Preliminary Submittal

Inspections Division
Date: 11/20/17

Prepared For:
All Bidders

Date: *September 15, 2017*

Customer P.O. Number:
Customer Project Number:

Sold To:

Job Number:
Job Name:
HVAC Services - Rob - Medical Offices

Trane U.S. Inc. dba Trane is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product
4	3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
1	Split System Air Conditioning Units (Small)
1	Ductless Mini-Splits Systems
6	Architectural Electric Wall Heaters
33	Variable Air Volume Single Duct Terminal Units
1	Light Commercial Unitary System Panels
2	Variable Air Volume Changeover/Bypass Units
2	VAV Changeover/Bypass-System Controllers

The attached information describes the equipment we propose to furnish for this project, and is submitted for your approval.

Product performance and submittal data is valid for a period of 6 months from the date of submittal generation. If six months or more has elapsed between submittal generation and equipment release, the product performance and submittal data will need to be verified. It is the customer's responsibility to obtain such verification.

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Tag Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop (Qty: 4)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1B, RTU-2B	2	7.5 Ton R410A PKGD Gas/Electric	YSC092F3RLA--C001C2A60100000000000
A2	RTU-1A, RTU-2A	2	8.5 Ton R410A PKGD Gas/Electric	YSC102F3RLA--C001C2A60100000000000

Product Data - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

All Units

DX cooling, gas heat
Standard efficiency
Convertible configuration
Major design sequence
208-230/60/3
Microprocessor controls 3ph
Low gas heat 3ph
Economizer Dry Bulb 0-100%
Standard condenser coil w/hail guard
Through the base gas & electrical 3ph
Circuit breaker
Unpowered convenience outlet (3ph units)
BACnet Communications Interface 3 ph
Frostat 3ph
Roof curb (Fld)
Power exhaust (Fld)

Item: A1 Qty: 2 Tag(s): RTU-1B, RTU-2B

7.5 Ton Dual compressor
Room sensor with temperature adjustment w/override (Fld)

Item: A2 Qty: 2 Tag(s): RTU-1A, RTU-2A

8.5 Ton

Mechanical Specifications - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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General
The units shall be convertible airflow. The operating range shall be between 115°F and 0°F in cooling as standard from the factory for units with microprocessor controls. Operating range for units with electromechanical controls shall be between 115°F and 40°F. Cooling performance shall be rated in accordance with ARI testing procedures. All units shall be factory assembled, internally wired, fully charged with R-410A, and 100 percent run tested to check cooling operation, fan and blower rotation, and control sequence before leaving the factory. Wiring internal to the unit shall be colored and numbered for simplified identification. Units shall be cULus listed and labeled, classified in accordance for Central Cooling Air Conditioners.

Casing
Unit casing shall be constructed of zinc coated, heavy gauge, galvanized steel. Exterior surfaces shall be cleaned, phosphatized, and finished with a weather-resistant baked enamel finish. Unit's surface shall be tested 672 hours in a salt spray test in compliance with ASTM B117. Cabinet construction shall allow for all maintenance on one side of the unit. Service panels shall have lifting handles and be removed and reinstalled by removing two fasteners while providing a water and air tight seal. All exposed vertical panels and top covers in the indoor air section shall be insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material. The base of the unit shall be insulated with 1/8 inch, foil-faced, closed-cell insulation. All insulation edges shall be either captured or sealed. The unit's base pan shall have no penetrations within the perimeter of the curb other than the raised 1 1/8 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up. The base of the unit shall have provisions for forklift and crane lifting, with forklift capabilities on three sides of the unit.

Unit Top
The top cover shall be one piece construction or, where seams exist, it shall be double-hemmed and gasket-sealed. The ribbed top adds extra strength and enhances water removal from unit top.

Filters
Throwaway filters shall be standard on all units. Optional 2-inch MERV 8 and MERV 13 filters shall also be available.

Compressors
All units shall have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps. Motor shall be suction gas-cooled and shall have a voltage utilization range of plus or minus 10 percent of unit nameplate voltage. Internal overloads shall be provided with the scroll compressors.

Dual compressors are outstanding for humidity control, light load cooling conditions and system back-up applications. Dual compressors are available on 7½-10 ton models and allow for efficient cooling utilizing 3-stages of compressor operation for all high efficiency models.

Notes:
Crankcase heaters are optional on YSC (036, 048, 060, 072, 090, 102, 120); standard on YHC (036, 048, 060, 072, 092, 102, 120).

Indoor Fan
The following units shall be equipped with a direct drive plenum fan design (T/YSC120F,T/YHC074F, T/YHC092F,T/YHC102F, 120F). Plenum fan design shall include a backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor. All plenum fan designs will have a variable speed adjustment potentiometer located in the control box.

3 to 5 ton units (high efficiency 3-phase with optional motor) are belt driven, FC centrifugal fans with adjustable motor sheaves. 3 to 5 ton units (standard and high efficiency 3-phase) have multispeed, direct drive motors. All 6 to 8½ ton units (standard efficiency) shall have belt drive motors with an adjustable idler-arm assembly for quick-adjustment to fan belts and motor sheaves. All motors shall be thermally protected. All 10 tons, 6 ton (074), 7½ to 8½ (high efficiency) units have variable speed direct drive motors. All indoor fan motors meet the U.S. Energy Policy Act of 1992 (EPACT).

Outdoor Fans
The outdoor fan shall be direct-drive, statically and dynamically balanced, draw-through in the vertical discharge position. The fan motor shall be permanently lubricated and shall have built-in thermal overload protection.

Evaporator and Condenser Coils
Internally finned, 5/16" copper tubes mechanically bonded to a configured aluminum plate fin shall be standard. Evaporator coils are standard for all 3 to 10 ton standard efficiency models. Microchannel condenser coils are standard

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for all 3 to 10 ton standard efficiency models and 4, 5, 6, 7.5, 8.5 ton high efficiency models. The microchannel condenser coil is not offered on the 4 and 5 ton dehumidification model. Due to flat streamlined tubes with smal and metallurgical tube-to-fin bond, microchannel coil has better heat transfer performance. Microchannel conden can reduce system refrigerant charge by up to 50% because of smaller internal volume, which leads to better compressor reliability. Compact all-aluminum microchannel coils also help to reduce the unit weight. These all aluminum coils are recyclable. Galvanic corrosion is also minimized due to all aluminum construction. Strong aluminum brazed structure provides better fin protection. In addition, flat streamlined tubes also make microchannel coils more dust resistant and easier to clean. Coils shall be leak tested at the factory to ensure the pressure integrity. The evaporator coil and condenser coil shall be leak tested to 600 psig. The assembled unit shall be leak tested to 465 psig. The condenser coil shall have a patent pending 1+1+1 hybrid coil designed with slight gaps for ease of cleaning. A plastic, dual-sloped, removable and reversible condensate drain pan with through-the-base condensate drain is standard.

Tool-less Hail Guards
Tool-less, hail protection quality coil guards are available for condenser coil protection.

Controls
Unit shall be completely factory-wired with necessary controls and contactor pressure lugs or terminal block for power wiring. Unit shall provide an external location for mounting a fused disconnect device. A choice of microprocessor or electromechanical controls shall be available. Microprocessor controls provide for all 24V control functions. The resident control algorithms shall make all heating, cooling, and/or ventilating decisions in response to electronic signals from sensors measuring indoor and outdoor temperatures. The control algorithm maintains accurate temperature control, minimizes drift from set point, and provides better building comfort. A centralized microprocessor shall provide anti-short cycle timing and time delay between compressors to provide a higher level of machine protection. 24-volt electromechanical control circuit shall include control transformer and contactor

High Pressure Control
All units include High Pressure Cutout as standard.

Phase monitor
Phase monitor shall provide 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. Phase monitor is equipped with an LED that provides an ON or FAULT indicator. There are no field adjustments. The module will automatically reset from a fault condition.

BACnet Communications
The BACnet communications interface allows the unit to communicate directly with a generic open protocol BACnet MS/TP Network Building Automation System Controls.

Refrigerant Circuits
Each refrigerant circuit offer thermal expansion valve as standard. Service pressure ports, and refrigerant line filter driers are factory-installed as standard. An area shall be provided for replacement suction line driers.

Gas Heating Section
The heating section shall have a progressive tubular heat exchanger design using stainless steel burners and corrosion resistant steel throughout. An induced draft combustion blower shall be used to pull the combustion products through the firing tubes. The heater shall use a direct spark ignition (DSI) system. On initial call for heat, the combustion blower shall purge the heat exchanger for 20 seconds before ignition After three unsuccessful ignition attempts, the entire heating system shall be locked out until manually reset at the thermostat/zone sensor. Units shall be suitable for use with natural gas or propane (field-installed kit) and also comply with the California requirement for low NOx emissions (Gas/Electric Only).

Powered or Unpowered Convenience Outlet
This is a GFCI, 120v/15amp, 2 plug, convenience outlet, either powered or unpowered. When the convenience outlet is powered, a service receptacle disconnect will be available. The convenience outlet is powered from the line side of the disconnect or circuit breaker, and therefore will not be affected by the position of the disconnect or circuit breaker. This option can only be ordered when the Through the Base Electrical with either the Disconnect Switch or Circuit Breaker option is ordered.

Economizer
This accessory shall be available with or without barometric relief. The assembly includes fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control. The barometric relief shall provide a pressure operated damper that shall be gravity closing

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and shall prohibit entrance of outside air during the equipment off cycle. Optional solid state or differential entha control shall be available for either factory or field installation. The economizer arrives in the shipping position ar be moved to the operating position by the installing contractor.

Through the Base Gas Piping
The unit shall include a standard through the base gas provision. This option shall have all piping necessary including, black steel, manual gas shut-off valve, elbows, and union. The manual shutoff valve shall include a 1/8" NPT pressure tap. This assembly will require minor field labor to install.

Through the Base Electrical Access
An electrical service entrance shall be provided allowing electrical access for both control and main power connections inside the curb and through the base of the unit. Option will allow for field installation of liquid-tight conduit and an external field-installed disconnect switch.

Through the Base Electrical with Circuit Breaker
This option is a thermal magnetic, molded case, HACR Circuit Breaker with provisions for through the base electrical connections. The circuit breaker will be installed in a water tight enclosure in the unit with access through a swinging door. Wiring will be provided from the switch to the unit high voltage terminal block. The circuit breaker will provide overcurrent protection, be sized per NEC and UL guidelines, and be agency recognized by UL/CSA.

Frostat
This option is to be utilized as a safety device. The Frostat opens when temperatures on the evaporator coil fall below 10°F. The temperature will need to rise to 50°F before closing. This option should be utilized in low airflow or high outside air applications. (Cooling with Electric Heat Only.)

Accessory - Powered Exhaust
The powered exhaust shall provide exhaust of return air, when using an economizer, to maintain better building pressurization.

Accessory - Roof Curb
The roof curb shall be designed to mate with the unit's downflow supply and return and provide support and a water tight installation when installed properly. The roof curb design shall allow field fabricated rectangular supply/return ductwork to be connected directly to the curb. Curb design shall comply with NRCA requirements. Curb shall be shipped knocked down for field assembly and shall include wood nailer strips.

Frostat
This option is to be utilized as a safety device.The Frostat opens when temperatures on the evaporator coil fall below 10°F.The temperature will need to rise to 50°F before closing.This feature should be utilized in low airflow or high outside air applications (cooling only).

Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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PACKAGED GAS / ELECTRICAL

ISOMETRIC VIEW

NOTES:
1. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION.

PLAN VIEW UNIT

DIMENSION DRAWING

PACKAGED GAS / ELECTRICAL

DIMENSION DRAWING

Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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ISOMETRIC-PACKAGED COOLING

Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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NOTES:
1. THRU -THE -BASE GAS AND ELECTRICAL IS NOT STANDARD. VERIFY OPTION IN PRODUCT DATA IN THIS DOCUMENT.
2. VERIFY WEIGHT, CONNECTION, OPTION CONFIGURATION AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

THRU THE BASE GAS / ELECTRICAL

PLAN / ISO VIEW DRAWING

Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1 Qty: 2 Tag(s): RTU-1B, RTU-2B

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ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)

Model:	YSC092F	Oversized Motor	
Unit Operating Voltage:	187-253	MCA:	N/A
Unit Primary Voltage:	208	MFS:	N/A
Unit Secondary Voltage	230	MCB:	N/A
Unit Hertz:	60		
Unit Phase:	3		
EER	11.2		
Standard Motor		Field Installed Oversized Motor	
MCA:	39.3	MCA:	N/A
MFS:	50.0	MFS:	N/A
MCB:	50.0	MCB:	N/A

HEATING PERFORMANCE

HEATING - GENERAL DATA

Heating Model:	Low
Heating Input (BTU):	120,000
Heating Output (BTU):	96,200
No. Burners:	3
No. Stages	1
Gas Inlet Pressure	
Natural Gas (Min/Mix):	4.5/14
LP (Min/Max)	11.0/14.0
Gas Pipe Connection Size:	1/2"

INDOOR MOTOR

Standard Motor		Oversized Motor		Field Installed Oversized Motor	
Number:	1	Number:	N/A	Number:	N/A
Horsepower:	1.0	Horsepower:	N/A	Horsepower:	N/A
Motor Speed (RPM):	--	Motor Speed (RPM):	N/A	Motor Speed (RPM):	N/A
Phase	3	Phase	N/A	Phase	N/A
Full Load Amps:	3.6 - 3.5	Full Load Amps:	N/A	Full Load Amps:	N/A
Locked Rotor Amps:	12.5	Locked Rotor Amps:	N/A	Locked Rotor Amps:	N/A

COMPRESSOR Circuit 1/2

Number:	1
Horsepower:	3.7/3.1
Phase:	3
Rated Load Amps:	14.5/13.6
Locked Rotor Amps:	98.0/83.0

OUTDOOR MOTOR

Number:	1
Horsepower:	0.7
Motor Speed (RPM):	1100
Phase:	1
Full Load Amps:	4.0
Locked Rotor Amps:	9.3

POWER EXHAUST ACCESSORY (3)

(Field Installed Power Exhaust)

Phase:	1
Horsepower:	0.87
Motor Speed (RPM):	1075
Full Load Amps:	5.7
Locked Rotor Amps:	13.6

FILTERS

Type:	Throwaway
Furnished:	Yes
Number	4
Recommended	20"x25"x2"

REFRIGERANT (2)

Type	R-410
Factory Charge	
Circuit #1	3.9 lb
Circuit #2	3.6 lb

NOTES:
1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.

Unit Dimensions - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A2 Qty: 2 Tag(s): RTU-1A, RTU-2A

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ELECTRICAL / GENERAL DATA

GENERAL (2)(4)(6)

Model:	YSC102F	Oversized Motor	
Unit Operating Voltage:	187-253	MCA:	N/A
Unit Primary Voltage:	208	MFS:	N/A
Unit Secondary Voltage	230	MCB:	N/A
Unit Hertz:	60		
Unit Phase:	3		
EER	11.2		
Standard Motor		Field Installed Oversized Motor	
MCA:	43.3	MCA:	N/A
MFS:	50.0	MFS:	N/A
MCB:	50.0	MCB:	N/A

HEATING PERFORMANCE

HEATING - GENERAL DATA

Heating Model:	Low
Heating Input (BTU):	120,000
Heating Output (BTU):	96,000
No. Burners:	3
No. Stages	1

Gas Inlet Pressure

Natural Gas (Min/Mix):	4.5/14
LP (Min/Max)	11.0/14.0
Gas Pipe Connection Size:	1/2"

INDOOR MOTOR

	Standard Motor	Oversized Motor	Field Installed Oversized Motor
Number:	1	N/A	N/A
Horsepower:	2.0	N/A	N/A
Motor Speed (RPM):	--	N/A	N/A
Phase	3	N/A	N/A
Full Load Amps:	6.30	N/A	N/A
Locked Rotor Amps:	48.0	N/A	N/A

COMPRESSOR Circuit 1/2

Number:	2
Horsepower:	3.7/3.7
Phase:	3
Rated Load Amps:	15.9/13.1
Locked Rotor Amps:	110.0/83.0

OUTDOOR MOTOR

Number:	1
Horsepower:	0.75
Motor Speed (RPM):	1100
Phase:	1
Full Load Amps:	4.0
Locked Rotor Amps:	9.3

POWER EXHAUST ACCESSORY (3)

(Field Installed Power Exhaust)

Phase:	1
Horsepower:	0.87
Motor Speed (RPM):	1075
Full Load Amps:	5.7
Locked Rotor Amps:	13.6

FILTERS

Type:	Throwaway
Furnished:	Yes
Number	4
Recommended	20"x25"x2"

REFRIGERANT (2)

Type	R-410
Factory Charge	
Circuit #1	4.7 lb
Circuit #2	3.9 lb

NOTES:
1. Maximum (HACR) Circuit Breaker sizing is for installations in the United States only.
2. Refrigerant charge is an approximate value. For a more precise value, see unit nameplate and service instructions.
3. Value does not include Power Exhaust Accessory.
4. Value includes oversized motor.
5. Value does not include Power Exhaust Accessory.
6. EER is rated at AHRI conditions and in accordance with DOE test procedures.

Weight, Clearance & Rigging Diagram - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A1 Qty: 2 Tag(s): RTU-1B, RTU-2B

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PACKAGED GAS / ELECTRICAL

CORNER WEIGHT

INSTALLED ACCESSORIES NET WEIGHT DATA

ACCESSORY	WEIGHTS
ECONOMIZER	36.0 lb
MOTORIZED OUTSIDE AIR DAMPER	
MANUAL OUTSIDE AIR DAMPER	
BAROMETRIC RELIEF	
OVERSIZED MOTOR	
BELT DRIVE MOTOR	
POWER EXHAUST	80.0 lb
THROUGHT THE BASE ELECTRICAL/GAS (FIOPS)	18.0 lb
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)	5.0 lb
UNIT MOUNTED DISCONNECT (FIOPS)	
POWERED CONVENIENCE OUTLET (FIOPS)	
HINGED DOORS (FIOPS)	
HAIL GUARD	20.0 lb
SMOKE DETECTOR, SUPPLY / RETURN	
NOVAR CONTROL	
STAINLESS STEEL HEAT EXCHANGER	
REHEAT	
ROOF CURB	78.0 lb

BASIC UNIT WEIGHTS		CORNER WEIGHTS				CENTER OF GRAVITIY	
SHIPPING	NET	A	265.0 lb	C	173.0 lb	(E) LENGHT	(F) WIDTH
990.0 lb	847.0 lb	B	249.0 lb	D	160.0 lb	46"	21"

NOTE:
1. All weights are approximate.
2. Weights for options that are not list refer to Installation guide.
3. The actual weight are listed on the unit nameplate.
4. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
6. Verify weight, connection, and all dimension with installer documents before installation.
7. Corner weights are given for information only.
8. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.

PACKAGED GAS / ELECTRICAL

RIGGING AND CENTER OF GRAVITY

Weight, Clearance & Rigging Diagram - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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PACKAGED GAS / ELECTRIC

CLEARANCE

PACKAGED GAS / ELECTRIC

DOWNFLOW TYPICAL ROOF OPENING

Weight, Clearance & Rigging Diagram - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item: A2 Qty: 2 Tag(s): RTU-1A, RTU-2A

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PACKAGED GAS / ELECTRICAL

CORNER WEIGHT

INSTALLED ACCESSORIES NET WEIGHT DATA

ACCESSORY	WEIGHTS
ECONOMIZER	36.0 lb
MOTORIZED OUTSIDE AIR DAMPER	
MANUAL OUTSIDE AIR DAMPER	
BAROMETRIC RELIEF	
OVERSIZED MOTOR	
BELT DRIVE MOTOR	
POWER EXHAUST	80.0 lb
THROUGHT THE BASE ELECTRICAL/GAS (FIOPS)	18.0 lb
UNIT MOUNTED CIRCUIT BREAKER (FIOPS)	5.0 lb
UNIT MOUNTED DISCONNECT (FIOPS)	
POWERED CONVENIENCE OUTLET (FIOPS)	
HINGED DOORS (FIOPS)	
HAIL GUARD	20.0 lb
SMOKE DETECTOR, SUPPLY / RETURN	
NOVAR CONTROL	
STAINLESS STEEL HEAT EXCHANGER	
REHEAT	
ROOF CURB	78.0 lb

BASIC UNIT WEIGHTS		CORNER WEIGHTS				CENTER OF GRAVITIY	
SHIPPING	NET	A	279.0 lb	C	187.0 lb	(E) LENGHT	(F) WIDTH
1047.0 lb	904.0 lb	B	252.0 lb	D	186.0 lb	44"	22"

NOTE:
1. All weights are approximate.
2. Weights for options that are not list refer to Installation guide.
3. The actual weight are listed on the unit nameplate.
4. Refer to unit nameplate and installation guide for weights before scheduling transportation and installation of unit.
5. The weight shown represents the typical unit operating weight for the configuration selected. Estimated at +/- 10 % of the nameplate weight. .
6. Verify weight, connection, and all dimension with installer documents before installation.
7. Corner weights are given for information only.
8. Net/Shipping weight of optional accessories should be added to unit weight when ordering factory or field installed accessories.

PACKAGED GAS / ELECTRICAL

RIGGING AND CENTER OF GRAVITY

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

ROOF TOP CURB (BAYCURB043)

ACCESSORY

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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Downflow Duct Connections - Field Fabricated
All Flanges - 1 1/4"

ACCESSORY - DUCT CONNECTIONS

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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POWER EXHAUST AND HOOD

ACCESSORY

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

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ACCESSORY - ECONOMIZER HOOD

Accessory - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1 Qty: 2 Tag(s): RTU-1B, RTU-2B

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Field Wiring - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1, A2 Qty: 4 Tag(s): RTU-1B, RTU-2B, RTU-1A, RTU-2A

Inspections Division
Date: 11/20/17

ZONE SENSOR WIRE TABLE

WIRE SIZE	MAXIMUM WIRE LENGTH
22 GAUGE	1800"
20 GAUGE	3000"
18 GAUGE	4500"
16 GAUGE	7200"
14 GAUGE	11700"

NOTE:

1. All wiring and devices shown dashed to be supplied and installed by the customer in accordance with national and local electrical codes.
2. Low voltage control wiring must not be run in conduit with power wiring.

Field Wiring - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop
Item: A1 Qty: 2 Tag(s): RTU-1B, RTU-2B

Inspections Division
Date: 11/20/17

ZONE SENSOR WIRE TABLE

WIRE SIZE	MAXIMUM WIRE LENGTH
22 GAUGE	1800"
20 GAUGE	3000"
18 GAUGE	4500"
16 GAUGE	7200"
14 GAUGE	11700"

NOTE:

1. All wiring and devices shown dashed to be supplied and installed by the customer in accordance with national and local electrical codes.
2. Low voltage control wiring must not be run in conduit with power wiring.

Inspections Division
Date: 11/20/17

Tag Data - Split System Air Conditioning Units (Small) (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
B1	No Tag	1	3 Ton Condensing Unit	4TTA3036B3

Product Data - Split System Air Conditioning Units (Small)

Item: B1 Qty: 1

Split System Cooling Outdoor Unit
3 Ton Nominal Cooling Capacity
200 - 230 Volt 3 Phase 60 Hertz
Evaporator defrost control (Fld)
Crankcase heater kit (Fld)

Inspections Division
Date: 11/20/17

Mechanical Specifications - Split System Air Conditioning Units (Small)
Item: B1 Qty: 1

4TTA3 - General
This unit is fully charged from the factory for matched indoor section and up to 180" of piping. Unit is designed to operate at outdoor ambient temperatures as high as 115.0 F]. Cooling capacities matched with a wide selection of air handlers and furnace coils that are A.R.I certified. The unit shall be UL listed. Exterior must be designed for outdoor application.

4TTA3 - Casing
Unit casing is constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint. Corrosion and weatherproof CMBP-G30 Duratuff base.

4TTA3 - Compressor
The Climatuff compressor features internal over temperature and pressure protector, total dipped hermetic motor. Other features include: centrifugal oil pump, and low vibration and noise.

4TTA3 - Condenser Coil
The Spine Fin coil is continuously wrapped, corrosion resistant, all aluminum with minimum brazed joints. The coil is 3/8" O.D. seamless aluminum glued to a continuous aluminum fin. Coils are lab tested to withstand 2000.0 lb of pressure per square inch. The outdoor coil provides low airflow resistance and efficient heat transfer.

4TTA3 - Refrigerant controls
Refrigeration system controls include condenser fan and compressor contactor. High and low pressure protection is inherent to the compressor. Another standard feature is the factory installed liquid line drier.

Unit Dimensions - Split System Air Conditioning Units (Small)

Item: B1 Qty: 1

Inspections Division
Date: 11/20/17

UNIT DIMENSTIONS	
DIM - D	3/4"
DIM - E	5/16"

NOTES
1. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT, AND SHOULD BE AT LEAST 12" FROM WALL AND ALL SURROUNDING SHRUBBERY ON TWO SIDES. OTHER TWO SIDES UNRESTRICTED.
2. ELECTRICAL AND REFRIGERANT COMPONENT CLEARANCES PER PREVAILING CODES.

Unit Dimensions - Split System Air Conditioning Units (Small)

Item: B1 Qty: 1

Inspections Division
Date: 11/20/17

ELECTRICAL / GENERAL DATA

GENERAL	
Model:	4TTA3036*
Operating Voltage:	187-253
Unit Primary Voltage:	208
Unit Secondary Voltage	230
Unit Hertz:	60
Unit Phase:	3

POWER CONN.	
Minimum Circuit Ampacity:	14.0
Maximum Circuit Breaker:	20.0
Minimum Protection Rating:	20.0

COMPRESSOR	
Number:	1
Phase:	3
Rated Load Amps:	11.5
Locked Rotor Amps:	77.0

OUTDOOR MOTOR	
Number:	1
Horsepower:	0.125
Motor Speed (RPM):	825
Phase:	3
Full Load Amps:	0.7
Locked Rotor Amps:	-

REFRIGERANT	
Type:	R-410
Charge:	6.4 lb
Line Size O.D. Gas:	3/4"
Line Size O.D. LIQ:	3/8"

NOTES:
1. Certified in accordance with the Unitary Air-Conditioner equipment certification program which is based on AHRI Standard 210/240.
2. Calculated in accordance with N.E.C. Use only HACR circuit breakers or fuses.
3. Standard line lengths - 60'. Standard lift - 60' Suction and Liquid line.
   For Greater lengths and lifts refer to refrigerant piping software Pub# 32-3312-0
4. * = 15, 20, 25, 30, 40 and 50 foot lineset available.

WEIGHT	
NET	201.0 lb
SHIPPING	229.0 lb

NOTES:
C1. TOP DISCHARGE SHOULD BE UNRESTRICTED FOR AT LEAST 60" ABOVE UNIT
C2. PLACE UNIT FROM WALL
C3. PLACE SHRUBBERY AT LEAST 12" FROM UNIT ON TWO SIDES, OTHER SIDES UNRESTRICTED
C4. PLACE UNIT SO ROOF RUN-OFF DOES NOT FALL DIRECTLY ON UNIT

WEIGHT AND CLEARANCE

Inspections Division
Date: 11/20/17

Tag Data - Ductless Mini-Splits Systems (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
C1	DS-1 CU-1	1	Ductless Mini-Splits Systems	4TYK1624A10N0A-4MYW1624A10N0A

Product Data - Ductless Mini-Splits Systems

Item: C1 Qty: 1 Tag(s): DS-1 CU-1

-High Wall Outdoor Unit - (R-410A)-
Outdoor Unit
Cooing Only Inverter
Single Refrigerant Port
16 SEER
24000 Btu/h
208-230/60/1
- High Wall Indoor Unit - (R-410A) -
Indoor Unit
Cooling Only Inverter
High Wall Unit
16 SEER
24000 Btu/h
208-230/60/1
Wired Controller (Fld)

Inspections Division
Date: 11/20/17

Mechanical Specifications - Ductless Mini-Splits Systems
Item: C1 Qty: 1 Tag(s): DS-1 CU-1

16 SEER - Mini-Split Outdoor Unit

General
This unit is fully charged from the factory for up to 300" of piping. This unit is designed to operate at outdoor ambient temperatures as high as 115.0 F. Cooling capacities with the mini-split air handler shown in the catalog are AHRI certified. The unit is ETL listed for outdoor application.

Unit Casing
The unit casing is constructed of heavy gauge, galvanized steel and painted with a weather-resistant powder paint.

Refrigerant Controls
Refrigeration system controls include condenser fan and compressor relay. High and low pressure controls are inherent to the compressor. A suction line multi function service valve is standard

Compressor
The compressor features internal over temperature and pressure protection; total dipped hermetic motor windings. Other features include: centrifugal oil pump and low vibration and noise.

Condenser Coil
The coil shall consist of aluminum finned coils brazed to copper tubing. The coil provides air flow resistance and efficient heat transfer. The coil is protected by the casing.

Low Ambient Cooling
Matched American Standard ductless products, have cooling capabilities at outdoor ambient temperatures as low as 0.0 F

16 SEER - Mini-Split Indoor High Wall

General
The High Wall mounted type air handler shall be completely factory assembled including coil, condensate drain pan, fan motor, washable filter, air purifying filter and electric controls to be used with a wireless remote controller. Unit shall be shipped with a unit mounting plate. Unit shall be matched with an American Standard outdoor unit, rated and tested in accordance with AHRI standard. Unit shall be ETL listed.

Unit Casing
Casing shall be provided with knockouts on the right, and left of the unit to facilitate piping and electrical connection on either side of the unit. An electrical service cover shall be provided to permit easy access to the electrical terminal strip.

Discharge Airflow and Distribution System
Unit shall have auto swing, dual horizontal blades to optimize the aperture outlet for vertical airflow and air distribution. Blade shall close automatically when the air conditioner is turned off to minimize dust entering the unit. Five-Step preset program on the remote controller shall be available to control the blade angle. Manually adjusted wide-angle louvers shall be provided to adjust the coverage and direction of airflow.

Controls
Units shall have the capability to be controlled remotely through wall-mounted wired options as well as a wireless remote option.

Remote Controller
The unit shall have a wireless infrared remote controller with easy reading digital display panel to start, stop and regulate the air conditioner from a distance. The wireless controller is available for all units. (Sold separately)

Healthy Filters
The unit shall have an active carbon and catechin filter with the unit.The filters need to be cleaned at least once a year

Unit Dimensions - Ductless Mini-Splits Systems
Item: C1 Qty: 1 Tag(s): DS-1 CU-1

Inspections Division
Date: 11/20/17

4MYW 1618
INDOOR UNIT

4TYK 1618
OUTDOOR UNIT

NOTES:
1. VERIFY WEIGHT, CONNECTION, AND ALL DIMENSION WITH INSTALLER DOCUMENTS BEFORE INSTALLATION

Unit Dimensions - Ductless Mini-Splits Systems
Item: C1 Qty: 1 Tag(s): DS-1 CU-1

Inspections Division
Date: 11/20/17

Specifications — R-410A Mini Split System (R-SERIES)

MODEL - Cooling Only	4MYW1624A10N0 / 4TYK1624A10N0
RATED Volts/PH	208 / 230 / 1
Frequency (Hz)	60Hz
Rated Cooling Capacity (Btu/h):	22000
Minimum Cooling Capacity (@95F) (Btu/h):	8600
Maximum Cooling Capacity (@95F) (Btu/h):	23200
Total Capacity (W) (High/Standard/Low):	6600 / 6400 / 2500
Rated Power Input (W)	2260
Nominal Input Current (A)	10.0
SEER	16.0
Air Flow Volume (CFM) (H/M/L)	700 / 640 / 580 / 520
Dehumidifying Volume (pt./h)	5.3
EER (@95F)	9.75

Indoor Unit	4MYW1624A10N0
Fan Motor Speed (r/min) (SH/H/M/L)	1250 / 1100 / 900 / 800
Fan Motor RLA(A)	0.32
Evaporator	Aluminum Fin-Copper Tube
Pipe Diameter (inch)	2/7
Row Fin Gap (inch)	2 - 1/17
Coil length (L) x height (H) x coil width (W) (inch)	33 1/4 × 1 × 13 1/2
Output of Swing Motor (W)	2.5
Fuse (A)	3.15
Sound Power Level dB (A)(SH/H/M/L)	58 / 54 / 50 / 46
Sound PRESSURE Level dB (A)(SH/H/M/L) 1	48 / 44 / 40 / 36
Uncrated Dimension (W/D/H) (inch)	42 4/9 x 12 4/5 x 9 2/3
Crated Dimension of Package (W/D/H) (inch)	45 1/5 x 16 1/4 x 13 7/9
Net Weight /Gross Weight (lbs)	37.5 / 45.2

Outdoor Unit	4TYK1624A10N0
Compressor Type	Rotary RB68EP (POE Oil)
L.R.A. (A)	25
Compressor RLA(A)	7.2
Compressor Power Input(W)	1440
Throttling Method	Capillary
Working Temp Range (oF)	0 ~ 115
Condenser	Aluminum Fin-Copper Tube
Pipe Diameter (inch)	3/8
Row Fin Gap (inch)	2 - 1/18
Coil length (l) x height (H) x coil width (L) (inch)	33 1/3 × 1 3/4 × 26
Fan Motor Speed (rpm)	800
Output of Fan Motor (W)	60
Fan Motor RLA (A)	0.4
Air Flow Volume of Outdoor Unit (CFM)	1883
Fan Diameter (inch)	20 1/2
Defrosting Method	Automatic Defrosting
Sound Power Level dB (A)	69
Sound PRESSURE Level dB (A) 1	59
Uncrated Dimension (W/L/H) (inch)	37 3/5 x 27 5/9 x 15 3/5
Crated Dimension of Package (W/L/H) (inch)	40 1/2 x 18 x 29 1/2
Net Weight /Gross Weight (lbs)	103.6 / 113.6
Refrigerant Charge (oz)	56.45
MCA	15.0
MOP	25.0

Connection Pipe	
Gas additional charge(oz/ft)	0.2
Outer Diameter Liquid Pipe (inch)	1/4
Outer Diameter Gas Pipe (inch)	5/8
Max Height Distance (ft)	65
Max Length Distance (ft)	130

Notes:
1. Sound PRESSURE Level @ 3.3 ft. dB(A)
2. The purpose of this document is to provide electrical, dimensional and general product information. All documents are to be reviewed by the local sales office to assure all required components are accounted for and system performance meets the specific job requirements

Weight, Clearance & Rigging Diagram - Ductless Mini-Splits Systems

Item: C1 Qty: 1 Tag(s): DS-1 CU-1

Inspections Division
Date: 11/20/17

NOTES:
1. THE DIMENSIONS OF THE SPACE NECESSARY FOR CORRECT INSTALLATION OF THE APPLIANCE INCLUDING THE MINIMUM PERMISSIBLE DISTANCES TO ADJACENT STRUCTURES
2. THE MAXIMUM RECOMMENDED HEIGHT FROM THE FLOOR TO THE BOTTOM OF THE INDOOR UNIT IS 11.5 ft. (3.5 m).
3. AIR VELOCITY PATTERNS FOR HIGH WALL (4MYW1609) MAXIMUM HORIZONTAL DISTANCE IS 13.4 ft. (4 m).

CLEARANCE REQUIREMENT
INDOOR / OUTDOOR UNIT

Inspections Division
Date: 11/20/17

Tag Data - Architectural Electric Wall Heaters (Qty: 6)

Item	Tag(s)	Qty	Description	Model Number
D1	EWH-1, EWH-2, EWH-3, EWH-4, EWH-5, EWH-6	6	Architectural Wall Heaters	UHAA021ATA

Product Data - Architectural Electric Wall Heaters

Item: D1 Qty: 6 Tag(s): EWH-1, EWH-2, EWH-3, EWH-4, EWH-5, EWH-6

2.0 kW unit capacity
1 phase/60 cycle
208 element and motor voltage
Unit mounted tamperproof thermostat
Unit mounted tamper resistant manual disconnect switch
3320EX33 surface mounting adapter

Inspections Division
Date: 11/20/17

Mechanical Specifications - Architectural Electric Wall Heaters
Item: D1 Qty: 6 Tag(s): EWH-1, EWH-2, EWH-3, EWH-4, EWH-5, EWH-6

General
Heavy duty wall mounted forced air heater furnished to meet the specified wattage and voltage. Units are installed and wired in accordance with the manufacturer's recommendations and applicable national and local codes. Heaters are wall mounted in the vertical position. The enclosure is architectural styled, constructed of 18 gauge steel housing with a 14 gauge extruded aluminum frame. The rugged steel grille and heater box are painted with a rust resistant dark brown baked enamel color finish. Power wiring is connected through two 1/2" knockouts in the top of the heater and one 1/2" knockout on the bottom of the heater. Units are available in ratings from 1500 to 4800 watts at 240, 208 and 277 volts and 1500 watts at 120 volts.

Heaters have a low speed 600 rpm [10 rps], 4 pole motor which drives a vane axial blower to deliver a quiet 175.0 cfm of down flow air. Motors are permanently lubricated, unit bearing, totally enclosed, 4 pole with impedance protection. The motor operates at no more than 600 rpm [10 rps] and is the same voltage as the heater. Heaters have vane axial blower to draw in large volumes of air, then quietly and gently discharge 175.0 cfm of heated air downward into room. Element assemblies consist of two or three corrosion resistant steel sheathed elements mechanically bonded to common corrosion resistant steel fins. Each sheathed element consists of helical coiled nickel chromium alloy resistance wire completely embedded in and surrounded by magnesium oxide, enclosed and swaged into corrosion resistant steel sheaths.

Elements have 2" cold conductor pins extending into the sheath and have a density of no more than 60 watts/inch [2.4 watts/mm]. Heaters are equipped with an automatic reset thermal cutout which disconnects motor and element in the event normal operating temperatures are exceeded. Heater is warranted for one year and the heating element for five years. Heaters are Underwriter's Laboratories listed. Heaters conform to Underwriter's Laboratories Inc. standard 1025. Controls are factory installed and wired. As standard, a tamper resistant manual disconnect switch and tamper resistant thermostat which is calibrated to provide a range of 55.0 F to 85.0 F. A fan delay switch allows fan to continue to run for a short period after thermostat is satisfied to expel warm air from inside the heater. Switch also delays fan on start up to insure delivery of heated air. This switch also prolongs element life.

Surface Mounting Adapter
Surface mounting adapter is field installed.

Unit Dimensions - Architectural Electric Wall Heaters
Item: D1 Qty: 6 Tag(s): EWH-1, EWH-2, EWH-3, EWH-4, EWH-5, EWH-6

Inspections Division
Date: 11/20/17

TOP VIEW

ISO1 VIEW

NOTE:
1. ARROWS INDICATE THE DIRECTION OF AIRFLOW.

WEIGHT
22.0 lb

BOTTOM VIEW

RIGHT VIEW

Field Wiring - Architectural Electric Wall Heaters

Item: D1 Qty: 6 Tag(s): EWH-1, EWH-2, EWH-3, EWH-4, EWH-5, EWH-6

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⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE.

FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.

⚠ AVERTISSEMENT

TENSION DANGEREUSE!

COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS À DISTANCE, PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARAIBLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DÉCHARGER LES CONDENSATEURS.

NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.

⚠ ADVERTENCIA

¡VOLTAJE PELIGROSO!

DESCONECTE TODA LA ENERGÍA ELÉCTRICA, INCLUSO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGÚRESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON EJE DE DIRECCIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.

EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.

CAUTION

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

ATTENTION

N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!

LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.

L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'ÉQUIPEMENT.

PRECAUCIÓN

¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!

LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.

SI NO LO HACE, PUEDE OCASIONAR DAÑO AL EQUIPO.

NOTES:
1. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS.
2. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND / OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. SOLID LINES INDICATE WIRING BY TRANE COMPANY.

Inspections Division
Date: 11/20/17

Tag Data - Variable Air Volume Single Duct Terminal Units (Qty: 33)

Item	Tag(s)	Qty	Description	Model Number
E1	No Tag	17	VCWF06	VCWF06
E2	No Tag	1	VCWF08	VCWF08
E3	No Tag	1	VCWF10	VCWF10
E4	No Tag	13	VCCF06	VCCF06
E5	No Tag	1	VCCF08	VCCF08

Product Data - Variable Air Volume Single Duct Terminal Units

All Units

Foil faced insulation - 1" (25 mm)
Standard actuator
Left hand &/or same side connection (control &/or hot water coil)

Item: E1 Qty: 17

Single duct with hot water heat
6" inlet size, 500 cfm (152mm inlet, 236 l/s)
UC210 DDC-Basic (Water heat- Modulating)
Air - Fi Wireless Communication Module
DTS & HWV harness - factory mounted
1 Row -.020" thick hot water coil
Trane Air-Fi - WCS-SB (base) (Fld)

Item: E2 Qty: 1

Single duct with hot water heat
8" inlet size, 900 cfm (203mm inlet, 425 l/s)
DDC, controls proportional hot water valve
DTS & HWV harness - factory mounted
1 Row -.020" thick hot water coil
1 DDC sensor with occp and set pt (Fld)

Item: E3 Qty: 1

Single duct with hot water heat
10" inlet size, 1400 cfm (254mm inlet, 661 l/s)
DDC, controls proportional hot water valve
DTS & HWV harness - factory mounted
1 Row -.020" thick hot water coil
1 DDC sensor with occp and set pt (Fld)

Item: E4 Qty: 13

Single duct cooling only terminal
6" inlet size, 500 cfm (152mm inlet, 236 l/s)
DDC without remote heat - cooling only
Duct temperature sensor -factory mounted
1 DDC sensor with occp and set pt (Fld)

Item: E5 Qty: 1

Single duct cooling only terminal
8" inlet size, 900 cfm (203mm inlet, 425 l/s)
DDC without remote heat - cooling only
Duct temperature sensor -factory mounted
1 DDC sensor with occp and set pt (Fld)

Inspections Division
Date: 11/20/17

Mechanical Specifications - Variable Air Volume Single Duct Terminal Units
Item: E1 - E5 Qty: 33

General Unit Information
The unit casing is comprised of 22 gauge galvanized steel. Outlet connection is slip and drive.
Agency Listing - The unit is UL and Canadian UL listed as a room air terminal unit. UL Control # 9N65. All Trane terminal units are AHRI 880 - 98 certified.

General Unit Clearance
Allow adequate clearance to meet NEC on control box side of unit to meet NEC. A minimum of one and one half duct diameters of straight duct work, upstream of the air inlet connection, must be present for optimum airflow measurement performance. Upstream duct work should be the same diameter as the primary inlet connection. Allow access to the bottom of unit if Optional Bottom Access Door is selected.

1"Foil - Faced Insulation
The interior surface of the unit casing is acoustically and thermally lined with 1", 1.5 lb/cu. ft density glass fiber with foil facing. The insulation is UL listed and meets NFPA-90A, UL 181 standards, and bacteriological standard ASTM C 665. The insulation R-value is 4.1. All cut edges of insulation are completely encapsulated in metal to prevent erosion.

Air Valve Size - 06
Air Valve is 500.0 cfm 6"inlet.

Air Valve Size - 08
Air Valve is 900.0 cfm 8" inlet.

Air Valve Size - 10
Air Valve is 1400.0 cfm 10" inlet.

Air Valve Round
The air inlet connection is an 18 gauge galvanized steel cylinder sized to fit standard round duct. A multiple point, averaging flow sensing ring is provided with balancing taps for measuring within +/- 5% of unit cataloged airflow. An airflow versus pressure differential calibration chart is provided. The damper blade is constructed of a closed cell foam seal mechanically locked between two 22 gauge galvanized steel disks. The damper blade assembly is connected through a cast zinc stub axle and shaft supported by self lubricating bearings. The shaft is cast with a damper position indicator. The valve assembly includes a mechanical stop to prevent over stroking. At 4.0" w.g. air valve leakage does not exceed 1% of cataloged airflow.

1 Row Water Coil
Factory mounted on outlet. The coil has 144 fpf (fins per foot) [0.305 m.]. Full fin collars provided for accurate fin spacing and maximum fin-tube contact. The seamless copper tubes are mechanically expanded into the fin collars. Coils are proof tested at 450.00 psi and leak tested at 300.00 psi air pressure under water. Coil connections are sweat with left hand configuration. Right hand connections are optional. Coils are provided with an access for cleaning.

Slip & Drive Connection
A slip and drive connection has two straight flanges on the top and bottom, and two drive connections on the left and right sides. This is a standard option on all VAV single duct terminal units.

System Communications
The controller is designed to send and receive data from a Tracer Summit or other Trane Controllers, or a VariTrac Central Control Panel. Current unit status conditions and set points may be monitored and/or edited via this data communication feature. The network type is a twisted wire pair serial communication.

Direct Digital Controller
The microprocessor based terminal unit controller provides accurate, pressure independent control through the use of a proportional integral control algorithm and direct digital control technology. The controller monitors zone temperature set points, zone temperature and its rate of change, and valve airflow using a differential pressure signal. Optionally, the controller can monitor either supply duct air temperature or CO_2 concentration via appropriate sensors. The controller is provided in an enclosure with 7/8" knockouts for remote control wiring. A Trane zone sensor is required.

Override Commands
The following override commands may be received by the Unit Control Module (U.C.M.) from the Tracer System.

Inspections Division
Date: 11/20/17

Control Mode, Action, Offset & Commands

* Control Mode - Occupied or Unoccupied
* Control Action - Heating or Cooling
* Control Offset - Enabling Control Offset will increase the cooling temperature setpoint and decrease the heating temperature setpoint by a control offset value.
* Drive damper fully open.
* Drive damper fully closed.
* Drive damper to maximum airflow setpoint.
* Drive damper to minimum airflow setpoint.
* Disable unit heat.
* Reset - Enabling the reset function forces the controller and the flow sensor to recalibrate.

Editable Set points and Functions

Occupied and unoccupied cooling temperature set point 30.0 F-100.0 F.
Occupied and unoccupied heating temperature set point 30.0 F-100.0 F.
Maximum flow set point (10-100% of unit equivalent cataloged airflow)
Minimum heating and cooling flow set point (0, 10-100% of unit equivalent cataloged airflow)
Cooling set point low and high limit
Low 30.0 F-100.0 F.
High 30.0 F-102.0 F.

Heating set point high and low limit 30.0 F-100.0 F.
Hot water valve drive time
Air valve drive time

D.D.C. Floating Point Actuator

Trane 3 wire, (open, close, common) 26GA when 6-pos amp connector is used for Tracer UC210, VV550, or VAV UCM, otherwise 18GA wires are used. 3.4 VA, 1.7W, 24 VAC, 50/60 Hz. Quarter turn control actuator with linkage release button. Actuator has a constant drive rate independent of load, a rated torque of 35 in-lb, a 90-second drive time and is non-spring return. Travel is terminated by end stops at fully opened and closed positions. An integral magnetic clutch eliminates motor stall. An integral 3 screw terminal block is provided for field wiring. Operating temperature 32.0 F to 125.0 F.

Fan Control Offset - determines at what point a parallel fan is energized. This can be a function of temperature (degrees above heating set point) or primary airflow
Series Fan Configuration - allows series fan powered to shut off fan and close air valve when unit is unoccupied. Fan will operate in unoccupied mode if reheat is active.
Local heating flow set point enable/disable and set point
Analog input mode - auxiliary temperature sensor or CO2 detector
Binary input mode - generic or occupancy detector
Zone temperature, auxiliary temperature, and zone set point calibration corrections (± 10 ° F) [± -12°C]
Flow measurement calibration correction (60-150%)

Additional Status Information Available

Active cooling set point
Active heating set point
Current unit primary airflow
Current zone temperature
Reheat status (on/off)
Fan status (on/off)
Calibration status (calibrating/not calibrating)

DDC Sequence of Operation

The unit controller continuously monitors the zone temperature against its set point and varies the primary airflow as required to meet zone set points. Airflow is limited by minimum and maximum airflow set points.

Auxiliary air temperature (if unit has auxiliary temperature sensor) Not available if CO2 sensor used.
CO2 concentration (if unit has CO2 sensor) Not available if auxiliary temperature sensor used.
Ventilation ratio

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BIP state
Failure indicators
· Temperature sensor failures
· Flow Sensor failure
· Local zone sensor set point failure

DDC Controls Option DD03, DD13, DD43 & DD73
Basic Operation: Proportional Hot Water Valve Control (Normally Open Outputs) (DDC/UCM)
A voltage signal from the zone sensor indicates the zone temperature is used by the unit controller to determine an error from the set point. This error, as well as primary flow differential pressure, is used to determine damper position within minimum and maximum cooling airflow set points. As the zone temperature drops to the heating set point, primary airflow is controlled to minimum heating flow set point. A proportional hot water valve is energized and an additional heat output is available when heating is required.

DDC Controls Option DD01, DD11, DD41 & DD71
Basic Operation: Cooling Only Control (No Remote Heat) (DDC/UCM)
A voltage signal from the zone sensor indicates the zone temperature is used by the unit controller to determine an error from the set point. This error, as well as primary flow differential pressure, is used to determine damper position within minimum and maximum cooling airflow set points. As the zone temperature drops to the heating set point, primary airflow is controlled to minimum heating flow set point.

DDC Zone Sensor w/Setpoint & Occupancy
This electronic device utilizes a thermistor to vary the voltage output in response to changes in the zone temperature. Wiring to the U.C.M. controls must be 18 to 22 awg. shielded twisted pair wiring. The setpoint adjustment range is 50.0 F - 88.0 F. This sensor is provided with an externally adjustable set point, a timed override button and a timed override cancel button. An optional communications jack is available which snaps into the enclosure backplate.

Factory Mounted DTS Extension
Factory Mounted on the discharge outlet of the Single Duct Terminal. The Factory Mounted Duct Temperature Sensor (DTS) Extension is a 4" sheet metal extension that the DTS is mounted into.
This extension measures the same discharge dimension as the unit it is attached to.
The DTS is a 4" 10k ohm thermistor and is factory mounted into the discharge extension and is factory wired back to the Trane controls.
The metal extension is not insulated and the field connection is slip and drive.

Unit Dimensions - Variable Air Volume Single Duct Terminal Units

Item: E1 Qty: 17

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TOP VIEW

Customer Notes

1. Air Inlet is centered in unit front panel.
2. Minimum of 1.5 duct diameters of straight duct required at inlet for proper flow reading.
3. Allow 36" on control side for servicing.
4. Unit is field-convertible from a left-hand connection (shown) to right-hand by rotating unit. 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 always on the air flow downstream side of the hot water coil. Water outlet always on the upstream side of the hot water coil. Opposite side (coil and control) connections are available for VCWF only.
5. Coil furnished with stub sweat connections.
6. Coils are provided without internal insulation. If the unit is to be installed in a location with high humidity, external insulation around the heating coil should be installed as required.
7. Unit and hot water coil are standard slip & drive connection.
8. Detailed dimensions for the water coils can be found on the Accessory drawing.

BACK VIEW

Approximate Dry Weight	21.0 lb

Weights reflected may vary ±5.0 lb based upon options selected.

Unit Dimensions - Variable Air Volume Single Duct Terminal Units

Item: E2 Qty: 1

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TOP VIEW

BACK VIEW

Customer Notes

1. Air Inlet is centered in unit front panel.
2. Minimum of 1.5 duct diameters of straight duct required at inlet for proper flow reading.
3. Allow 36" on control side for servicing.
4. Unit is field-convertible from a left-hand connection (shown) to right-hand by rotating unit. 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 always on the air flow downstream side of the hot water coil. Water outlet always on the upstream side of the hot water coil. Opposite side (coil and control) connections are available for VCWF only.
5. Coil furnished with stub sweat connections.
6. Coils are provided without internal insulation. If the unit is to be installed in a location with high humidity, external insulation around the heating coil should be installed as required.
7. Unit and hot water coil are standard slip & drive connection.
8. Detailed dimensions for the water coils can be found on the Accessory drawing.

Approximate Dry Weight	21.0 lb

Weights reflected may vary ±5.0 lb based upon options selected.

Unit Dimensions - Variable Air Volume Single Duct Terminal Units

Item: E3 Qty: 1

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TOP VIEW

Customer Notes

1. Air Inlet is centered in unit front panel.
2. Minimum of 1.5 duct diameters of straight duct required at inlet for proper flow reading.
3. Allow 36" on control side for servicing.
4. Unit is field-convertible from a left-hand connection (shown) to right-hand by rotating unit. 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 always on the air flow downstream side of the hot water coil. Water outlet always on the upstream side of the hot water coil. Opposite side (coil and control) connections are available for VCWF only.
5. Coil furnished with stub sweat connections.
6. Coils are provided without internal insulation. If the unit is to be installed in a location with high humidity, external insulation around the heating coil should be installed as required.
7. Unit and hot water coil are standard slip & drive connection.
8. Detailed dimensions for the water coils can be found on the Accessory drawing.

BACK VIEW

Approximate Dry Weight	29.0 lb

Weights reflected may vary ±5.0 lb based upon options selected.

Unit Dimensions - Variable Air Volume Single Duct Terminal Units
Item: E4 Qty: 13

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TOP VIEW

Customer Notes

1. Air Inlet is centered in unit front panel.
2. Slip & Drive discharge outlet standard.
3. Minimum of 1.5 duct diameters of straight duct required at inlet for proper flow reading.
4. Allow 36" on control side for servicing.
5. Unit is field-convertible from a left-hand connection (shown) to a right-hand by rotating unit.

BACK VIEW

Approximate Dry Weight	16.0 lb

Weights reflected may vary ±5.0 lb based upon options selected.

Unit Dimensions - Variable Air Volume Single Duct Terminal Units

Item: E5 Qty: 1

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TOP VIEW

BACK VIEW

Customer Notes

1. Air Inlet is centered in unit front panel.
2. Slip & Drive discharge outlet standard.
3. Minimum of 1.5 duct diameters of straight duct required at inlet for proper flow reading.
4. Allow 36" on control side for servicing.
5. Unit is field-convertible from a left-hand connection (shown) to a right-hand by rotating unit.

Approximate Dry Weight	16.0 lb

Weights reflected may vary ±5.0 lb based upon options selected.

Accessory - Variable Air Volume Single Duct Terminal Units
Item: E1 - E3 Qty: 19

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COIL INFORMATION FOR 1 ROW COIL ASSY												
VALV	CFM	LITERS per SECOND	COIL CONNECTION		A	B	C	D	E	F	W
04	225	106	3/8" [10mm] O.D.	SEE (FIG 1)	7" [178mm]	21/32" [17mm]	10" [254mm]	8 1/8" [206mm]	1/2" [13mm]	2" [50mm]	8 1/4" [210mm]
05	350	165	3/8" [10mm] O.D.		7" [178mm]	21/32" [17mm]	10" [254mm]	8 1/8" [206mm]	1/2" [13mm]	2" [50mm]	8 1/4" [210mm]
06	500	236	3/8" [10mm] O.D.		7" [178mm]	21/32" [17mm]	10" [254mm]	8 1/8" [206mm]	1/2" [13mm]	2" [50mm]	8 1/4" [210mm]
08	900	425	3/8" [10mm] O.D.		9" [229mm]	7/8" [22mm]	11" [279mm]	10 1/8" [257mm]	7/16" [11mm]	2" [50mm]	8 1/4" [210mm]
10	1400	661	3/8" [10mm] O.D.		11" [279mm]	7/8" [22mm]	14" [356mm]	12 1/8" [308mm]	7/16" [11mm]	2" [50mm]	8 1/4" [210mm]
12	2000	994	7/8" [22mm] O.D.	SEE (FIG 2)	9 3/4" [248mm]	2 1/2" [64mm]	17" [432mm]	14 1/8" [359mm]	2 1/16" [53mm]	3 3/8" [86mm]	8 1/4" [210mm]
14	3000	1416	7/8" [22mm] O.D.		15 3/4" [400mm]	1 1/2" [38mm]	19" [483mm]	18 1/8" [460mm]	1 1/16" [27mm]	3 3/8" [86mm]	8 1/4" [210mm]
16	4000	1888	7/8" [22mm] O.D.		15 3/4" [400mm]	1 1/2" [38mm]	23" [584mm]	18 1/8" [460mm]	1 1/16" [27mm]	3 3/8" [86mm]	8 1/4" [210mm]
16 x 24	8000	3776	7/8" [22mm] O.D.		15 3/4" [400mm]	1 1/2" [38mm]	27" [686mm]	18 1/8" [460mm]	1 1/16" [27mm]	3 3/8" [86mm]	8 1/4" [210mm]

(FIG 1)

(FIG 2)

CUSTOMER NOTES:

1. Location of coil connections is determined by facing air stream. L.H. Coil connections shown, R.H. opposite.
2. Coil furnished with stub sweat connections.
3. Use port at bottom for inlet and port at top for outlet on single row coils. Coil is rotated to achieve opposite hand connection.
4. Coil height and width is dependent upon unit height and width.
5. Access Panel is standard.

Accessory - Variable Air Volume Single Duct Terminal Units
Item: E1 Qty: 17

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Air-Fi™ WIRELESS COMMUNICATIONS INTERFACE (Air-Fi™WCI)

(INSTALLED, WIRED & TESTED ON UNIT)

Wireless specifications

Air-Fi™ WCI works with other Air-Fi™ WCI's for wireless communications and optionally with wireless communications sensor.
(Does not work with non- Air-Fi™ Wireless Zone Sensors)

WCI operating temperature	-40 to 158ºF (-40 to 70ºC)
Storage temperature	-40 to 185ºF (-40 to 85°C)
Storage and operating humidity range	5 % to 95 % relative humidity (RH), non-condensing
Resolution	±0.125ºF over a range of 60 to 80ºF (15.56 to 26.67°C) ±0.25 ºF when outside this range
Receiver voltage	24 V nominal ac/dc ± 10%
Receiver power consumption	<2.5VA
Housing Material	Polycarbonate/ABS blend, suitable for plenum mounting, UV protected, UL 94: 5 VA flammability rating
Mounting	Factory mounted on exterior of control box.
Range(i)	Open range - 2,500 ft (762m) w/ packet error rate of 2 % Indoor: Typical range is 200ft (61mm); actual range is dependent on the environment.
Output power	100 mW - North America
Radio frequency	2.4 GHz (IEEE Std 802.15.4-2003 compliant) (2405-2480 MHz, 5 MHz spacing)
Radio channels	16
Address range	00-99
RoHS compliance	Yes
Agency Listing	UL Listed: UL94, 5VA flammability rating and UL916. CSA - C22.2 No. 205-M1983 Signal Equipment

(i) Range values are estimated transmission distances for satisfactory operation of the 100 mW version. Estimated transmission distance for the 10 mW version will be less. Actual distance is job specific and must be determined during site evaluation.

Placement of the receiver and the sensor is critical to proper system operation. In most general office space installations, distance is not the limiting factor for proper radio signal quality. It is more greatly affected by walls, barriers, and general clutter. In general, sheetrock walls and ceiling tiles offer little restriction to the propagation of the radio signal throughout the building as opposed to concrete or metal barriers.

Accessory - Variable Air Volume Single Duct Terminal Units
Item: E1 Qty: 17

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Air-Fi™ WIRELESS COMMUNICATIONS SENSOR (WCS-SB)

Wireless specifications

Sensor works with Air-Fi™ Wireless Communications Interface.

Sensor operating temperature	32 to 122ºF (0 to 50ºC)
Storage temperature	-40 to 185ºF (-40 to 85°C)
Storage and operating humidity range	5% to 95%, non-condensing
Accuracy	0.5 °F over a range of 55 to 85°F (12.8 to 29.4 °C)
Resolution	±0.125ºF over a range of 60 to 80ºF (15.56 to 26.67°C) ±0.25 ºF when outside this range
Housing	Polycarbonate/ABS blend, suitable for plenum mounting, UV protected, UL 94: 5 VA flammability rating
Mounting	3.375 in (82.73 mm) for 2 mounting screws (supplied)
Sensor battery	(2) AA, 1.5 V, 2800 mAh, Lithium, 15-year life
Range(i)	Open range - 2,500 ft (packet error rate = 2 Usable - 200 ft (61 m) Typical - 75 ft (25 m)
Output power	100 mW - North America
Radio frequency	2.4 GHz (IEEE Std 802.15.4-2003 compliant) (2405-2480 MHz, 5 MHz spacing)
Radio channels	16
Address range	000-999
Minimum time between transmissions	30 seconds
Maximum time between transmissions	15 minutes
RoHS compliance	Yes
Agency Listing	UL916 Energy Management Equipment CSA - C22.2 No. 205-M1983 Signal Equipment

(i) Range values are estimated transmission distances for satisfactory operation of the 100 mW version. Estimated transmission distance for the 10 mW version will be less. Actual distance is job specific and must be determined during site evaluation.

Placement of the receiver and the sensor is critical to proper system operation. In most general office space installations, distance is not the limiting factor for proper radio signal quality. It is more greatly affected by walls, barriers, and general clutter. In general, sheetrock walls and ceiling tiles offer little restriction to the propagation of the radio signal throughout the building as opposed to concrete or metal barriers.

Accessory - Variable Air Volume Single Duct Terminal Units
Item: E2 - E5 Qty: 16

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Customer Notes:

1. Zone Sensor with externally adjustable setpoint, a timed override button & a timed override cancel button.
2. Optional communications jack available.

Field Wiring - Variable Air Volume Single Duct Terminal Units
Item: E1 Qty: 17

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NOTE:

1. FACTORY WIRING
   FIELD WIRING
   OPTIONAL OR ALTERNATE WIRING
2. BARE WIRE ENDS OR 1/4" QUICK CONNECT TERMINALS REQUIRED FOR ALL FIELD CONNECTIONS.
3. ZONE SENSOR TERMINALS 1 (-) AND 2 (+) REQUIRE SHIELDED TWISTED PAIR WIRING FOR COMMUNICATIONS JACK EQUIPPED ZONE SENSOR OPTION.
4. NO ADDITIONAL WIRING REQUIRED FOR NIGHT SETBACK OVERRIDE (ON/CANCEL).
5. IF UNIT MOUNTED TRANFORMER IS NOT PROVIDED, POLARITY FROM UNIT TO UNIT MUST BE MAINTAINED TO PREVENT PERMANENT DAMAGE TO CONTROL BOARD. IF ONE LEG OF 24VAC SUPPLY IS GROUNDED, THEN GROUND LEG MUST BE CONNECTED TO J15.
6. CONTACTORS ARE 24 VAC: 12VA MAX/COIL (MERCURY CONTACTORS). 10VA MAX/COIL (MAGNETIC CONTACTORS)
7. OPTIONAL FUSE, DISCONNECT SWITCH & TRANSFORMER LOCATED IN CONTROL BOX FOR COOLING & HOT WATER UNITS. LOCATED IN HEATER ON ELECTRIC HEAT UNITS. TRANSFORMER WIRE COLORS: 120V - W, 208V - R, 240V - O, 277V - BR, 480V - R/BK, 575V - R, 190V - R, 220V - R, 347V - R
8. SCREW TERMINAL ADAPTERS REQUIRED FOR BI1, UI1, UI2, IMC & LINK.
9. TO USE AI3 WITH A SUPPLY AIR SENSOR FOR AUTO-CHANGEOVER, REASSIGNMENT OF AI3 TO SAT WITH TU IS REQUIRED.
10. ZONE SENSOR TERMINALS 6 AND 7 REQUIRE SHIELDED TWISTED PAIR WIRING FOR OPTIONAL USE OF COMMUNICATIONS JACK.
11. 24Vdc REQUIRED FOR TRANE SCR ELECTRIC HEAT MODULE.

Field Wiring - Variable Air Volume Single Duct Terminal Units
Item: E2, E3 Qty: 2

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NOTE:

1. ———— FACTORY WIRING
   - - - - - - FIELD WIRING
   ———— OPTIONAL OR ALTERNATE WIRING

2. ZONE SENSOR TERMINALS 1 (-) AND 2 (+) REQUIRE SHIELDED TWISTED PAIR WIRING FOR COMMUNICATIONS JACK EQUIPPED ZONE SENSOR OPTION.

3. NO ADDITIONAL WIRING REQUIRED FOR NIGHT SETBACK OVERRIDE (ON/CANCEL).

4. ZONE SENSOR TERMINALS 6 AND 7 REQUIRE SHIELDED TWISTED PAIR WIRING FOR OPTIONAL USE OF COMMUNICATIONS JACK.

Field Wiring - Variable Air Volume Single Duct Terminal Units
Item: E4, E5 Qty: 14

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⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

⚠ CAUTION

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

NOTE:

1. ——— FACTORY WIRING
   ——— FIELD WIRING
   ——— OPTIONAL OR ALTERNATE WIRING

2. ZONE SENSOR TERMINALS 1 (-) AND 2 (+) REQUIRE SHIELDED TWISTED PAIR WIRING FOR COMMUNICATIONS JACK EQUIPPED ZONE SENSOR OPTION.

3. NO ADDITIONAL WIRING REQUIRED FOR NIGHT SETBACK OVERRIDE (ON/CANCEL).

4. ZONE SENSOR TERMINALS 6 AND 7 REQUIRE SHIELDED TWISTED PAIR WIRING FOR OPTIONAL USE OF COMMUNICATIONS JACK.

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Tag Data - Light Commercial Unitary System Panels (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
F1	No Tag	1	Tracker Panels	BMTK000ABB0110

Product Data - Light Commercial Unitary System Panels

Item: F1 Qty: 1

Standard Ship Cycle = Production Shipping Cycle
BMTK Tracker Bldg Mgmt Panel (Digit 1-4)
Power Requirements (Digits 5-8)
Ethernet and Modem
Design Sequence (Digits 10-11)
Model 12
Operator Display
English

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Mechanical Specifications - Light Commercial Unitary System Panels
Item: F1 Qty: 1

Tracker12, Tracker 24 Mechanical Specs

Simple Building Control
The Tracker Version 12 building automation system (BAS) is a heating, ventilating, and air conditioning (HVAC) energy management system for small- to medium-size buildings. It provides reliable, centralized control for HVAC equipment, managing it for optimal comfort and efficiency.
The Tracker BAS includes a controller with a liquid crystal display (LCD) touch screen. The Tracker BAS also includes optional Windows-based software that can be installed on a PC workstation.
The Tracker BAS is LonMark® compliant. It communicates with supported devices over a Trane Comm5 link. The Trane Comm5 link is a communication link that implements LonTalk and a LonTalk FTT-10A network. LonTalk is an open, industry-standard protocol.

Remote Communications
Modem - Both the controller and the PC (in its recommended hardware configuration) provide a modem. The modem enables off-site connections over standard phone lines. It enables remote operation of the Tracker BAS and provides the means to deliver alarms and messages to the workstation PC, email address, and pagers.

Ethernet LAN - Both the controller and typical PC are available with an Ethernet card option. This option allows the Tracker panel and PC workstation running Tracker PC Software to reside on an existing LAN (supplied by others). The panel and software allow for a static or DHCP IP address.

Both the touch screen and the PC provide an easy-to-use visual interface. The interfaces enable an operator to set up and change HVAC operating parameters and collect and display building information.

The Tracker BAS is a reliable and easy-to-install, operate, and service
building management system. It simplifies the work of the building operator and the installing contractor

System components
Currently, all equipment that makes up a comprehensive Tracker system is available from Trane. In addition to a Tracker BAS, a Tracker system can include the following Trane HVAC components:
· Trane Voyager constant-volume rooftop units (RTUs)
· Trane Precedent constant-volume RTUs with ReliaTel controls
· Trane VariTrac central control panels (CCPs)
· Trane Voyager III variable air volume (VAV) RTU (with CCP)
· Trane Tracer ZN517 unitary controllers - used to control and incorporate non-Trane equipment into the system
· Trane Tracer MP503 I/O modules
.
The Tracer MP503 I/O modules in a Tracker system are used to monitor and
control building equipment such as lights, exhaust fans, ventilation fans, and humidity control equipment
The components of the Tracker network are connected in a daisy chain or star configuration.

Features
Both the controller and the PC software of the Tracker BAS offer these features:
· Intuitive LCD touch screen user interface
· 365-day scheduling and 10 schedules
· Capability of including all equipment and devices in one schedule
· Temporary schedule override
· Easy-to-administer security system with two levels of access
· Automatic daylight savings time changeover
· Error and alarm messaging
· Setpoint viewing and editing
· Auto configuration
. Alarm log
. Global PC workstation software Alarm log - accepting remote alarms from capable panels.
. Trending of any point available in the system, 10 trends with up to 64 samples each
. Optimal start to insure space is to desired temperature at occupied time

. Reports are available to review and print. Standard reports include timed-override usage and energy reports Timed override will calculate the actual minutes per month of timed-override use; energy report which will indicate today's,

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yesterdays, this month, last month, this years, and last years energy usage

Features exclusive to the controller
· Auto-configuration
· Pager notification for error and alarm messages
· LCD touch screen

Features exclusive to the PC software
· Dial-in connection
· Backup and restore capability
· Standard graphics and HTML graphical interface
· Binary output programming capability
· Operator-defined custom alarms capability
· Printer support
. Setting up and viewing trends and reports
Note: The Tracker PC software is not needed to set up and operate a typical building.

The Tracker is available in several models. Each model is distinguished by it's approvals and by the number and type of devices that it can communicate with and control.

Auto-configuration
Auto-configuration
When Trane Comm5 devices are used as a system and power is applied to the controller, the Tracker BAS automatically configures itself. It is no longer necessary to program the building management system. During auto configuration, the controller:
· Discovers all devices on the communication link
· Loads all devices into a non-erasable memory database
· Turns to On or Occupied all discovered HVAC equipment except the binary output relays of the Tracer MP503 I/O module, which remain de-energized (Off)
After auto configuration, the building is under the control of the Tracker controller and its factory defaults. At this point, the controller can run the building with no further involvement of personnel. The installer or operator can choose, now or later, to replace the device IDs (Neuron IDs set at the factory) with descriptive names and provide a building schedule.

Models/Capacities

Tracker 12:
12 SCC (Space Comfort Controllers as defined by LonMark) + 5 CCP (VariTrac Central Control Panels) + 4 MP503 (Input/Output Modules).

Tracker 24:
24 SCC (Space Comfort Controllers as defined by LonMark) + 10 CCP (VariTrac Central Control Panels) + 4 MP503 (Input/Output Modules).

Tracer ZN517 unitary controller
The Tracer ZN517 unitary controller is a standalone HVAC controller. When connected to a Tracker controller, the Tracer ZN517 unitary controller becomes a communicating LonMark®-compliant device with an SCC profile. The Tracker controller, through the Tracer ZN517, can then communicate with and control the equipment.

Devices controlled by the Tracer ZN517 unitary controller include electro-mechanically controlled 2H/2C or 4C rooftop units, heat pumps, and split systems. The Tracer ZN517 controls temperature and other comfort-related conditions. Connecting a Tracker controller to it enables an operator to schedule, route alarms, and monitor the entire system.

Tracer ZN517 unitary controller I/O capacities

Binary inputs
- Enable/Disable or Occupancy
- Status: Fan or Generic

Analog Inputs
· Space Temperature
· Setpoint input
· Discharge air temperature

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· Universal input (thermistor, 4-20mA)
· Outdoor air temperature

Binary outputs
· Supply fan
· Cool 1/Compressor 1
· Cool 2/Compressor 2
· Heat 1/Reversing Valve/Cool3
· Heat 2/Auxiliary Heat/Cool 4
· Exhaust Fan/Generic/Occupancy
· Economizer Open/Close

Tracer ZN517 Features
· Minimum on/off timer: to protect equipment from duty cycling
· Fan status: to protect equipment from overheating
· Economizing
· Timed override
· Manual output test button
· Filter maintenance alarm: when used with a Tracker
· Discharge air tempering
· Demand control ventilation using CO2

Note: Each output is rated for a maximum of 1 Amp at 24 Vac. One normally open (Form A) relay contact will be provided. 24 Vac will be wired in common to one side of all relay contacts.

Tracer MP503 I/O module
The Tracer MP503 input/output module accepts electrical signals from a variety of sensors. It also controls the state of binary outputs by energizing and de-energizing relays. Changing the state of a relay enables the I/O module to turn a device on or off.

Using the Tracker PC software, the binary outputs can be programmed to energize and de-energize the relays in response to system conditions and schedules.
The module has universal inputs that can receive and interpret binary (on/off), and analog (range) values. Connecting to the module enables the Tracker controller to monitor Trane temperature, relative humidity (RH), and CO2 sensors.

Tracer MP503 I/O module I/O capacities

Universal inputs (4)
- Thermistor (10K W at 77°F [25°C])
- Trane CO2 sensor (0 to 10 Vdc)
- Trane relative humidity (RH) sensor (4 to 20 mA)
- Binary input

Binary outputs (4)
· Each output is rated for a maximum of 1 Amp at 24 Vac. One normally open (Form A) relay contact will be provided. 24 Vac will be wired in common to one side of all relay contacts

ZN524 input/output capabilities

Analog inputs
- Zone temperature
- Entering or leaving water temperature
- Discharge air temperature
- Zone temperature setpoint
- Fan mode switch
- Outside air temperature
- Relative Humidity

Binary inputs
- Occupancy
- Condensate overflow
- Fan status
- Low water temperature

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- Low pressure protection
- High pressure protection

Binary outputs
- Compressor 1
- Compressor 2
- Isolation valve 1 and 2
- Outside air damper (2-position)
- Reversing valve
- Fan on/off
- Electric Heat
- Reheat

Communication
The Tracker (BMTK) controller is a Comm5 device. Comm5 is the fifth generation Trane communication architecture. It implements LonTalk, an open, industry-standard protocol.
The RTUs, CCPs, unitary controllers, and I/O controllers that the Tracker controller communicates with reside on a LonTalk FTT-10A network. They provide data using LonMark® standard network variable types (SNVTs, pronounced Sniv-its) and configuration properties.
The HVAC equipment controllers employ SCC profiles, as defined by LonMark® Interoperability Association. Ancillary sensors (such as temperature and humidity sensors) that are hard-wired to the terminals on the Tracker, CCP, and I/O module are standard resistive type sensors and do not communicate using LonTalk. They only provide analog or binary inputs and outputs.

LonTalk devices from other manufacturers will be tested for compatibility
with the Tracker BAS. Devices that are compatible will be approved for inclusion in the Tracker system.

Necessary support documentation for approved devices will be released, when completed.
The Tracker controller is designed for easy installation. Its 3-module assembly enables the termination module to be mounted on a wall, and the main module and display module to be stored for their protection until the site is ready for the controller to be fully assembled.

3-module definition
The termination module contains the termination board, which accepts all electrical connections for the controller.
The main module contains the main logic board.
The display module contains the touch screen, which enables the operator to interact with the controller.

Connect the PC workstation
If the site requires the optional PC software, the installer connects the RJ-11 (modem connection) or RJ-12 (direct connection) cable to the appropriate connector on the underside of the controller.
Install the optional PC software
To install the optional PC software, the installer inserts the Tracker CD into the PC CD-ROM drive and follows the self-prompting installation wizard.

An operator can set up and change HVAC operating parameters and collect and display building information at either the Tracker controller or the PC workstation. Each location provides access to an easy-to-use user interface.
Tracker controller operation

LCD touch screen
The LCD touch screen, combined with an intuitive menu-driven user interface, provides access to the Tracker system from the controller.

The Tracker BAS goes well beyond accurate temperature control. It provides centralized scheduling and control for multiple RTUs and split systems. It provides multiple-zone control when paired with a VariTrac system. And it provides control for multiple VariTrac systems.

The Tracker BAS is capable of controlling multiple constant-volume Trane rooftop and split single-zone systems. The Trane unitary controller enables non-Trane HVAC systems to be easily integrated into the Tracker system.

The Tracker BAS communicates with the unit controllers on the Comm5
network and controls them to temperature setpoints and operating parameters determined by the operator. Once communicating, the Tracker BAS receives alarms automatically.

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Connecting multiple unit controllers to the Tracker BAS enables the installer and operator to:
· Save installation time and materials costs by reducing the amount of wire used and by requiring only a thermis each area rather than a programmable zone sensor
· Schedule all devices from one location, rather than requiring that each device be scheduled independently
· Monitor alarms from one location

Rooftop VAV and Changeover bypass operation
The Tracker BAS is capable of supervising and scheduling a VariTrac VAV system. To do this, Trane VariTrac changeover bypass zoning systems or VariTrac VAV Rooftop system are introduced into the Tracker system.
A Tracker controller is connected to one or more
VariTrac CCPs. Each CCP is connected to one Trane Voyager RTU.
The Tracker controller provides centralized scheduling and access to CCP alarms. Each CCP monitors its zone sensors and allows each zone to "vote" its needs, which are determined
by the schedule and its setpoints. Based on that data, the CCP sets the operating mode (heat or cool) of the HVAC equipment.
In addition, the CCP maintains a operator-defined static pressure in the ductwork by controlling a bypass damper or VAV (variable air volume) in the HVAC unit. If controlling a VAV HVAC unit the CCP will control either VFD (variable frequency drive) fans or inlet guide vanes.

Power requirements
24 Vac nominal (19-30 Vac)
50/60 Hz, 1 phase 40 VA minimum, Class 2 transformer required

Operating environment
Temperature: 32°F to 120°F (0-49°C)
Humidity: 10% to 90% relative humidity, non-condensing

Storage environment
Temperature: -40°F to 200°F (-40°C to 93°C)
Humidity: 5% to 95% relative humidity, non-condensing

Cabinet
NEMA 1 resin enclosure
Plenum rated
Mounting
Flat wall surface or with a conduit box that is either: Recessed, 2 in. × 4 in. (5 cm × 10 cm)
Recessed, 4 in. × 4 in. (10 cm × 10 cm)
Dimensions
Height: 8-3/4.in. (22.38 cm)
Width: 10-1/4 in. (26.04 cm)
Depth: 2-3/4 in. (6.99 cm)
Minimum clearances
Top: 12 in.
Bottom: 12 in.
Left: 12 in.
Right: 12 in.
Front: 36 in.
Weight
2.5 lb. (1.13 kg)

Analog input - Outside air temp.
Thermistor: 10K ohm at 77°F (25°C)
From -50°F to 200°F (-46°C to 93°C)

Binary inputs
Utility pulse meter: User-supplied dry contacts only
Tracker-supplied voltage: 12 Vdc nominal (10-14 Vdc), 12 mA nominal (10-14 mA)
Priority shutdown: User-supplied dry contacts only
Tracker-supplied voltage: 12 Vdc nominal (10-14 Vdc), 12 mA nominal (10-14 mA)

Binary output
Alarm relay: Tracker-supplied relay, Single-pole single-throw (SPST) dry contact rated at 24 Vac, 1 A maximum

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Memory backup

At power loss, the Tracker controller backs up memory and stores all data for seven days; after seven days, tren alarms are not retained

Approvals

U.L.:Models 12, 24
FCC:Models 12, 24
C.E.:Model 12, 24

Notes:

Note 1:All customer wiring must be in accordance with national, state, and local electrical codes.
Note 2:Trane recommends a dedicated transformer for 24 Vac power.
Note 3:Alarm relay circuit must not exceed 24 Vac, 1 A.
Note 4:Do not apply voltage to the priority shutdown or meter inputs.
Note 5:See product literature for Comm5 wire connection details.

Unit Dimensions - Light Commercial Unitary System Panels
Item: F1 Qty: 1

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Unit Dimensions - Light Commercial Unitary System Panels
Item: F1 Qty: 1

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FRONT VIEW

SIDE VIEW

FRONT VIEW MOUNTING

Field Wiring - Light Commercial Unitary System Panels

Item: F1 Qty: 1

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⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

⚠ AVERTISSEMENT

VOLTAGE HASARDEUX!

DECONNECTEZ TOUTES LES SOURCES ELECTRIQUES INCLUANT LES DISJONCTEURS SITUES A DISTANCE AVANT D'EFFECTUER L'ENTRETIEN.

FAUTE DE DECONNECTER LA SOURCE ELECTRIQUE AVANT D'EFFECTUER L'ENTRETIEN PEUT ENTRAINER DES BLESSURES CORPORELLES SEVERES OU LA MORT.

⚠ CAUTION

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

Note 1: All customer wiring must be in accordance with national, state, and local electrical codes.
Note 2: Trane recommends a dedicated transformer for 24 Vac power.
Note 3: Alarm relay circuit must not exceed 24 Vac, 1A.
Note 4: Do not apply voltage to the priority shutdown or meter inputs.
Note 5: See product literature for Comm5 wire connection details.

Inspections Division
Date: 11/20/17

Tag Data - Variable Air Volume Changeover/Bypass Units (Qty: 2)

Item	Tag(s)	Qty	Description	Model Number
G1	No Tag	2	VAV Changeover/Bypass	VADB16

Product Data - Variable Air Volume Changeover/Bypass Units

Item: G1 Qty: 2

Varitrac damper
16" [406 mm] round damper
Bypass
1 Communicating sensor/bypass control (Fld)

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Mechanical Specifications - Variable Air Volume Changeover/Bypass Units
Item: G1 Qty: 2

Round Damper General Data
Cylinder - Rolled and seam welded 18 gauge galvanized steel.
Damper - The damper blade is constructed of a closed cell foam seal mechanically locked between two 22 gauge galvanized steel disks. The damper blade assembly is connected to a cast zinc shaft supported by self-lubricating bearings. The shaft is cast with a damper position indicator. The valve assembly includes a mechanical stop to prevent over stroking. Factory provided integral 24 VAC electric actuator provided if selected.

The damper actuator is a synchronous motor driven actuator with a three-wire connection terminal strip and is factory installed. This non-spring return actuator has a 53 lb-in [6 N.m] running torque, and a 1 minute, 90.00 Deg travel time. The 1/2" coupler fits over the round shaft of the damper. The actuator requires 2.5 VA at the nominal 24 VAC, 50/60 Hz.

Damper - 16
2000.0 cfm, 16" damper.

Bypass Damper Control
Bypass damper control is accomplished by a communicating sensor/bypass control assembly that includes a Unit Control Module.

Unit Dimensions - Variable Air Volume Changeover/Bypass Units
Item: G1 Qty: 2

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Approximate Dry Weight	11.0 lb

Weights reflected may vary ±5.0 lb based upon options selected.

Accessory - Variable Air Volume Changeover/Bypass Units
Item: G1 Qty: 2

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NOTES:

WEIGHT:	3.3 lb
OPERATING TEMPERATURES	
TEMPERATURE:	32.0 F TO 140.0 F
HUMIDITY:	5 TO 95% (NON-CONDENSING)
MOUNTING METHOD:	4 - #8 SELF DRILL SHEET METAL SCREWS

Inspections Division
Date: 11/20/17

Field Wiring - Variable Air Volume Changeover/Bypass Units
Item: G1 Qty: 2

Field Wiring - Variable Air Volume Changeover/Bypass Units
Item: G1 Qty: 2

Inspections Division
Date: 11/20/17

⚠ WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

⚠ CAUTION

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UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

Customer Notes:

1. ———— Factory installed.
   — — — — Optional or installed by others.
2. Factory wiring furnished with bypass damper, field connection to DDC/UCM required.

Inspections Division
Date: 11/20/17

Tag Data - VAV Changeover/Bypass-System Controllers (Qty: 2)

Item	Tag(s)	Qty	Description
H1	No Tag	2	CCP

Product Data - VAV Changeover/Bypass-System Controllers

Item: H1 Qty: 2

Standard Ship Cycle = Production Shipping Cycle
1 X13650941010 - CCP w/o Oper Display

Inspections Division
Date: 11/20/17

Mechanical Specifications - VAV Changeover/Bypass-System Controllers
Item: H1 Qty: 2

CCP-III W/O LCD

Program options:
Each central control panel is individually configurable as either an air conditioner controller or heat pump controller for a VariTrac system.

Outputs:
Binary outputs- optional relay board contacts rated at (1 A, 30VAC, 24 VA pilot duty), bypass damper control outputs (1A, 24 VAC).

Inputs:
Binary inputs are provided for occupied/unoccupied, auto/manual changeover, and manual heat/cool mode. Each binary input requires, should the function be desired, an isolated, ungrounded, remote contact. The contacts must be capable of passing 12 mA of current.

Velocity/static sensor input:
When used as a velocity sensor the input uses a self-calibrated velocity sensor for measuring the air handling unit discharge air velocity. The velocity sensor input is used for controlling the bypass damper. The velocity sensor input requires 3 conductor twisted shielded wire. Terminations are screw terminals. When used as static, the sensor will sense an increase in static as the zone damper closes down and will open the bypass damper to maintain the field desired static setpoint.

Supply air temperature sensor input:
The supply air temperature sensor monitors the air handling unit discharge air temperature, and is used by the central control panel to protect the air-handling unit from excessively high or low discharge air temperatures. The leaving air temperature sensor requires twisted, shielded pair wiring. Terminations are screw terminals.

Dimensions:
9 13/16 inches (250mm) high, 12 inches (305mm) wide, 2 13/16 inches (71mm) deep in a plastic enclosure.

Power:
20 to 30 VAC, 30 VA, 20 watts dedicated external transformer required.

Operating Temperature Range:
32-120F (2-49C)

Operating Humidity Range:
10-90% non-condensing

Functions

System control:
The central control panel scans the VariTrac unit control modules to determine the deviations from temperature setpoint, time of deviation, time from last changeover and number of unit control modules requiring heating or cooling. Based upon this information, the system heat/cool mode and stage of capacity are selected. The central control panel also monitors the system air temperature to ensure that high and low temperature limits are not violated.

System temperature control is accomplished by switching relays to sequence either the heat pump or air conditioning unit; alternatively, system temperature control may be accomplished through a communications link when a Voyager or other Reliatel control equipped unit is used.

The central control panel also controls system static air pressure or air velocity (depending on configuration) to the design point by opening and closing the bypass damper.

The systems sixth binary output can be configured to disable outside air
ventilation during the unoccupied mode, reflect the system heat/cool status, or be controlled by an ICS system.

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Control options:
The following control options are selectable at the central control panel:

Energy saver mode:
Energy saver mode releases all VariTrac dampers from their minimum position settings when the system is in active operation, allowing zone dampers receiving undesirable supply air temperature to completely shut off thereby, preventing the overheating or overcooling of the space.

Ventilation mode:
Ventilation mode allows enhanced ventilation by driving all zone dampers to four times their cooling minimum, limited by their maximum position when the system air handler is operating in a fan only mode.

Priority shutdown:
The central control panel will go into priority shutdown when the supply air temperature sensor fails, when communication to the communicating sensor/bypass control is lost or when contacts connected to the priority shutdown binary input are closed.

Air conditioning unit control:
When configured as a 2 heat/2 cool controller, the binary outputs are designated as follows:
1. Fan
2. Cool 1
3. Cool 2
4. Heat 1
5. Heat 2
6. Outside air, heat/cool, or ICS

Heat pump control:
When configured as a heat pump controller, the binary outputs are designated as follows:
1. Fan
2. Compressor 1
3. Compressor 2
4. Auxiliary heat
5. Reversing valve
6. Outside air, heat/cool, or ICS

Grouping:
Groups can provide greater flexibility for multiple tenant buildings. The central control panel can have up to four groups of zones. Overrides may be applied to groups.

Field Wiring - VAV Changeover/Bypass-System Controllers
Item: H1 Qty: 2

Inspections Division
Date: 11/20/17

⚠ WARNING	⚠ AVERTISSEMENT	⚠ CAUTION
HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.	VOLTAGE HASARDEUX! DECONNECTEZ TOUTES LES SOURCES ELECTRIQUES INCLUANT LES DISJONCTEURS SITUES A DISTANCE AVANT D'EFFECTUER L'ENTRETIEN. FAUTE DE DECONNECTER LA SOURCE ELECTRIQUE AVANT D'EFFECTUER L'ENTRETIEN PEUT ENTRAINER DES BLESSURES CORPORELLES SEVERES OU LA MORT.	USE COPPER CONDUCTORS ONLY! UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS. FAILURE TO DO SO MAY CAUSE DAMAGE TO THE EQUIPMENT.

Note 1: All customer wiring must be in accordance with national, state, and local electrical codes.
Note 2: Trane requires a dedicated transformer for 24 Vac power.
Note 3: Do not apply voltage to the priority shutdown or unoccupy.
Note 4: See product literature for Comm5 wire connection details.

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Field Installed Options - Part/Order Number Summary

This is a report to help you locate field installed options that arrive at the jobsite. This report provides part or orde numbers for each field installed option, and references it to a specific product tag. It is NOT intended as a bill of material for the job.

Product Family - 3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1B, RTU-2B	2	7.5 Ton R410A PKGD Unitary Gas/Electric	YSC092F3RLA--C 001C2A60100000 000000000000

Field Installed Option Description	Part/Ordering Number
Room sensor with temperature adjustment w/override	BAYSENS074A
Roof curb	BAYCURB043A
Power exhaust	BAYPWRX026A

Item	Tag(s)	Qty	Description	Model Number
A2	RTU-1A, RTU-2A	2	8.5 Ton R410A PKGD Unitary Gas/Electric	YSC102F3RLA--C 001C2A60100000 000000000000

Field Installed Option Description	Part/Ordering Number
Roof curb	BAYCURB043A
Power exhaust	BAYPWRX026A

Product Family - Split System Air Conditioning Units (Small)

Item	Tag(s)	Qty	Description	Model Number
B1	No Tag	1	3 Ton Condensing Unit	4TTA3036B3-------- -0-0000000000-00 000000-0------0000 -----000000000000 00000--00-0--0

Field Installed Option Description	Part/Ordering Number
Evaporator defrost control	AY28X079
Crankcase heater kit	BAYCCHT302RES

Product Family - Ductless Mini-Splits Systems

Item	Tag(s)	Qty	Description	Model Number
C1	DS-1 CU-1	1	Ductless Mini-Splits Systems	4TYK1624A10N0A-4MYW1624A10N0A

Field Installed Option Description	Part/Ordering Number
Wired Controller	TREWIRE1AHANDA

Product Family - Variable Air Volume Single Duct Terminal Units

Item	Tag(s)	Qty	Description	Model Number
E1	No Tag	17	VCWF06	VCWF06

Field Installed Option Description	Part/Ordering Number
Trane Air-Fi - WCS-SB (base)	X13790956010

Item	Tag(s)	Qty	Description	Model Number
E2	No Tag	1	VCWF08	VCWF08
E3	No Tag	1	VCWF10	VCWF10
E4	No Tag	13	VCCF06	VCCF06
E5	No Tag	1	VCCF08	VCCF08

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Field Installed Option Description	Part/Ordering Number
DDC sensor with occupancy and set point knob	X13511527010

Product Family - Variable Air Volume Changeover/Bypass Units

Item	Tag(s)	Qty	Description	Model Number
G1	No Tag	2	VAV Changeover/Bypass	VADB16

Field Installed Option Description	Part/Ordering Number
Communicating sensor/bypass control	501860870100