disconnect switch, the unit either has power leads or box lug terminals on the input of the switch. Box lug terminals should be tightened to torque specified on the switch.

Discharge Duct Temperature Sensor Installation

Note: This process is to be used for control sequences that involve Discharge Air Temperature (DAT) control that do not have a factory installed discharge air temperature sensor(s).

Several Symbio™ 210/210e, Symbio™ 500 and Tracer® UC210/UC400 control sequences perform direct DAT control of the VAV unit when both modulating unit heat and modulating ECM fan are present or when modulating unit heat is present on a single duct (non-fan-powered) VAV unit. Supported modulating unit heat options include modulating hot-water and SCR-controlled electric heat. In these Symbio 210/210e, Symbio 500, and Tracer UC210/UC400 control sequences, the DAT is a control input to the unit controller.

Note: *Optional factory mounted discharge duct temperature sensors available with modulating unit heat control. For single duct VAV units with SCR Electric Heat, the factory installed sensor option provides the average of an array of 4 sensors (2 probes x 2 sensors/probe). For single duct VAV units with modulating hot-water heat, the optional sensor is factory mounted downstream of the hot-water coil. The hot-water discharge air temperature sensor can be relocated further down in the discharge ductwork.*

Important: *To ensure good control of the DAT and overall level of heat being supplied to the zone, it's critical to locate the DAT sensor in a location in the downstream ductwork that is not too close to the electric heat coils.*

1. Locate mounting location for DAT sensor a minimum of 1.5 equivalent duct diameters downstream of the heating coils and midway between top and bottom on the side of the ductwork.
2. Mount the DAT sensor using the instructions provided below in the Electronic Duct Temperature Sensor Installation section.
3. If not already factory wired to unit controller, wire DAT sensor to unit controller using unit schematic.

Electronic Duct Temperature Sensor Installation

Visually inspect the sensor unit and harness for damage. Return damage or defective products.

Tools required for installation:

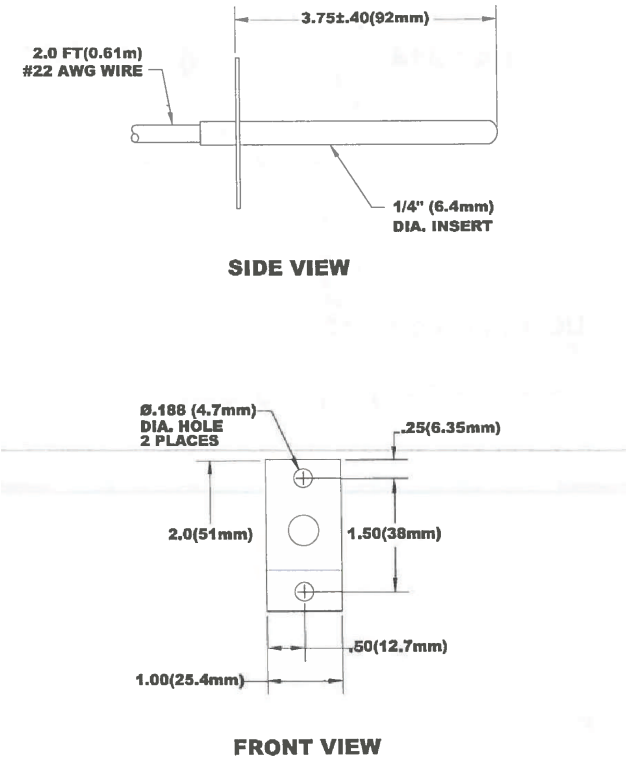
- Cutter to release zip tie
- DVM (Digital Volt ohm Meter)
- Appropriate screw driver for mounting screws
- Appropriate drill and drill bit for mounting screws

Notes:

- *Cut loose harness, verify location.*
- *Avoid location where excessive vibration, moisture, corrosive fumes or vapors are present.*

1. Determine the sensor mounting location on the duct. The sensing element is located within 1 inch (25mm) of the end of the sensing probe, and it should be located in the air stream typical of the temperature requiring sensing.
2. Use the mounting plate supplied as a template (or refer to Figure 23, p. 41 for duct mounting dimensions) for mounting hole location.

Figure 23. Mounting dimensions



3. Mount the sensor to the duct using (2) #8–1/6 x 1/2–in sheet metal screws.

Chilled Water Sensible Cooling Terminal Units Moisture Sensor Installation

In most applications, the water supplied to this local cooling coil is controlled to a temperature above the dew point in the zone. This avoids moisture in the air from condensing on the coil, to operate dry and provide only sensible cooling. All dehumidification must then be provided by the dedicated outdoor-air unit. Trane chilled water sensible cooling terminal units are built with a drip pan located beneath and above the cooling coil, with a moisture sensor installed, to detect and prevent any moisture from getting on the ceiling beneath the units or into the occupied space below. Sensible cooling units are designed so that the unit can be flipped 180 degrees for right and left hand orientation. They are configured as left hand from the factory with a moisture sensor installed to a bracket on the bottom of the drip pan.

Figure 24. Moisture sensor installation and additional adhesive tape shown in cooling coil drip pan

Unit Accessibility

- Single-duct units provided with hot water reheat have an access panel located on the top and bottom of the water coil. All other single-duct and dual-duct units are provided without access unless provided with optional bottom access panel. All functioning components are external to the unit unless provided with optional bottom access panel.
- Parallel fan-powered terminals are provided with a sliding side access.
- Series fan-powered terminal units have removable top and bottom access panels.
- Low height terminal units have a removable top and bottom panel.

Clearances

For proper service, it is recommended that at least 3-inches of side clearance be provided to service and access single-duct, dual-duct, series fan-powered, and all low height fan-powered terminal units.

- Fan-powered VAV units have a plenum inlet that must be clear of obstructions. Allow at least 6 inches of clearance in front of the plenum opening.
- Parallel fan-powered units require 36 inches of clearance in front of side access panel.
- Parallel fan-powered VAV units with Suppressor attenuator requires at least 4.5 inches (6 inches preferred) clearance above the plenum opening.

- Series fan powered VAV units with Suppressor attenuator require 16 inches to the side of the plenum opening to allow for filter replacement.
- Low height fan-powered VAV units with Thinline Suppressor attenuator requires at least 4.5 inches (6 inches preferred) clearance at plenum openings.

It is also recommended that 6 inches of clearance be provided to the top and bottom of all the units.

Note: *The minimum clearance for controls and heater controls should be 36 inches for all models except units with 575-volt electric heaters, which require 48 inches of clearance. NEC™ and/or local codes override all clearance requirements.*

Mounting Actuator

Important: *When installing or replacing the actuator tighten the actuator set screw per the manufacturer's instructions. Failure to follow the manufacturer's specifications may result in unit malfunction.*

Trane offers a factory-mounted actuator with a 90-second drive time. The actuator drives 1° per second. A field-installed actuator may be used if desired. The actuator shaft has a 0.5 inch diameter and is designed to travel clockwise to close the damper and counter-clockwise to open the damper. There is an indicator on the end of the actuator shaft that can be used to determine the position of the damper.

Stand-alone Units

Stand-alone Symbio™ 500 and UC400

When there is no communication to the Symbio 500 or UC400 control and the unit is in the stand-alone mode the control action is determined by the auxiliary temperature sensor located on AI5 terminals on the Symbio 500 or UC400 control. This input may have to be changed from AI4 (Discharge Air Input) as wired from the factory. In order for the auxiliary temperature sensor to determine the control action (heat, cool) it must be located in the supply duct, upstream of the VAV unit. The auxiliary temperature is then compared to the zone temperature. If the supply air temperature is 10°F above the zone temperature, then the control action will be heat. If the supply air temperature is less than or equal to the zone temperature, then the control action will be cool. If the supply air temperature is between the zone temperature and the zone temperature +10°F (5.5°C) [zone temperature < supply air temperature < zone temperature +10°F] (5.5°C), the control action remains the same and the Symbio™ 500 or UC400 controls to the minimum flow set point. If an auxiliary sensor is not installed the Symbio™ 500 or UC400 will retain the last control action in effect.

Stand-alone UC210, Symbio™ 210, Symbio™ 210e

When there is no communication to the Symbio 210, Symbio 210e, or UC210 control and the unit is in the stand-alone mode the control action is determined by the auxiliary temperature sensor located on AI3 terminals on the Symbio 210, Symbio 210e, or UC210 control. From the factory, this input is configured for discharge air temperature and needs to be field reconfigured as supply air temperature using Tracer® TU. In order for the auxiliary temperature sensor that is configured for supply air temperature to determine the control action (heat, cool) it must be located in the supply duct, upstream of the VAV unit. The supply air temperature is then compared to the zone temperature. If the supply air temperature is 10°F above the zone temperature, then the control action will be heat. If the supply air temperature is less than or equal to the zone temperature, then the control action will be cool. If the supply air temperature is between the zone temperature and the zone temperature +10°F (5.5°C) [zone temperature < supply air temperature < zone temperature +10°F] (5.5°C), the control action remains the same and the Symbio 210, Symbio 210e, or UC210 controls to the minimum flow set point. If an auxiliary temperature sensor is not installed and configured for supply air temperature, the Symbio 210, Symbio 210e, or UC210 will retain the last control action in effect.

Bottom Access

An optional bottom access can be provided in the casing of single duct VAV or parallel fan-powered terminal unit.

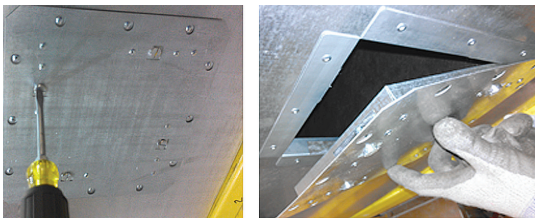
The 22-gauge door is lined with 1-inch, 26-gauge, dual wall insulation and thermal lined with 1-inch – 1.5 lb. density fiberglass insulation with a 4.2 R-value.

Each door includes 1 to 6 cam locks that are used to secure the door to the casing.

The cam lock engages a metal encapsulated frame on the unit that encloses the unit insulation to prevent air erosion.

The cam lock engagements are interlocked using a flat head screwdriver. Once unlocked, the entire door assembly can be removed for access.

Figure 25. Bottom access



Base Unit Weights

Note: *Refer to unit submittal for as-built unit weight.*

Table 6. Single-duct units — lb/kg

Unit Size	Single Wall Insulation						Dual Wall Insulation					
	VCCF	VCEF	VCWF				VCCF	VCEF	VCWF			
			1–Row	2–Row	3–Row	4–Row			1–Row	2–Row	3–Row	4–Row
4	16/7	38/17	21/10	22/10	23/11	24/11	19/9	48/22	24/11	25/11	26/12	27/12
5	16/7	38/17	21/10	22/10	23/11	24/11	19/9	48/22	24/11	25/11	26/12	27/12
6	16/7	38/17	21/10	22/10	22/10	24/11	19/9	48/22	24/11	25/11	25/11	27/12
8	16/7	38/17	21/10	24/11	24/11	26/12	20/9	49/22	25/11	28/13	28/13	30/14
10	22/10	46/21	29/13	32/15	32/15	36/16	27/12	60/27	34/15	37/17	37/17	41/19
12	27/12	52/24	37/17	40/18	41/19	45/20	34/15	68/31	43/20	47/21	48/22	52/24
14	32/15	60/27	44/20	48/22	51/23	55/25	41/19	80/36	53/24	57/26	60/27	64/29
16	35/16	69/31	49/22	54/24	56/25	61/28	46/21	91/41	60/27	65/29	67/30	72/33
24	52/24	84/38	70/32	77/35	76/35	82/37	63/29	106/48	81/37	88/40	87/40	93/42

Table 7. Dual-duct units — lb/kg

Unit Size	VDDF	VDDF w/Dual Wall Insulation
505	54/24	68/31
506	54/24	68/31
606	54/24	68/31
508	55/25	68/31
608	55/25	69/31
510	56/25	69/31
808	56/25	70/32
610	56/25	70/32
810	57/26	70/32
1010	61/28	74/34
612	57/26	70/32
812	58/26	71/32
1012	59/27	72/33
1212	60/27	84/38
814	78/35	102/46
1014	79/36	103/47
1214	80/36	104/47
1414	81/37	105/48
816	79/36	103/47
1016	80/36	104/47
1216	81/37	105/48
1416	82/37	105/48
1616	83/38	106/48

Table 8. Parallel fan-powered units — lb/kg

Unit Size	Single Wall				Dual Wall				VPxF Suppressor
	VPCF	VPEF	VPWF		VPCF	VPEF	VPWF		
			1–Row	2–Row			1–Row	2–Row	
0502SQ	81/37	110/550	92/42	95/43	115/52	144/65	126/57	129/59	15.5/7.0
0602SQ	80/36	109/49	91/41	94/43	114/52	143/65	125/57	128/58	15.5/7.0
0603SQ	83/38	112/51	105/48	108/49	117/53	146/66	139/63	142/64	16.5/7.5
0802SQ	81/37	110/50	92/42	95/43	115/52	144/65	126/57	129/59	15.5/7.0
0803SQ	83/38	112/51	105/48	108/49	117/53	146/66	139/63	142/64	16.5/7.5
0804SQ	84/38	113/51	106/48	109/49	118/54	147/67	140/64	143/65	16.5/7.5
1002SQ	82/37	111/50	93/42	96/44	116/53	145/66	127/58	130/59	15.5/7.0
1003SQ	84/38	113/51	106/48	109/49	118/54	147/67	140/64	143/65	16.5/7.5
1004SQ	85/39	114/52	107/49	110/50	119/54	148/67	141/64	144/65	16.5/7.5
1005SQ	98/44	128/58	120/54	123/56	132/60	162/73	154/70	157/71	16.5/7.5
1006SQ	114/52	144/65	127/58	130/59	148/67	178/81	161/73	164/74	20.5/9.3
1007SQ	122/55	152/69	135/61	138/63	156/71	186/84	169/77	172/78	20.5/9.3
1203SQ	85/39	114/52	107/49	110/50	119/54	148/67	141/64	144/65	16.5/7.5
1204SQ	86/39	115/52	108/49	111/50	120/54	149/68	142/64	145/66	16.5/7.5
1205SQ	99/45	129/59	121/55	124/56	133/60	163/74	155/70	158/72	15.5/7.0
1206SQ	115/52	145/66	128/58	131/59	149/68	179/81	162/73	165/75	20.5/9.3
1207SQ	123/56	153/69	136/62	139/63	157/71	187/85	170/77	173/78	20.5/9.3
1404SQ	87/39	116/53	109/49	112/51	121/55	150/68	143/65	146/66	16.5/7.5
1405SQ	100/45	130/59	122/55	125/57	134/61	164/74	156/71	159/72	16.5/7.5
1406SQ	116/53	146/66	129/59	132/60	150/68	180/82	163/74	166/75	20.5/9.3
1407SQ	124/56	154/70	137/62	140/64	158/72	188/85	171/78	174/79	20.5/9.3
1606SQ	117/53	147/67	130/59	133/60	151/68	181/82	164/74	167/76	20.5/9.3
1607SQ	125/57	155/70	138/63	141/64	159/72	189/86	172/78	175/79	20.5/9.3

Table 9. Series fan–powered units — lb/kg

Unit Size	Single Wall											
	VSCG		VSEG		VSWG							
					1 Row		2 Row		3 Row		4 Row	
	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
Small	63	28.6	98	44.5	76	34.5	80	36.3	83	37.6	86	39
Small Aten	85	38.6	120	54.4	98	44.5	102	46.3	105	47.6	108	49
Medium	102	46.3	142	64.4	117	53.1	122	55.3	126	57.2	129	58.5
Medium Aten	124	56.2	164	74.4	139	63	144	65.3	148	67.1	151	68.5
Large	125	56.7	170	77.1	144	65.3	150	68	156	70.8	163	73.9
Large Aten	150	68	195	88.5	169	76.7	175	79.4	181	82.1	188	85.3
Unit Size	**Double Wall**											
	VSCG		VSEG		VSWG							
					1 Row		2 Row		3 Row		4 Row	
	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg
Small	79	35.8	114	51.7	92	41.7	96	43.5	99	44.9	102	46.3
Small Aten	113	51.3	148	67.1	126	57.2	130	59	133	60.3	136	61.7
Medium	123	55.8	163	73.9	138	62.6	143	64.9	147	66.7	150	68
Medium Aten	157	71.2	197	89.4	172	78	177	80.3	181	82.1	184	83.5
Large	151	68.5	196	88.9	170	77.1	176	79.8	182	82.6	189	85.7
Large Aten	188	85.3	233	105.7	207	93.9	213	96.6	219	99.3	226	102.5

Notes:

1. For DOAS units add below coil weghts to the above attenuated units.
2. Small 4 Row: 44 lbs/ 20 kg.
3. Small 6 Row: 58 lbs/ 26.3 kg.
4. Medium 4 Row: 44 lbs/ 20 kg.
5. Medium 6 Row: 58 lbs/ 26.3 kg.
6. Large 4 Row: 55 lbs/ 24.9 kg.
7. Large 6 Row: 74 lbs/ 33.6 kg.

Table 10. Low height parallel units — lb/kg

Unit Size	Single Wall				Dual Wall				LPxF Attenuator
	LPCF	LPEF	LPWF		LPCF	LPEF	LPWF		
			1–Row	2–Row			1–Row	2–Row	
05DS02	90/41	109/49	97/44	99/45	114/51	132/60	120/54	122/55	14/6
05PS02	93/42	110/50	99/45	101/46	116/52	133/60	122/55	124/56	14/6
06DS02	90/41	108/49	96/43	96/43	113/51	131/59	119/54	121/55	14/6
06PS02	92/42	110/50	98/44	100/45	115/52	133/60	121/55	123/56	14/6
08DS02	91/41	109/49	97/44	99/45	114/51	132/60	120/54	122/55	14/6
08PS02	93/42	110/50	99/45	101/46	116/52	133/60	122/55	124/56	14/6
14RTDS02	109/49	121/55	109/49	111/50	132/60	144/65	132/60	134/61	14/6
14RTPS02	111/50	123/56	111/50	113/51	134/61	146/66	134/61	136/61	14/6

Table 11. Low height series units — lb/kg

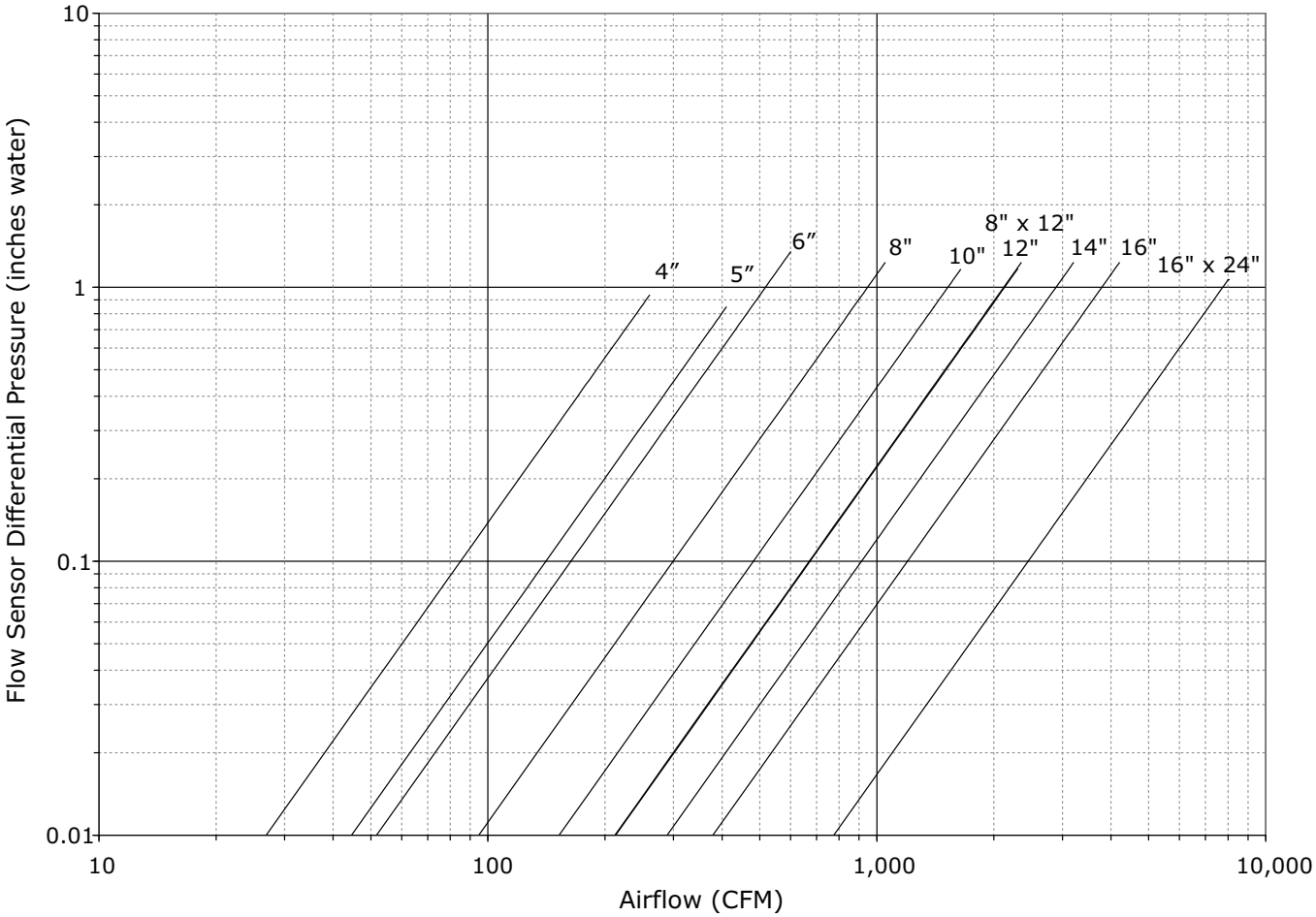
Unit Size	Single Wall				Dual Wall				LSxF Attenuator
	LSCF	LSEF	LSWF		LSCF	LSEF	LSWF		
			1–Row	2–Row			1–Row	2–Row	
04DS02	89/41	107/49	95/43	97/44	112/51	130/59	118/54	120/55	14/6
04PS02	91/42	108/49	97/44	99/45	114/52	131/60	120/55	122/55	14/6
05DS02	89/41	107/49	95/43	97/44	112/51	130/59	118/54	120/55	14/6
05PS02	91/42	108/49	97/44	99/45	114/52	131/60	120/55	122/55	14/6
06DS02	88/40	106/48	94/43	96/44	111/50	129/59	117/53	119/54	14/6
06PS02	90/41	108/49	96/44	98/45	113/51	131/60	119/54	121/55	14/6
06DS03	94/43	112/51	100/45	104/47	117/53	135/61	123/56	127/58	14/6
08DS02	89/41	107/49	95/43	97/44	112/51	130/59	118/54	120/55	14/6
08PS02	91/42	108/49	97/44	99/45	114/52	131/60	120/55	122/55	14/6
08DS03	95/43	113/51	101/46	105/48	118/54	136/62	124/56	128/58	14/6
10DS03	97/44	115/52	103/47	107/49	120/55	138/63	126/57	130/59	14/6
14RTDS02	107/49	119/54	107/49	109/50	130/59	142/65	130/59	132/60	14/6
14RTPS02	109/50	121/55	109/50	111/50	132/60	144/65	132/60	134/61	14/6
14RTDS03	100/45	118/54	106/48	110/50	122/55	140/64	128/58	132/60	14/6

Table 12. Chilled water sensible coil terminal units — lb/kg

Unit Size	Single Wall				Dual Wall			
	LDCF	LDEF	LDWF		LDCF	LDEF	LDWF	
			1–Row	2–Row			1–Row	2–Row
DS02	125/57	143/65	131/59	135/61	148/67	166/75	154/70	158/72

Unit Setup

Figure 26. Flow sensor ΔP vs. airflow delivery



Fan Motor Amperage

Reference unit submittal data and motor nameplate.

Adjusting the SCR Motor Speed Control

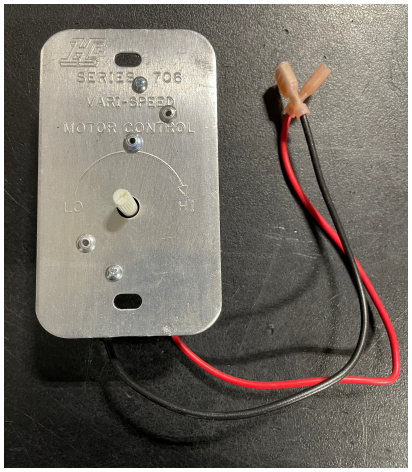
In order to make units more convenient and efficient to balance, an SCR (silicone control rectifier) is provided as standard on all fan-powered units.

The SCR is located on the side of the fan control box. To adjust the speed of the motor, the external knob must be rotated either clockwise or counterclockwise depending on the desired speed adjustment.

There is an internal potentiometer setting on the SCR controller that can be accessed by removing the control box cover. This internal potentiometer is set at the factory to the specific motor voltage.

It may be necessary to adjust this in the field depending on the building power factor.

Figure 27. SCR (top) and internal potentiometer (bottom)



Note: *Do not set this potentiometer below the voltage of the fan motor.*

Electrically Commutated Motor (ECM)

Figure 28. ECM control board – Non-modulating control with Trane unit controller (excludes Symbio™ 210/210e, Symbio™ 500, Tracer® UC210 and UC400) or non-Trane unit controller

Trane offers an energy efficient ECM as a motor option. The optional Symbio™ 210/210e, Symbio™ 500, Tracer® UC210 and UC400 unit controllers directly interface with the ECM to control fan airflow and fan on/off control. Other Trane and non-Trane unit controller options require an ECM control interface (shown in Figure 28, p. 48) to set fan airflow while the unit controller dictates fan on/off control via a binary output. The manual potentiometer is used to set the percent-on or speed. The ECM control interface contains display, which can be used to view percent-on setting and speed.

Note: *This feature only verifies airflow is set properly. It does not indicate actual ECM speed. The ECM must be load tested. The ECM must be connected to the fan to properly test the ECM and display fan speed.*

The following tables provide mapping from fan percent-on setting to fan airflow for each fan type and size. Additional fan settings can be determined by interpolating from the tables or using the following equation:

- Airflow setting = Airflow min + {(Potentiometer Setting) x [(Airflow max - Airflow min)/100]}

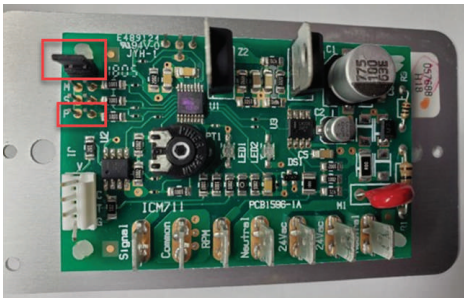
Figure 29. ECM control board – Modulating control with non-Trane unit controller

An alternate ECM interface (shown in Figure 29, p. 48) is utilized on unit with Non-Trane unit controller including factory mounted third-party unit controllers. This ECM interface allows fan modulation and fan on/off control from the unit controller. There are two input signal options as well as a temporary adjustment via manual potentiometer.

- 0-10 VDC modulation signal with separate on/off binary signal.
- 2-10 VDC modulation signal where the ECM starts at a rise to 2 VDC and stops at a fall to 1 VDC.

Note: *2-10 VDC input signal requires the shunt to be installed on the "P" terminals as shown in Figure 30, p. 48.*

Figure 30. ECM control board 2-10 VDC input signal shunt placement



The ECM control interface contains two diagnostic LED indicators, motor RPM (speed) and Motor Speed Request. Motor RPM indicates the motor is driven and running when lit. Motor Speed Request, represents the percentage of the requested motor speed being supplied to the motor. Short

and long flashes are used to indicate values from 0 to 100 percent.

- 0% is displayed as an off LED.
- 1 – 99% are represented by a series of long flashes followed by short flashes, whereas each long flash adds 10% and each short flash adds 1%.
- 100% is displayed as a constantly lit LED.

The following tables provide mapping from input signal to fan airflow for each fan type and size. Additional fan settings can be determined by interpolating from the tables.

Table 13. VPxF 03SQ ECM CFM

Airflow (Min CFM: 160, Max CFM: 1085)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
160	76	0%	0.0	2.0
206	97	5%	0.5	2.4
253	119	10%	1.0	2.8
299	141	15%	1.5	3.2
345	163	20%	2.0	3.6
391	185	25%	2.5	4.0
438	206	30%	3.0	4.4
484	228	35%	3.5	4.8
530	250	40%	4.0	5.2
576	272	45%	4.5	5.6
623	294	50%	5.0	6.0
669	316	55%	5.5	6.4
715	337	60%	6.0	6.8
761	359	65%	6.5	7.2
808	381	70%	7.0	7.6
854	403	75%	7.5	8.0
900	425	80%	8.0	8.4
946	447	85%	8.5	8.8
993	468	90%	9.0	9.2
1039	490	95%	9.5	9.6
1085	512	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.

[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.

[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 14. VPxF 04SQ ECM CFM

Airflow (Min CFM: 220, Max CFM: 1510)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
220	104	0%	0.0	2.0
285	134	5%	0.5	2.4
349	165	10%	1.0	2.8
414	195	15%	1.5	3.2
478	226	20%	2.0	3.6
543	256	25%	2.5	4.0
607	286	30%	3.0	4.4
672	317	35%	3.5	4.8
736	347	40%	4.0	5.2
800	378	45%	4.5	5.6
865	408	50%	5.0	6.0
929	439	55%	5.5	6.4
994	469	60%	6.0	6.8
1059	500	65%	6.5	7.2
1123	530	70%	7.0	7.6
1188	560	75%	7.5	8.0
1252	591	80%	8.0	8.4
1290	609	85%	8.5	8.8
1322	624	90%	9.0	9.2
1366	645	95%	9.5	9.6
1405	661	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.

[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.

[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 15. VPxF 05SQ ECM CFM

Airflow (Min CFM: 280, Max CFM: 1850)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
280	132	0%	0.0	2.0
359	169	5%	0.5	2.4
437	206	10%	1.0	2.8
516	243	15%	1.5	3.2
594	280	20%	2.0	3.6
673	317	25%	2.5	4.0
751	354	30%	3.0	4.4
830	391	35%	3.5	4.8

Table 15. VPxF 05SQ ECM CFM (continued)

Airflow (Min CFM: 280, Max CFM: 1850)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
908	428	40%	4.0	5.2
986	466	45%	4.5	5.6
1065	503	50%	5.0	6.0
1144	540	55%	5.5	6.4
1222	577	60%	6.0	6.8
1301	614	65%	6.5	7.2
1379	651	70%	7.0	7.6
1458	688	75%	7.5	8.0
1536	725	80%	8.0	8.4
1615	762	85%	8.5	8.8
1693	799	90%	9.0	9.2
1772	836	95%	9.5	9.6
1850	873	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.
[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 16. VPxF 06SQ ECM CFM

Airflow (Min CFM: 530, Max CFM: 2100)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
530	250	0%	0.0	2.0
609	287	5%	0.5	2.4
687	324	10%	1.0	2.8
766	361	15%	1.5	3.2
844	398	20%	2.0	3.6
923	435	25%	2.5	4.0
1001	472	30%	3.0	4.4
1080	509	35%	3.5	4.8
1158	546	40%	4.0	5.2
1237	584	45%	4.5	5.6
1315	621	50%	5.0	6.0
1394	658	55%	5.5	6.4
1472	695	60%	6.0	6.8
1551	732	65%	6.5	7.2
1629	769	70%	7.0	7.6
1708	806	75%	7.5	8.0

Table 16. VPxF 06SQ ECM CFM (continued)

Airflow (Min CFM: 530, Max CFM: 2100)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
1786	843	80%	8.0	8.4
1865	880	85%	8.5	8.8
1943	917	90%	9.0	9.2
2022	954	95%	9.5	9.6
2100	991	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.
[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 17. VSxF 03SQ ECM CFM

Airflow (Min CFM: 200, Max CFM: 1100)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
200	94	0%	0.0	2.0
245	116	5%	0.5	2.4
290	137	10%	1.0	2.8
335	158	15%	1.5	3.2
380	179	20%	2.0	3.6
425	201	25%	2.5	4.0
470	222	30%	3.0	4.4
515	243	35%	3.5	4.8
560	264	40%	4.0	5.2
605	285	45%	4.5	5.6
650	307	50%	5.0	6.0
695	328	55%	5.5	6.4
740	349	60%	6.0	6.8
785	370	65%	6.5	7.2
830	392	70%	7.0	7.6
875	413	75%	7.5	8.0
920	434	80%	8.0	8.4
965	455	85%	8.5	8.8
1010	477	90%	9.0	9.2
1055	498	95%	9.5	9.6
1100	519	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.

Table 17. VSxF 03SQ ECM CFM (continued)

(c) ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 18. VSxF 04SQ ECM CFM

Airflow (Min CFM: 275, Max CFM: 1500)		Trane Controller PWM Signal (a)	ECM Control Board Signal(b) (c)	
CFM	L/s	% Setting	0-10V	2-10V
275	130	0%	0.0	2.0
336	159	5%	0.5	2.4
398	188	10%	1.0	2.8
459	216	15%	1.5	3.2
520	245	20%	2.0	3.6
581	274	25%	2.5	4.0
643	303	30%	3.0	4.4
704	332	35%	3.5	4.8
765	361	40%	4.0	5.2
826	390	45%	4.5	5.6
887	419	50%	5.0	6.0
949	448	55%	5.5	6.4
1010	477	60%	6.0	6.8
1071	506	65%	6.5	7.2
1133	534	70%	7.0	7.6
1194	563	75%	7.5	8.0
1255	592	80%	8.0	8.4
1316	621	85%	8.5	8.8
1378	650	90%	9.0	9.2
1439	679	95%	9.5	9.6
1500	708	100%	10.0	10.0

(a) % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.

(b) ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.

(c) ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 19. VSxF 05SQ ECM CFM

Airflow (Min CFM: 350, Max CFM: 2050)		Trane Controller PWM Signal (a)	ECM Control Board Signal(b) (c)	
CFM	L/s	% Setting	0-10V	2-10V
350	165	0%	0.0	2.0
435	205	5%	0.5	2.4
520	245	10%	1.0	2.8
605	285	15%	1.5	3.2
690	326	20%	2.0	3.6

Table 19. VSxF 05SQ ECM CFM (continued)

Airflow (Min CFM: 350, Max CFM: 2050)		Trane Controller PWM Signal (a)	ECM Control Board Signal(b) (c)	
CFM	L/s	% Setting	0-10V	2-10V
775	366	25%	2.5	4.0
860	406	30%	3.0	4.4
945	446	35%	3.5	4.8
1030	486	40%	4.0	5.2
1115	526	45%	4.5	5.6
1200	566	50%	5.0	6.0
1285	606	55%	5.5	6.4
1370	647	60%	6.0	6.8
1455	687	65%	6.5	7.2
1540	727	70%	7.0	7.6
1625	767	75%	7.5	8.0
1710	807	80%	8.0	8.4
1795	847	85%	8.5	8.8
1880	887	90%	9.0	9.2
1965	927	95%	9.5	9.6
2050	967	100%	10.0	10.0

(a) % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.

(b) ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.

(c) ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 20. VSxF 06SQ ECM CFM

Airflow (Min CFM: 700, Max CFM: 2500)		Trane Controller PWM Signal (a)	ECM Control Board Signal(b) (c)	
CFM	L/s	% Setting	0-10V	2-10V
700	330	0%	0.0	2.0
790	373	5%	0.5	2.4
880	415	10%	1.0	2.8
970	458	15%	1.5	3.2
1060	500	20%	2.0	3.6
1150	543	25%	2.5	4.0
1240	585	30%	3.0	4.4
1330	628	35%	3.5	4.8
1420	670	40%	4.0	5.2
1510	713	45%	4.5	5.6
1600	755	50%	5.0	6.0
1690	798	55%	5.5	6.4
1780	840	60%	6.0	6.8

Table 20. VSxF 06SQ ECM CFM (continued)

Airflow (Min CFM: 700, Max CFM: 2500)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
1870	882	65%	6.5	7.2
1960	925	70%	7.0	7.6
2050	967	75%	7.5	8.0
2140	1010	80%	8.0	8.4
2230	1052	85%	8.5	8.8
2320	1095	90%	9.0	9.2
2410	1137	95%	9.5	9.6
2500	1180	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.
[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 21. LSxF, LPxF, LDxF DS02 ECM CFM

Airflow (Min CFM: 100, Max CFM: 1300)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
100	47	0%	0.0	2.0
160	76	5%	0.5	2.4
220	104	10%	1.0	2.8
280	132	15%	1.5	3.2
340	160	20%	2.0	3.6
400	189	25%	2.5	4.0
460	217	30%	3.0	4.4
520	245	35%	3.5	4.8
580	274	40%	4.0	5.2
640	302	45%	4.5	5.6
700	330	50%	5.0	6.0
760	359	55%	5.5	6.4
820	387	60%	6.0	6.8
880	415	65%	6.5	7.2
940	444	70%	7.0	7.6
1000	472	75%	7.5	8.0
1060	500	80%	8.0	8.4
1120	529	85%	8.5	8.8
1180	557	90%	9.0	9.2
1240	585	95%	9.5	9.6
1300	613	100%	10.0	10.0

Table 21. LSxF, LPxF, LDxF DS02 ECM CFM (continued)

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.
[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 22. LSxF DS03 ECM CFM

Airflow (Min CFM: 400, Max CFM: 1800)		Trane Controller PWM Signal [a]	ECM Control Board Signal[b] [c]	
CFM	L/s	% Setting	0-10V	2-10V
400	189	0%	0.0	2.0
470	222	5%	0.5	2.4
540	255	10%	1.0	2.8
610	288	15%	1.5	3.2
680	321	20%	2.0	3.6
750	354	25%	2.5	4.0
820	387	30%	3.0	4.4
890	420	35%	3.5	4.8
960	453	40%	4.0	5.2
1030	486	45%	4.5	5.6
1100	519	50%	5.0	6.0
1170	552	55%	5.5	6.4
1240	585	60%	6.0	6.8
1310	618	65%	6.5	7.2
1380	651	70%	7.0	7.6
1450	684	75%	7.5	8.0
1520	717	80%	8.0	8.4
1590	750	85%	8.5	8.8
1660	783	90%	9.0	9.2
1730	816	95%	9.5	9.6
1800	849	100%	10.0	10.0

[a] % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
[b] ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.
[c] ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Table 23. VSxG, VDxG ECM CFM

ECM Setting					
% ON	Modulating control		SML (CFM)	MED (CFM)	LRG (CFM)
	0-10	2-10			
	Vdc	Vdc			
0	0.0	2.0	160	350	400
5	0.5	2.4	211	431	498
10	1.0	2.8	262	511	595

Table 23. VSxG, VDxG ECM CFM (continued)

ECM Setting					
% ON	Modulating control		SML (CFM)	MED (CFM)	LRG (CFM)
	0-10	2-10			
	Vdc	Vdc			
15	1.5	3.2	312	592	693
20	2.0	3.6	363	672	790
25	2.5	4.0	414	753	888
30	3.0	4.4	465	833	985
35	3.5	4.8	515	914	1083
40	4.0	5.2	566	994	1180
45	4.5	5.6	617	1075	1278
50	5.0	6.0	668	1155	1375
55	5.5	6.4	718	1236	1473
60	6.0	6.8	769	1316	1570
65	6.5	7.2	820	1397	1668
70	7.0	7.6	871	1477	1765

Table 23. VSxG, VDxG ECM CFM (continued)

ECM Setting					
% ON	Modulating control		SML (CFM)	MED (CFM)	LRG (CFM)
	0-10	2-10			
	Vdc	Vdc			
75	7.5	8.0	921	1558	1863
80	8.0	8.4	972	1638	1960
85	8.5	8.8	1023	1719	2058
90	9.0	9.2	1074	1799	2155
95	9.5	9.6	1124	1880	2253
100	10.0	10.0	1175	1960	2350

Notes:

1. % setting from Trane unit controller via pulse width modulating signal or ECM control board with manual fan speed adjust setting.
2. ECM control board with 0-10 VDC fan modulation input and separate fan on/off binary input required.
3. ECM control board with 2-10 VDC, has combined fan on/off and modulation input where fan comes on when signal rises to 2 VDC and goes off when signal falls to 1 VDC.

Wiring Diagrams

Notes: *See programming guides listed below for detailed class II low voltage unit controls wiring information on the following:*

- *UC400: VAV-SVX07*-EN*
- *UC210: BAS-SVX62*-EN*
- *Symbio™ 210 BAS-SVX084*-EN*
- *Symbio™ 500 BAS-SVX091*-EN*

Wiring — Electric Heater Control Box

Figure 31. Single-duct , single phase, 1 leg, 3 stages

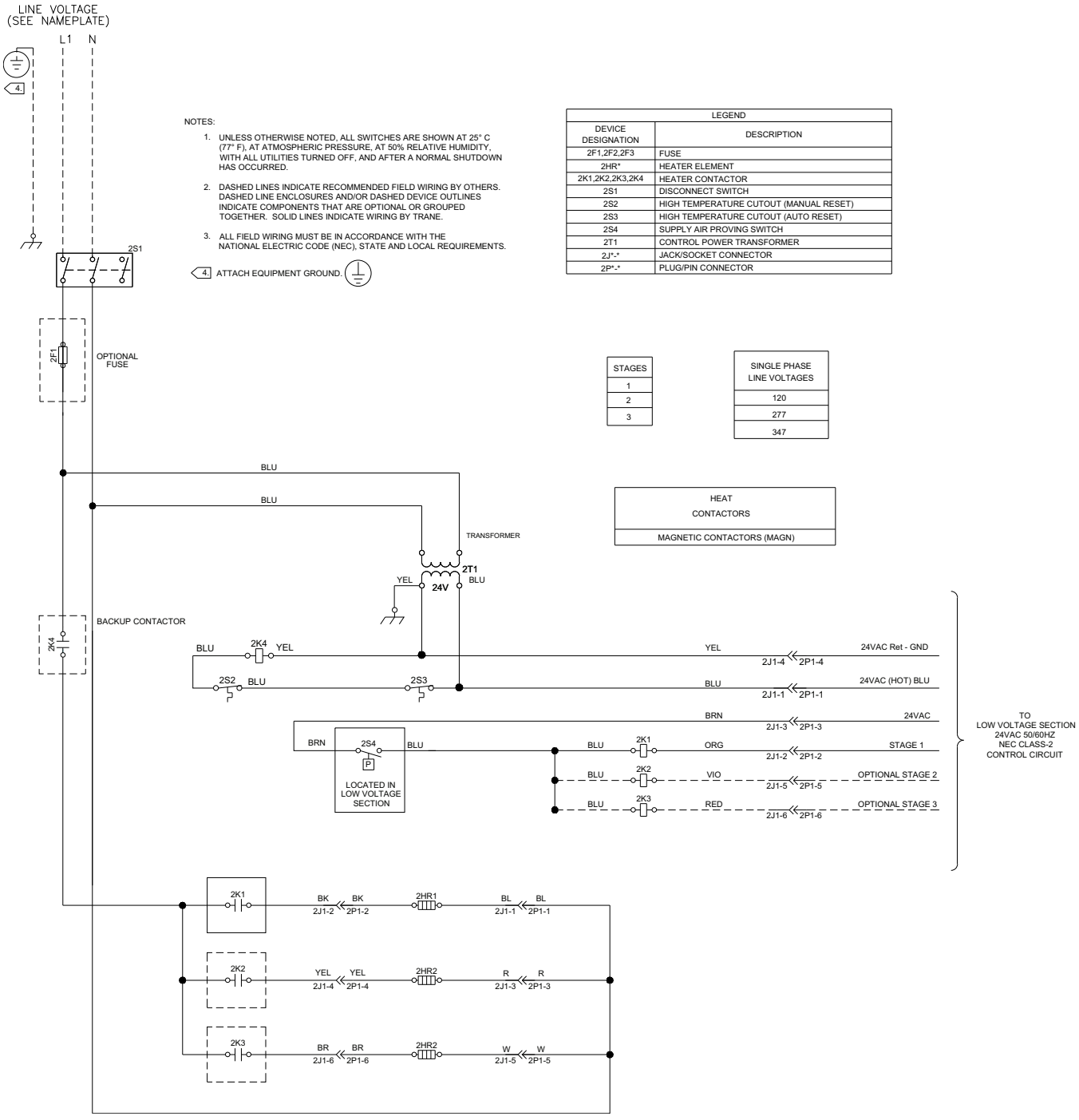


Figure 32. Single-duct, single phase, 2 legs, 3 stages

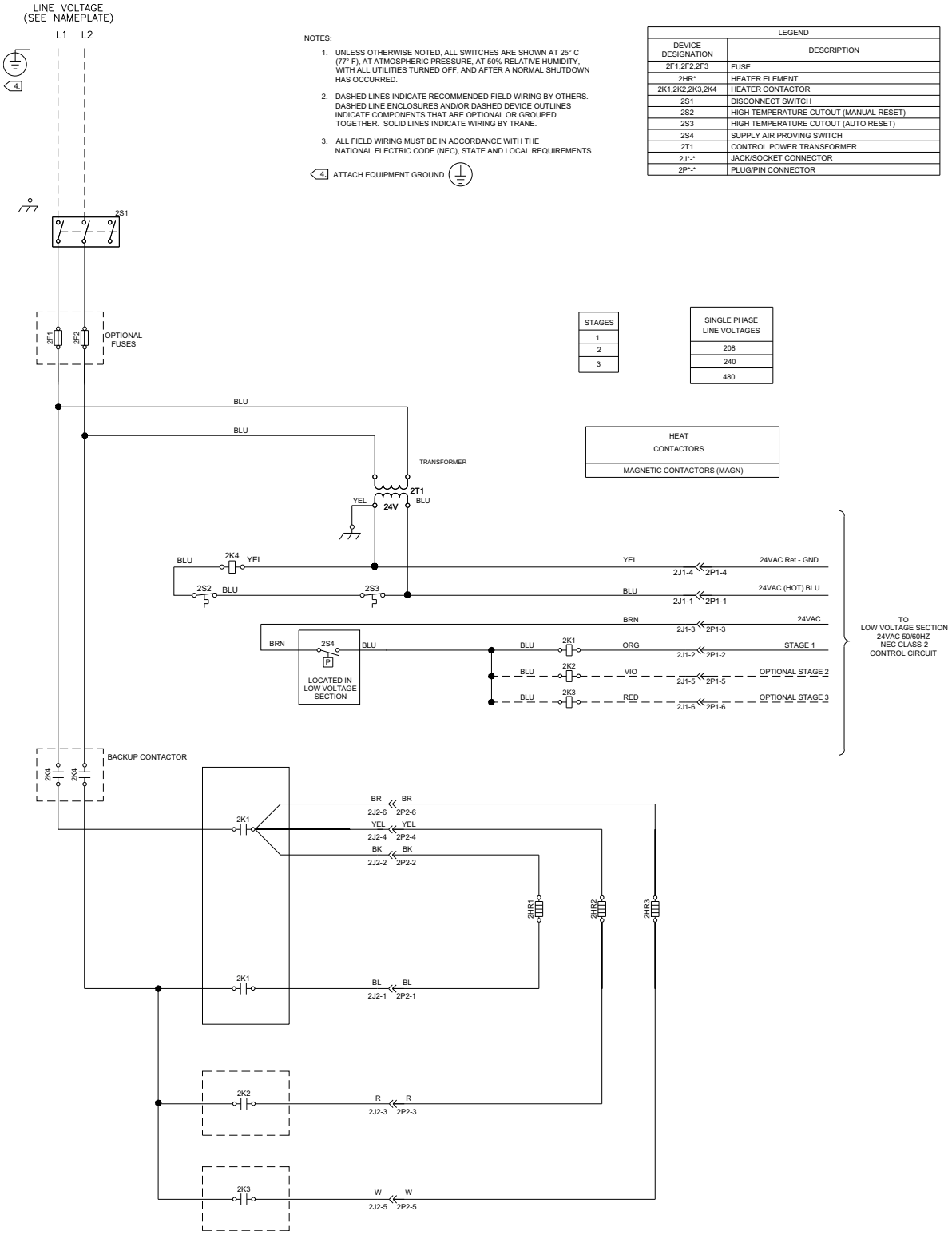


Figure 33. Single-duct, three phase, delta, 3 stages

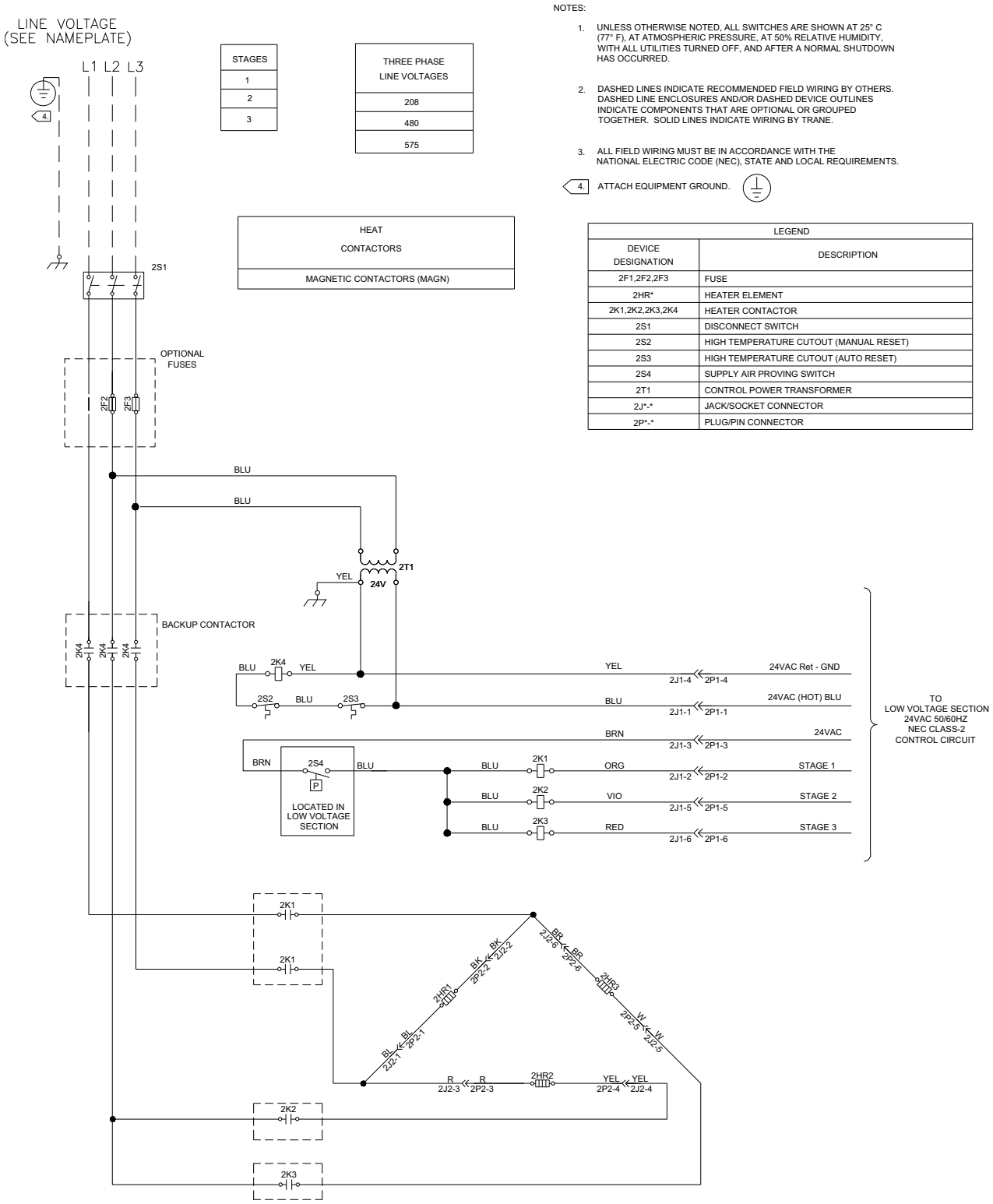


Figure 34. Single-duct, single phase, SCR, 1 leg, 3 stages

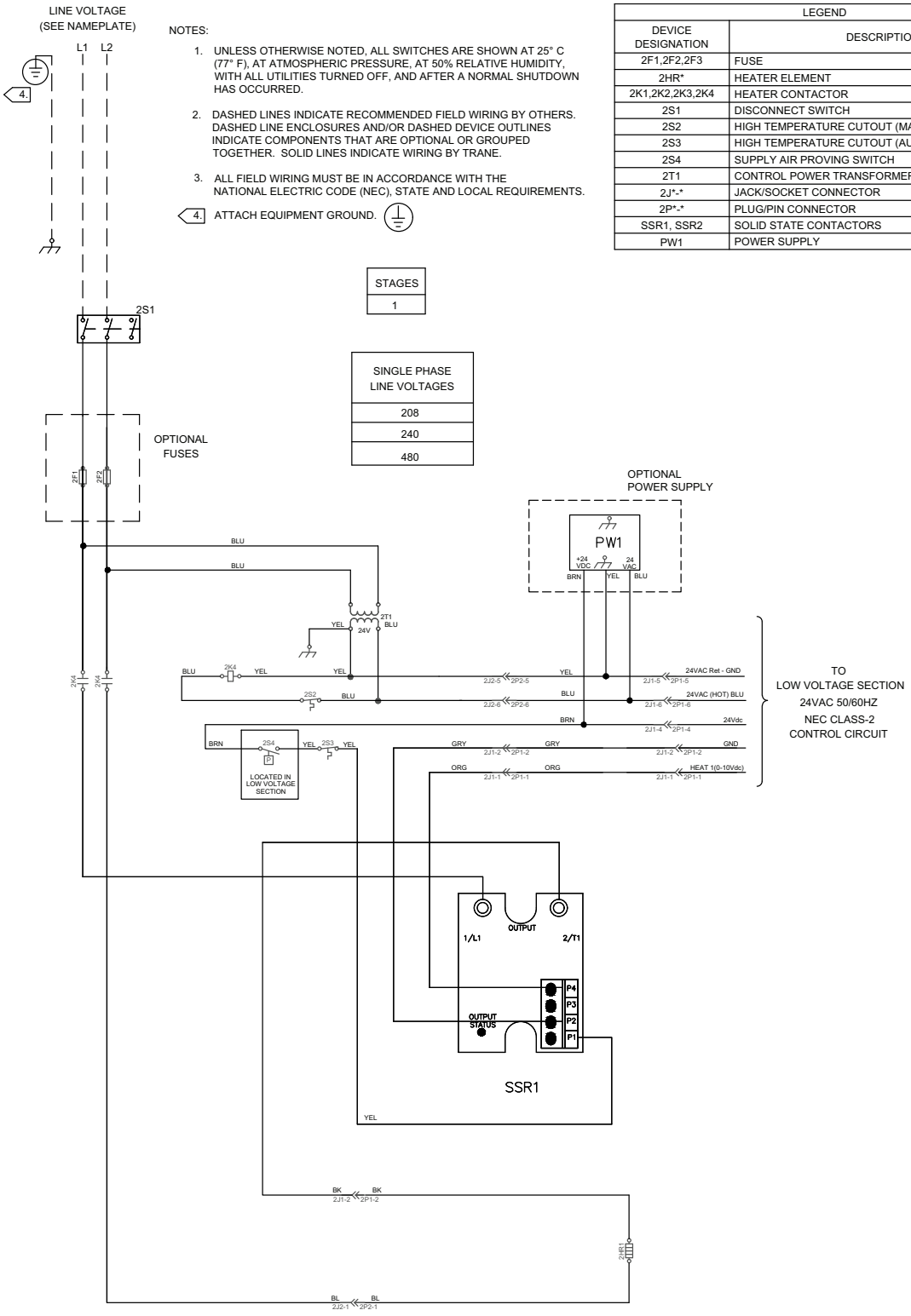
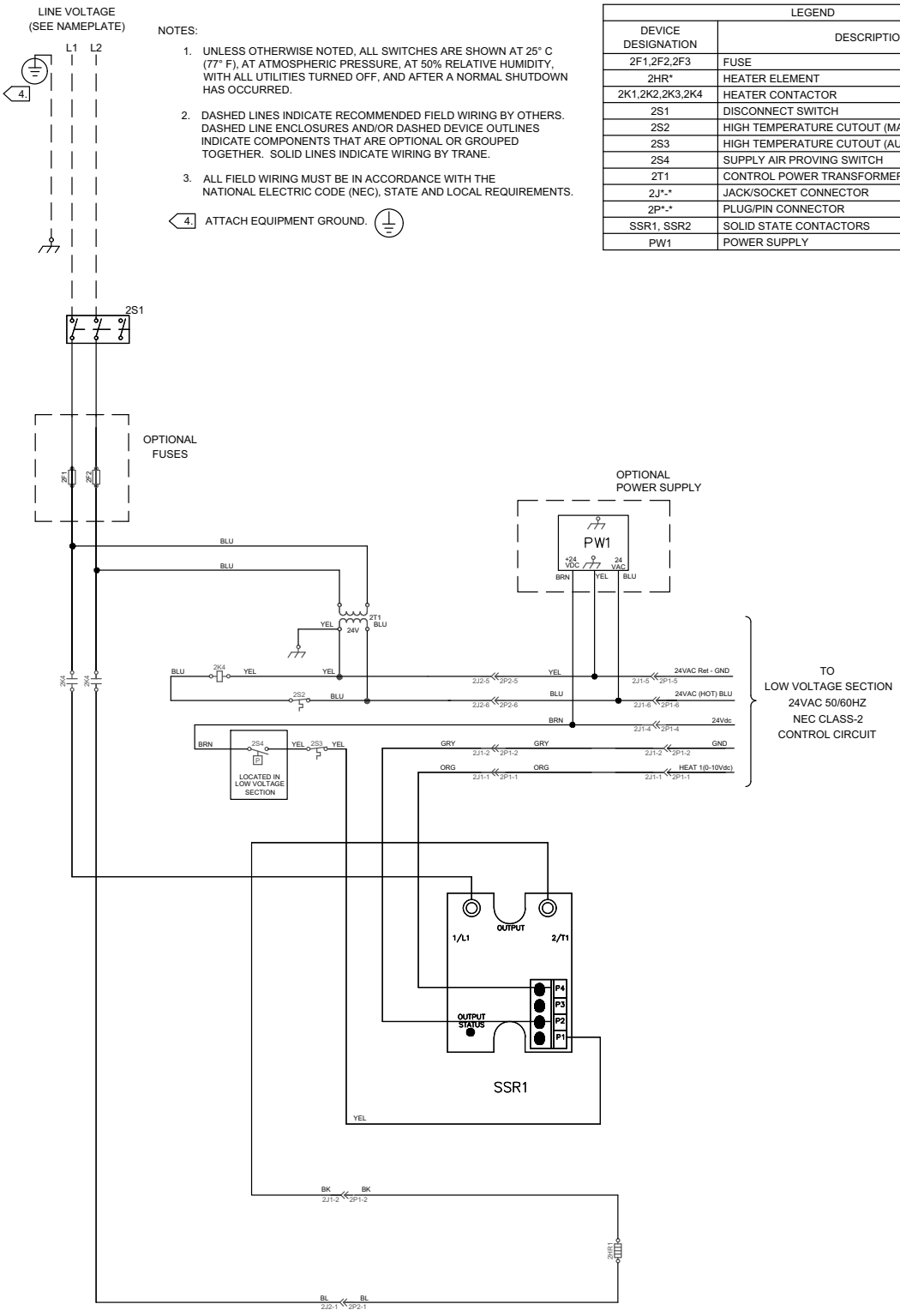


Figure 35. Single-duct, single phase, SCR, 2 legs, 1 stage

STAGES
1

SINGLE PHASE LINE VOLTAGES
208
240
480



NOTES:

1. UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25° C (77° F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TURNED OFF, AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.
2. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS THAT ARE OPTIONAL OR GROUPED TOGETHER. SOLID LINES INDICATE WIRING BY TRANE.
3. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS.

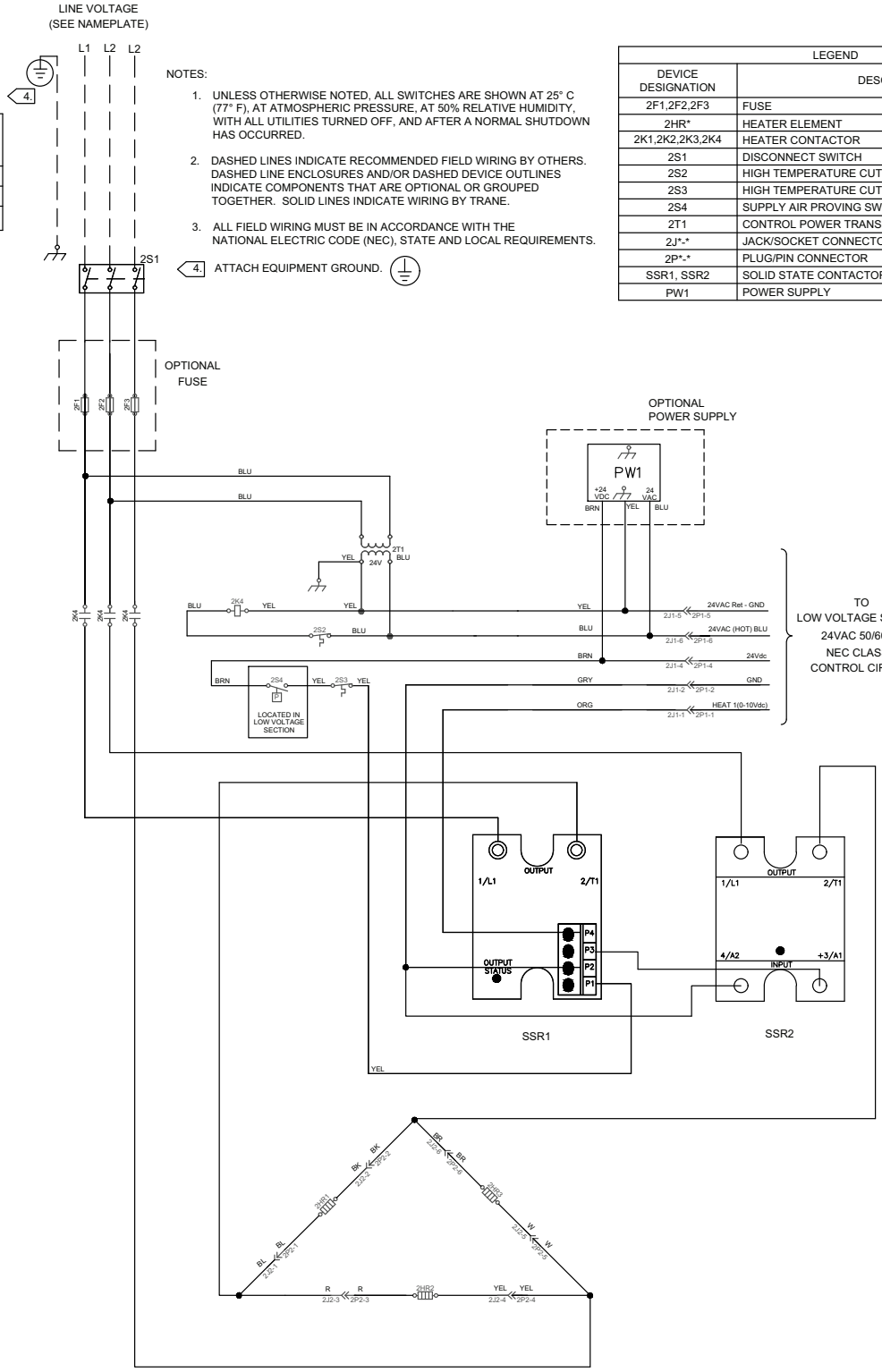
4. ATTACH EQUIPMENT GROUND.

LEGEND	
DEVICE DESIGNATION	DESCRIPTION
2F1,2F2,2F3	FUSE
2HR*	HEATER ELEMENT
2K1,2K2,2K3,2K4	HEATER CONTACTOR
2S1	DISCONNECT SWITCH
2S2	HIGH TEMPERATURE CUTOUT (MANUAL RESET)
2S3	HIGH TEMPERATURE CUTOUT (AUTO RESET)
2S4	SUPPLY AIR PROVING SWITCH
2T1	CONTROL POWER TRANSFORMER
2J*-*	JACK/SOCKET CONNECTOR
2P*-*	PLUG/PIN CONNECTOR
SSR1, SSR2	SOLID STATE CONTACTORS
PW1	POWER SUPPLY

Figure 36. Single-duct, three phase, delta, SCR, 1 stage

STAGES
1

SINGLE PHASE LINE VOLTAGES
208
240
480



NOTES:

1. UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25° C (77° F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TURNED OFF, AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.
2. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND/OR DASHED DEVICE OUTLINES INDICATE COMPONENTS THAT ARE OPTIONAL OR GROUPED TOGETHER. SOLID LINES INDICATE WIRING BY TRANE.
3. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS.

LEGEND	
DEVICE DESIGNATION	DESCRIPTION
2F1,2F2,2F3	FUSE
2HR*	HEATER ELEMENT
2K1,2K2,2K3,2K4	HEATER CONTACTOR
2S1	DISCONNECT SWITCH
2S2	HIGH TEMPERATURE CUTOUT (MANUAL RESET)
2S3	HIGH TEMPERATURE CUTOUT (AUTO RESET)
2S4	SUPPLY AIR PROVING SWITCH
2T1	CONTROL POWER TRANSFORMER
2J*-*	JACK/SOCKET CONNECTOR
2P*-*	PLUG/PIN CONNECTOR
SSR1, SSR2	SOLID STATE CONTACTORS
PW1	POWER SUPPLY

Figure 37. Single-duct, single phase, 1 leg

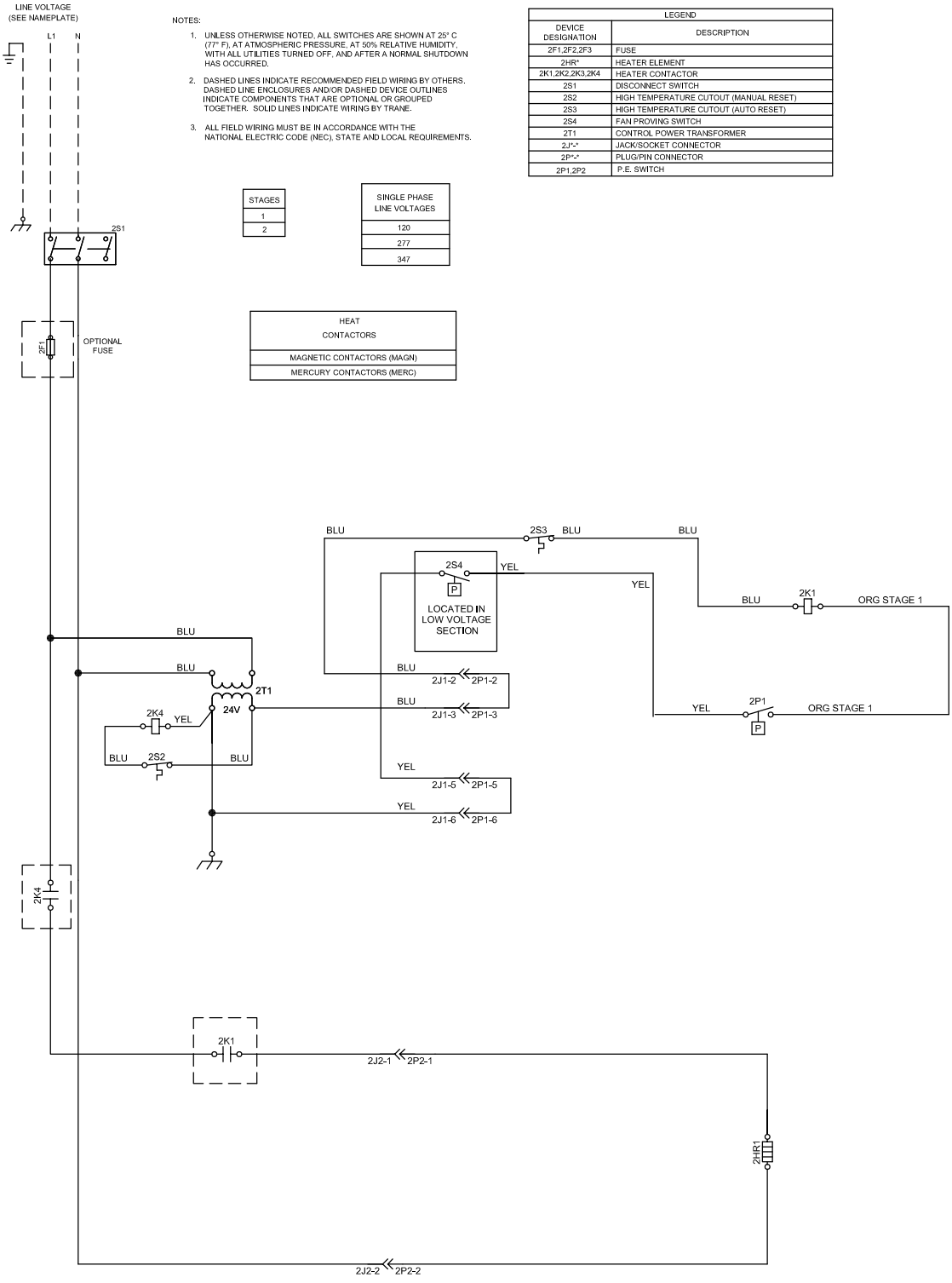


Figure 38. Fan-powered, single phase, 1 leg, 2 stages

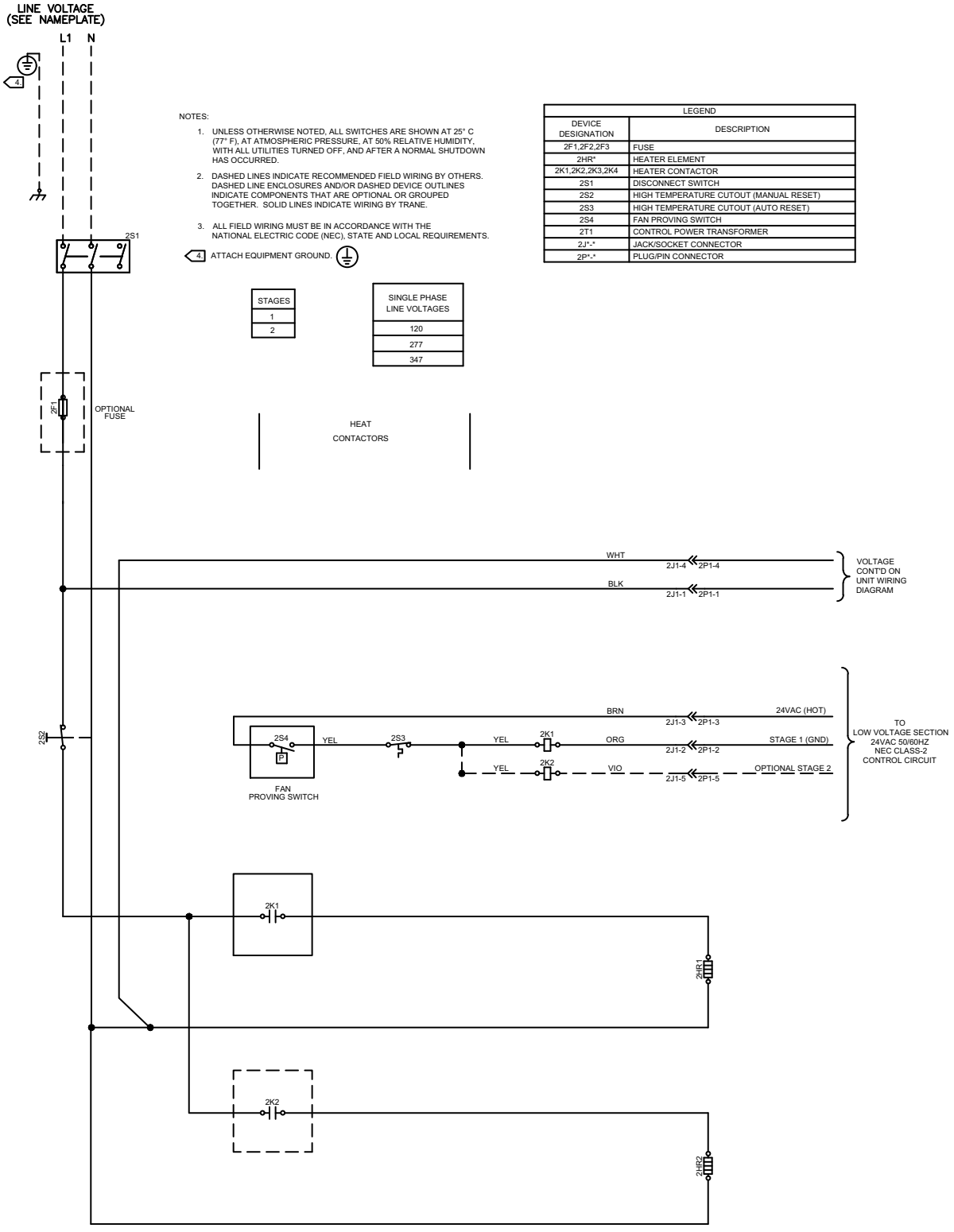


Figure 39. Fan-powered, single phase, 2 legs, 2 stages

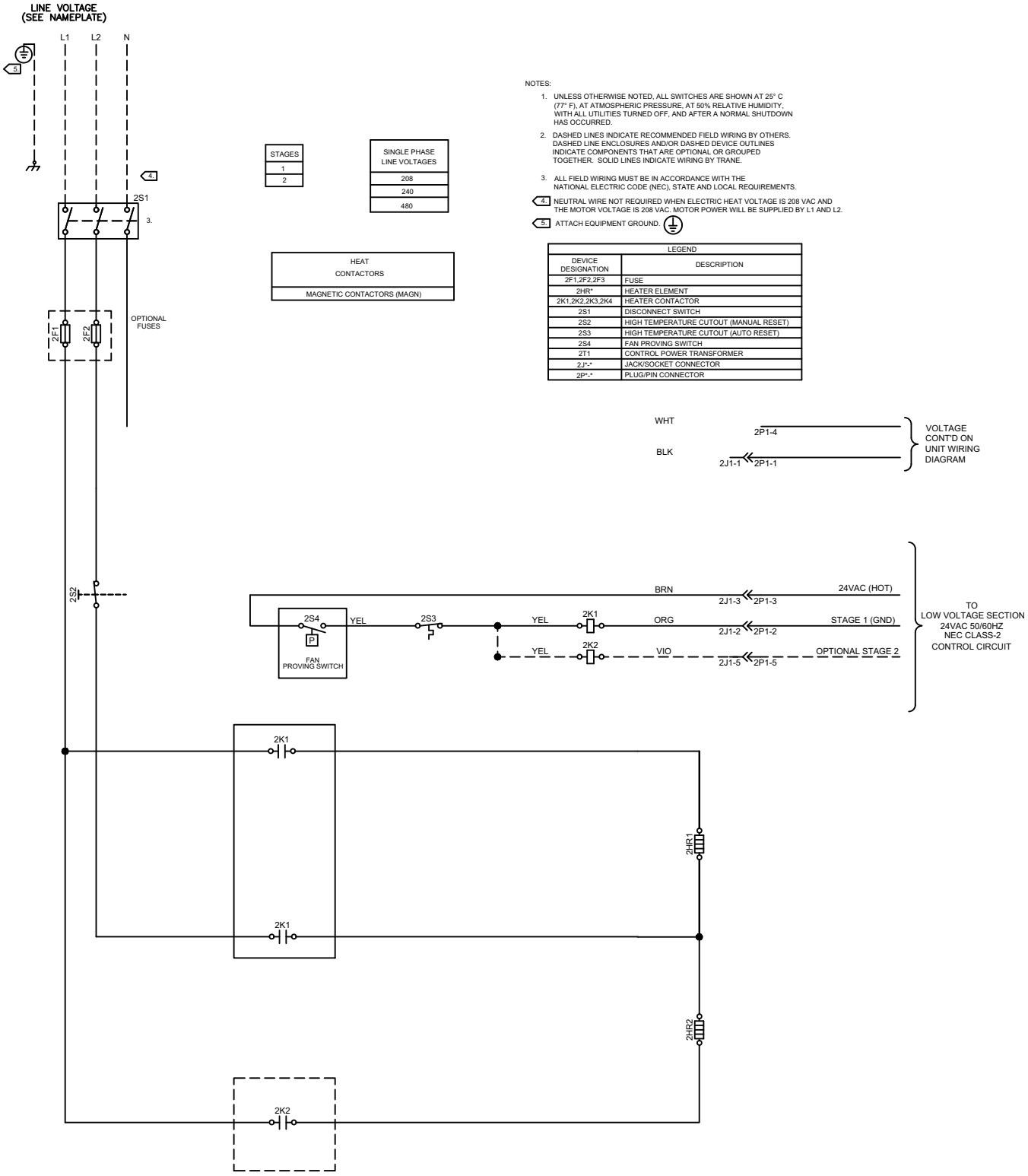
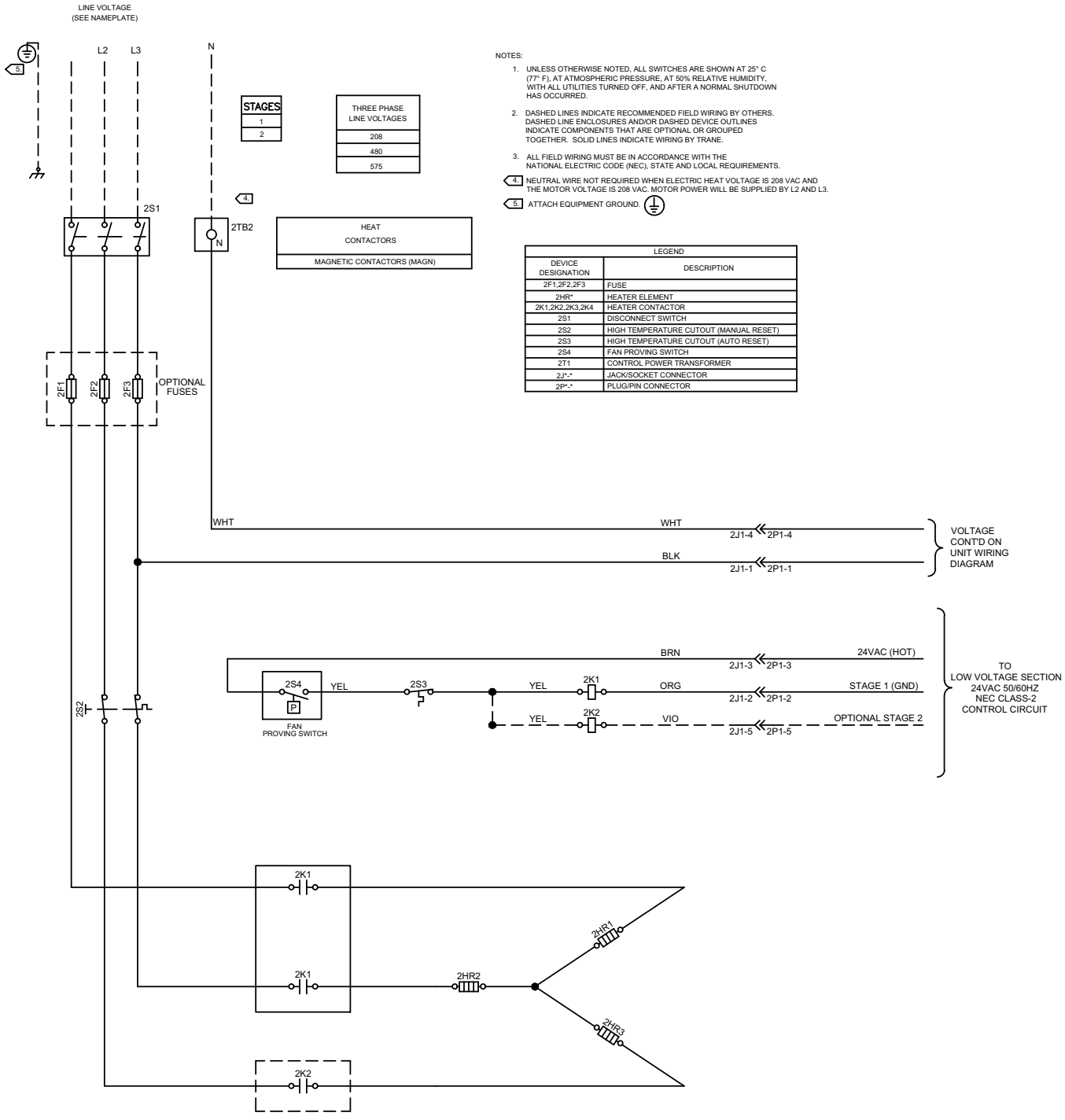


Figure 40. Fan-powered, three phase, wye, 2 stages



Control Box Wiring

Figure 41. Single-duct control box

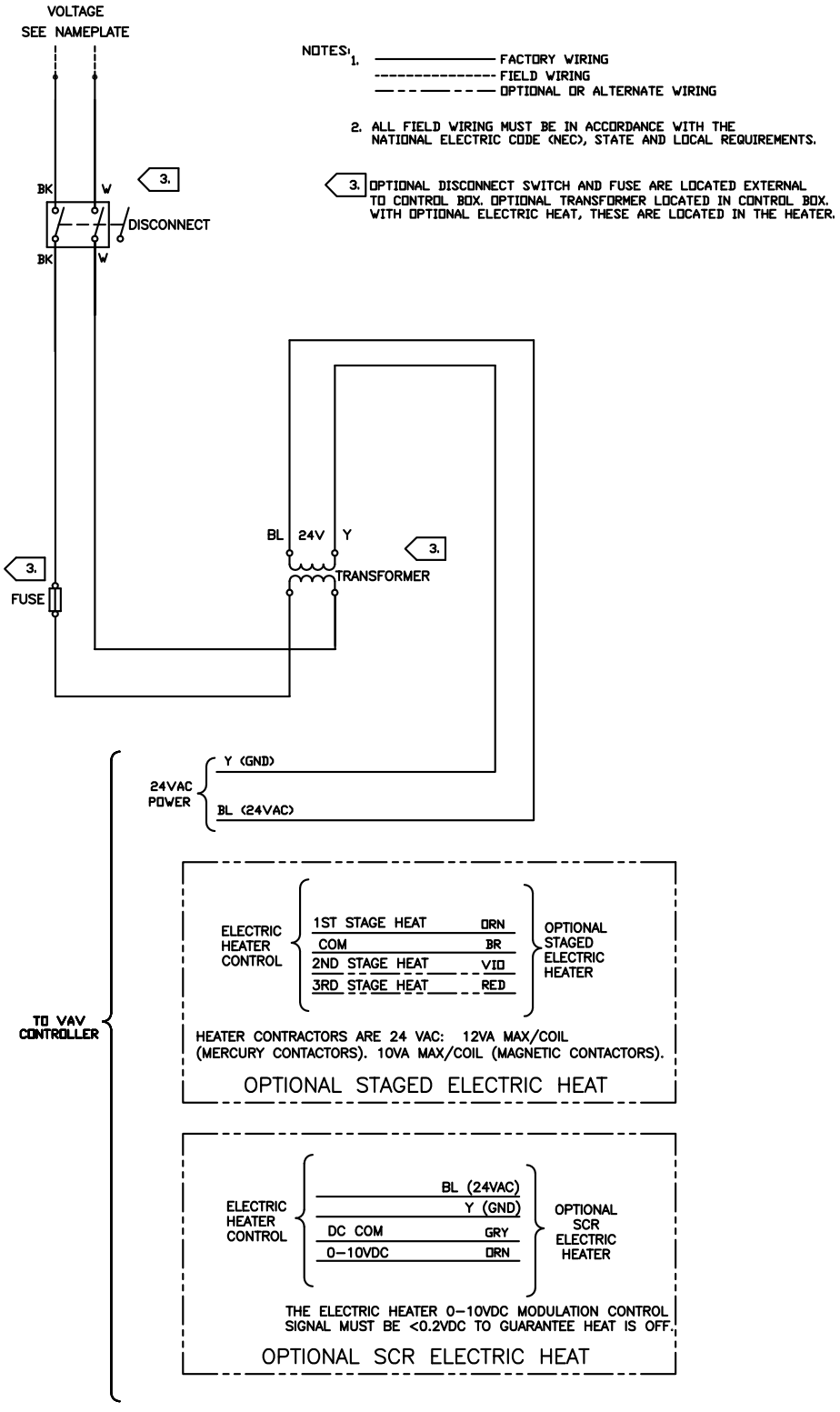


Figure 42. Fan-powered units with PSC motors

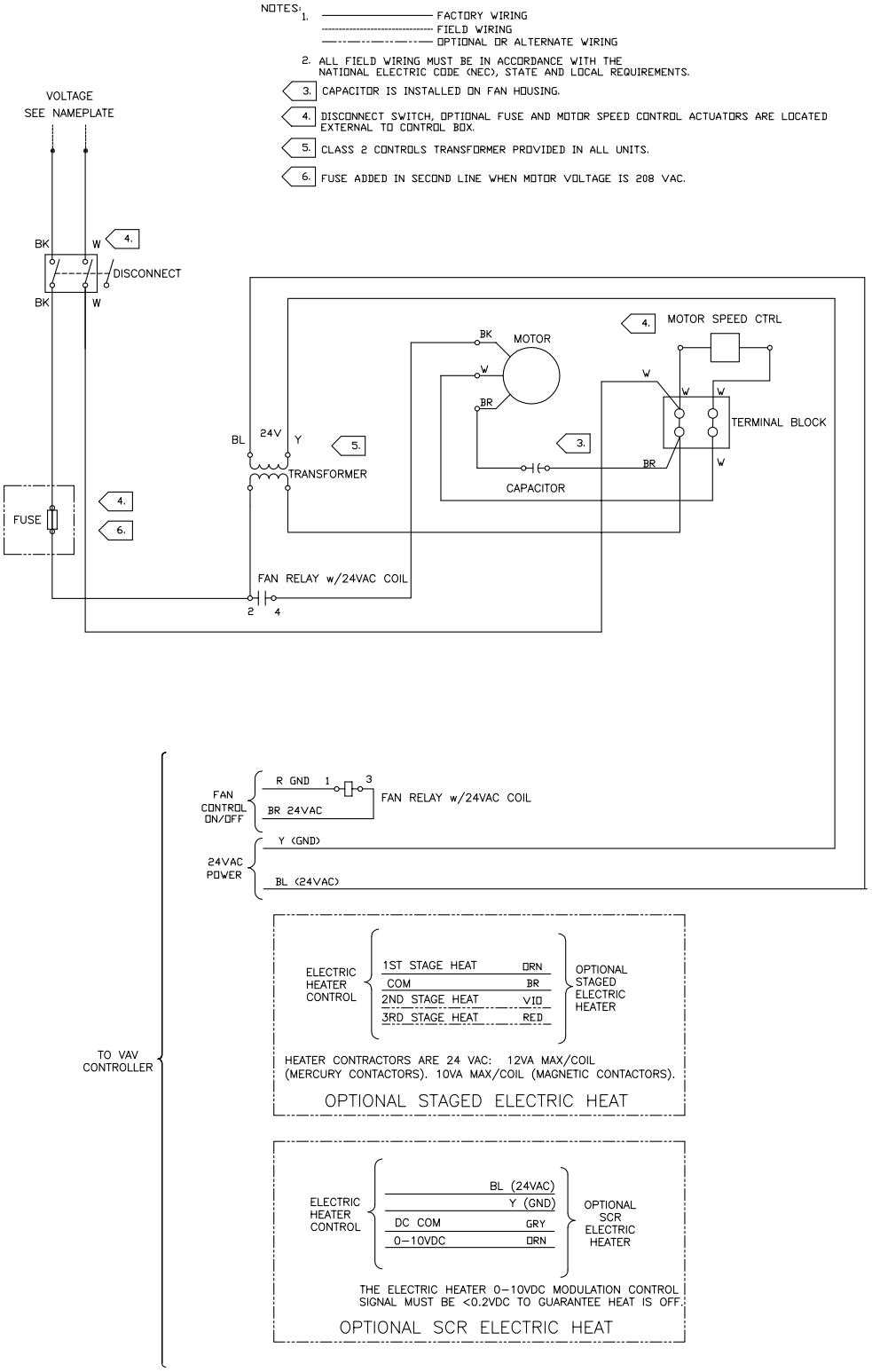


Figure 43. Fan-powered units with ECM motor

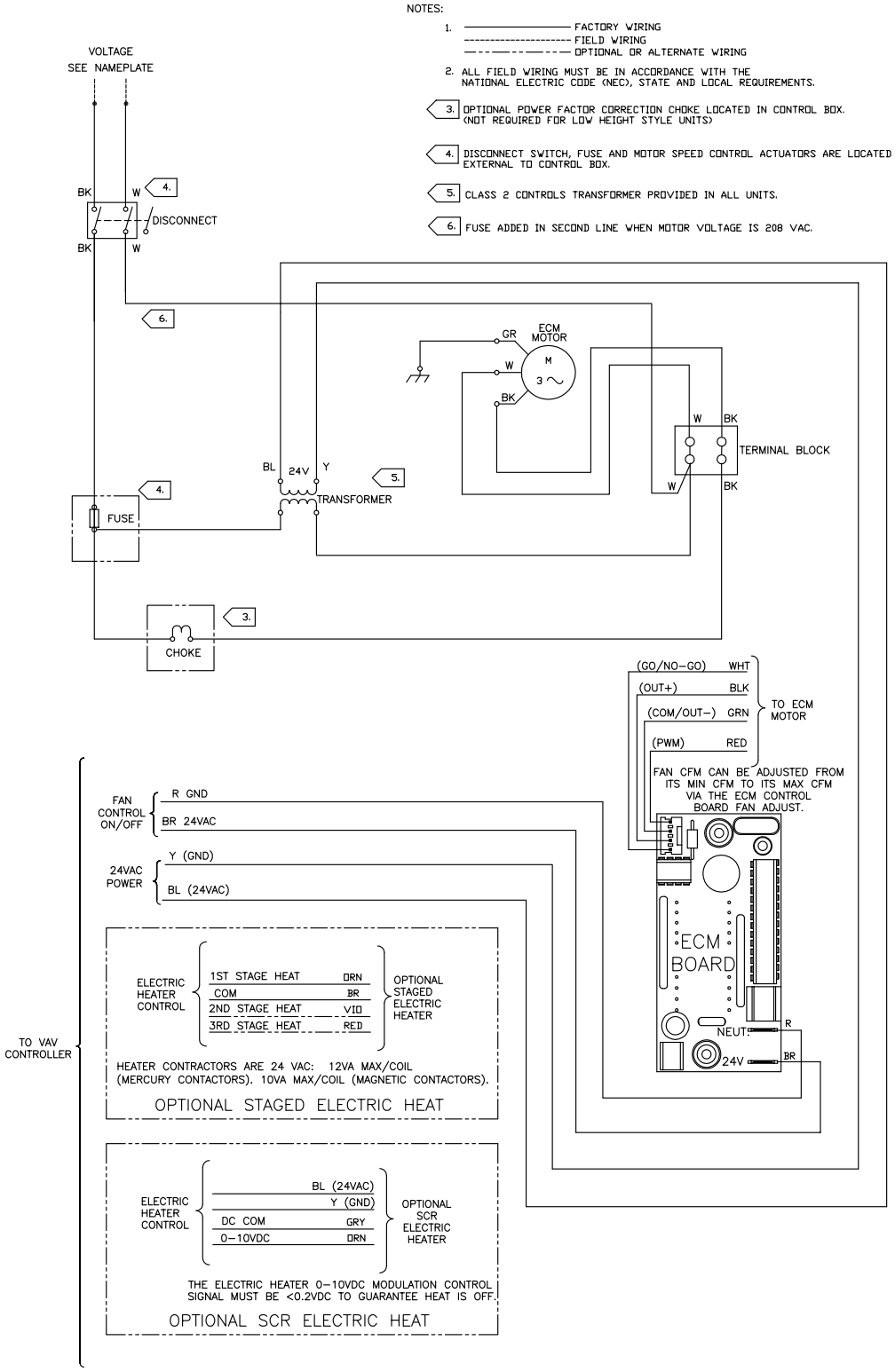
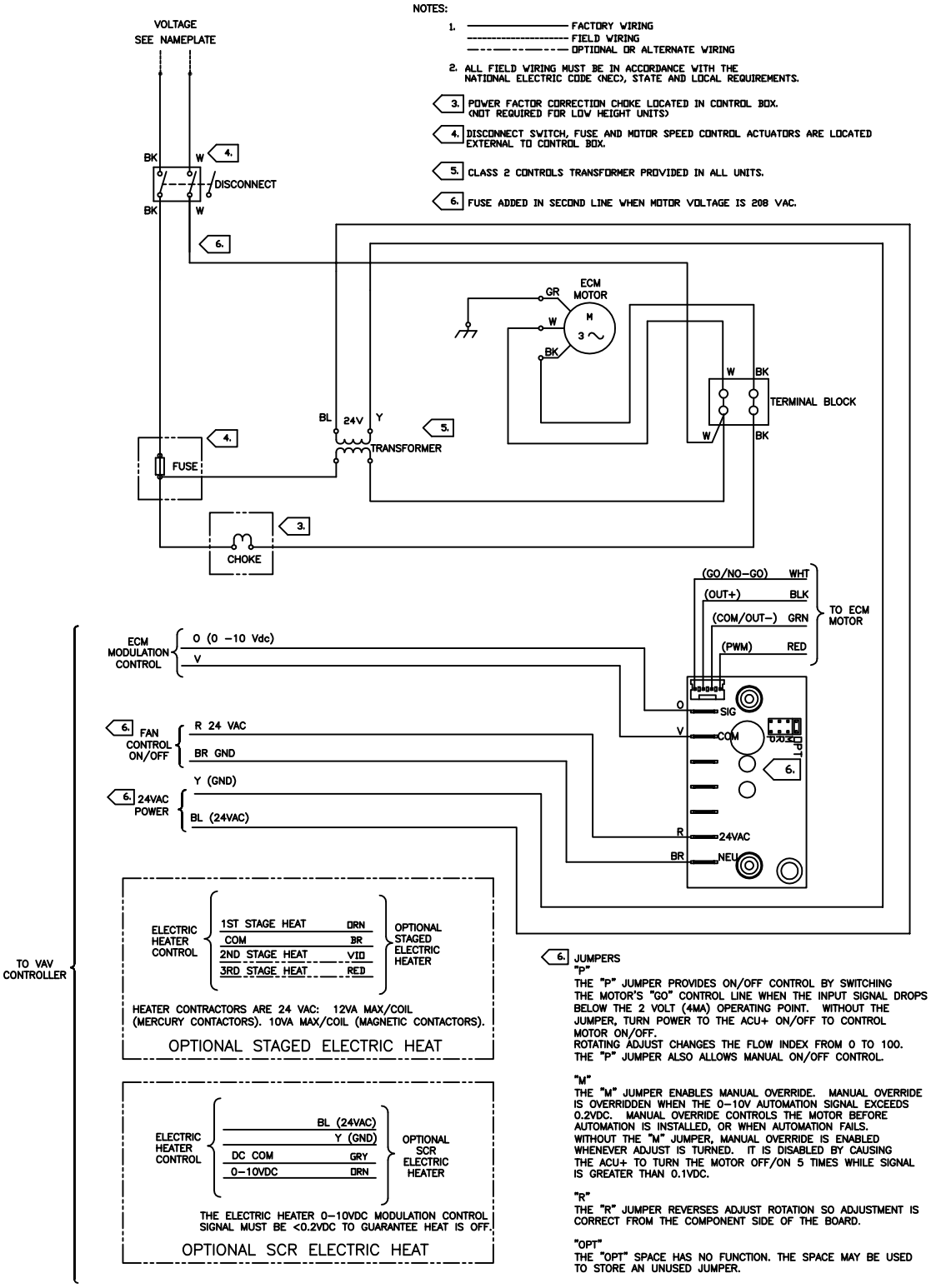


Figure 44. Fan-powered units with ECV motor



Maintenance

Periodic maintenance of the VariTrane™ product is minimal, but necessary for efficient operation. Routine maintenance consists of inspecting/replacing the air filters of the fan-powered terminals.

Motors

The Permanent Split Capacitor (PSC) and the Electrically Commutated Motor (ECM) do not require lubrication during the normal life of operation.

Fan Wheel

Routinely inspect the fan wheel for dirt or debris and clean as necessary.

Filter

Routinely inspect and/or replace the filter on fan-powered terminals depending on the environmental conditions of the plenum.

Water Coil

- Periodically inspect water coils and clean fins.
- Water coils are provided with an access panel as standard to assist with inspection and cleaning.

Fan Motor Replacement

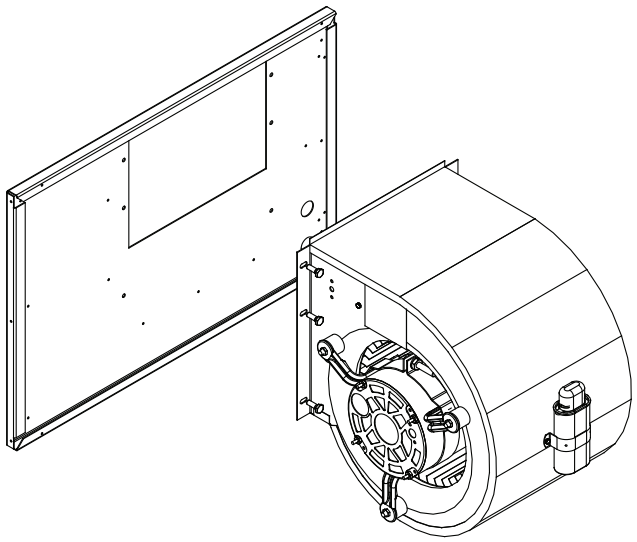
⚠ WARNING

Hazardous Voltage w/Capacitors!

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

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

Figure 45. Standard motor removal



Standard height parallel fan powered fan motors are replaceable through the filter opening and the standard sliding side access panel. To access the fan motor, the fan housing must be detached by removing the mounting bolts that hold the housing to the fan board. Removing the entire housing allows the fan motor, fan housing, and fan wheel to be re-aligned on a workbench or floor and prevent any possible fan wheel rubbing that may occur. Removing the housing will provide access to the motor shaft set screw that holds the fan wheel to the motor shaft.

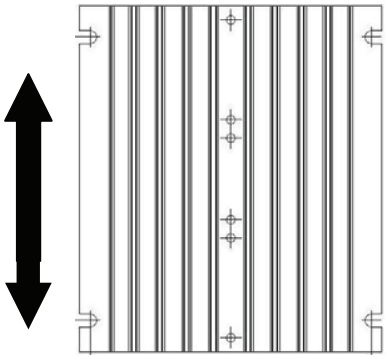
The low height fan assembly has been designed to be removed and replaced as a complete unit.

Standard height series and low height fan powered fans are accessible by removing the bottom access unit panel.

SCR Assembly

SCR solid state relays are used to switch a single heater stage on and off. An intelligent (Manager) relay is used for all single phase applications. For three phase applications, a Manager-Subordinate configuration is used to switch two legs of three phase power to the heater stage. The Manager Relay controls one leg independently, and provides a control signal to the Subordinate Relay, which controls the second leg.

Figure 46. Typical heat sink fin orientation



Bottom View

Every Manager or Manager/Subordinate relay combination is mounted on a heat sink to prevent the relays from overheating during normal operation. The SCR assembly must always be mounted with the heat sink fins oriented vertically (see above) with a minimum clearance of 0.5 inches on all sides of the heat sink for cooling. Where additional cooling slots are provided in the heater, the VAV unit must be mounted with a minimum of 1 inch clearance in front of the slots.

When the 0-10 VDC control voltage is present at the Manager relay in both single and three phase applications, an ON indicating LED light on the Manager relay will blink continually (approximately 0.5 seconds on, 1.0 seconds off). If the load side voltage is also present at the relay(s), the Manager relay LED and the Subordinate relay LED blink rate will increase as the control signal increases. When the control signal reaches a maximum of 10 VDC, all LEDs will be lit continuously, indicating that the relays are full-open and continuously conducting. If the control signal is present in three phase applications while the load side voltage is not, only the Manager relay LED will light and the blink rate will be constant.

If the SCR assembly does not appear to be functioning properly, verify that all required voltages are present and all that all wiring is properly connected. If all these conditions are verified, and the SCR LED does not light and/or the SCR relay does not conduct, the entire SCR heat sink assembly should be changed out. Individual Manager or Subordinate relays should not be replaced.

Trane - by Trane Technologies (NYSE: TT), a global innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

Trane has a policy of continuous product and product data improvements and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

VAV-SVX08AA-EN 15 Sep 2024
Supersedes VAV-SVX08Y-EN (September 2023)

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