



Project Name:	CSA-Bay 3-AHU Replacement
Project No.:	2016-008
Contractor:	Trane
Shop Drawing No.:	SM-001
Item:	Air Handling Units
Date Received:	04-Mar-2017
Date Returned:	06-Mar-2017

Shop Drawing Review

The review is for the sole purpose of ascertaining conformance with the general design concept, and does not mean approval of the design details inherent in the shop drawings, responsibility for which shall remain with the Contractor. Such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents.

☐ Reviewed

☐ Revise and Resubmit

Reviewed by: ☒ Jason Alexander
(Mechanical)

☒ Reviewed as Noted

☐ Rejected

☒ Michal Lachowicz
(Electrical)

Refer to comments embedded in shop drawing below. Provide revised clean shop drawing record copy in O&M manual.



Engineering Submittal Revision 8A

Prepared For: PWSGC

Date: November 17, 2016

Attention: Jennifer Dumm

Job Name: CSA DFL Bay 3 AHU Replacement - D

Solicitation Number: 9F030-160615/A

CRM Number: 2053110

Trane is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product
2	Performance Climate Changer
8	End Devices and Sensors

Glenn Jones

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

Addressing CSA's comments/questions:

- 1. Unit is factory ULc and AHRI certified.**
 - a. Individual electrical components are CSA approved.**
 - b. Total CSA certification of unit is not available from the factory, this would have to be done after installation by local CSA representative (not included in submission price).**
- 2. Filter racks factory provided will accept Camfill FARR filters.**
- 3. End devices listed on page 41 for AHU-7 and page 62 for AHU-8 are all factory prewired.**
- 4. Windows are in supply and return fan sections only.**
- 5. Checker plate (treadplate) in access and mixing sections only.**
- 6. Standard warranty is 1st year parts only. We have also included 1st year labour. There is a 5 year parts only warranty provided for the actuators for the outdoor and return air dampers only. 1st year is defined as 12 months from start up or 18 months from delivery, whichever comes first.**
- 7. There are 2 fans in return fan section as per revised proposal and submittal.**
- 8. Unit construction is unpainted G90 galvanized steel.**
- 9. The factory no longer supports the installation of the old style 120 volt marine incandescent lights. We have included the new 24 volt LED portable light source with magnetic base in all possible sections. These lights are repositionable to allow the service technicians to best view the work surface. If it is found that these new style lights are not acceptable then old style lights, wiring and switch(es) would have to be installed by others.**
- 10. Please note that the following end devices will be supplied by Trane but are to be installed by others:**
 - Space pressure pickup tube**
 - Outside air temperature sensor**
 - Carbon dioxide sensor**
 - Outdoor relative humidity sensor**
 - HEPA Filter dirty filter switches**
 - Supply and return fan static pressure sensors**
 - Discharge air humidity sensors**
 - Discharge air damper actuator**
 - Any other sensors/controllers that are mounted external to the air handling unit or downstream of the HEPA filter module.**
- 11. Stainless steel liners will be provided by Trane in the cooling coil and humidifier sections. Due to manufacturing requirements, Trane must also provide stainless steel liners in the access section and face and bypass section that are between the cooling coil and humidifier sections**

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Tag Data - Performance Climate Changer (Qty: 2)

Item	Tag(s)	Qty	Description	Model Number
A1	AHU-7	1	Performance Climate Changer (CSAA)	CSAA057UA
A2	AHU-8	1	Performance Climate Changer (CSAA)	CSAA057UA

Product Data - Performance Climate Changer**Item: A1 Qty: 1 Tag(s): AHU-7****Unit level options**

Indoor unit
Unit size 57
8in. integral base frame
UL listed unit
Multiple composite handles/latches
497.75 Unit length
Factory (all fan motors)
Provide SS Liners to shipping split S4
Move Filter Gage to Drive Side of Unit

Controls and VFD/starter

Variable volume control system
UC600
Left
Supply fan VFD w/bypass
Return/exhaust fan VFD

Warranty

Extended warranty
Parts warranty - 6 months additional
1st year labor warranty
12/24 delayed startup warranty.

Air mixing section (Pos #1)

Air mixing section
Mixing box w/o filter
Door- left side
Test port on left side
Marine LED light
Treadplate
Back damper - opposed blade
Front full face opening

Return fan section (Pos #2)

Fan section
Return fan
Door- left side
Outward swing
Thermal window - left side
Test port on left side
27in. dd plenum, full width, M press
Higher efficiency
2 Fan quantity
Plenum fan
Left side drive
External mounting
NEMA premium compliant TEFC
Voltage 575/3
15 max applied hp
1800 RPM
Inverter balance with SGR
Top damper - opposed blade
Transmitter per fan
Marine LED light
Motor wiring conduit
VFD

Air mixing section (Pos #3)

Air mixing section
Mixing box w/o filter
Door- left side
Test port on left side
Marine LED light
Treadplate
Back damper - opposed blade
Front full face opening
Top damper - opposed blade

Filter section (Pos #4)

Filter
Short Bag/Cartridge filter
Door- left side
Test port on left side
Bag/cartridge filter frame

2" pre-filter, rack
only suitable for
Camfil model 30/30
MERV 8 and final
12" cartridge filter,
Camfil model Durafil
2V.

Heating coil section (Pos #5)

Horizontal coil
Extended medium
Door- none
Stainless steel drain pan
Left side - drain connection
Left side - coil supply
Standard panels
Unit coil height
Heating coil
Hot water
Single use coil
Type "5W" coil
1 row
80 fins per foot nominal fin spacing
Aluminum fins
Prima flo H (Hi efficient)
.020" (0.508 mm) copper tubes
5/8in. tube diameter (15.875 mm)
Galvanized steel coil casing

Humidification section (Pos #6)

Humidifier
Stainless steel drain pan
Left hand connection
Building steam to be brought to unit by Others
Stainless steel floor, ceiling and walls
Standard panels

Access section (Pos #7)

Access/blank/turning section
Extended medium
Door- left side
Test port on left side
Marine LED light
Treadplate

Face and bypass (Pos #8)

External face & bypass damper (External duct by Others)
Stainless steel floor, ceiling and walls

Coil section (Pos #9)

Horizontal coil
Medium
Door- none
Stainless steel drain pan
Left side - drain connection
Left side - coil supply
Standard panels
Unit coil height
Cooling coil

Chilled water
 Single use coil
 Type "UU" coil
 4 rows
 156 fins per foot nominal fin spacing
 Aluminum fins
 Delta flo H (Hi efficient)
 .016" (0.406 mm) copper tubes
 1/2in. tube diameter (12.7 mm)
 Stainless steel coil casing
 Stainless steel floor, ceiling and walls
 Turbulators

Access section (Pos #10)

Access/blank/turning section
 Large
 Door- left side
 Test port on left side
 Marine LED light
 Treadplate

Supply fan section (Pos #11)

Fan section
 Supply fan
 Door- left side
 Outward swing
 Thermal window - left side
 Test port on left side
 44in. belt-drive plenum, M press
 Plenum fan
 Left side drive
 External mounting
 NEMA premium compliant TEFC
 Voltage 575/3
 50 max applied hp
 1800 RPM
 Inverter balance with SGR
 Single transmitter
 Marine LED light
 Motor wiring conduit
 VFD w/ bypass

Controls section (Pos #12)

Controls only section
 Door- none
 Controller door- left

~~Filter section (Pos #13)~~

~~Filter
 Flat filter
 Door- left side
 Test port on left side
 2in. filter frame~~

Delete filter section
 13.

Filter section (Pos #14)

Filter
 HEPA filter
 Door- left side
 Test port on left side
 HEPA filter frame

HEPA filter rack
 shall be suitable for
 Camfil model
 Astrocel I HCX
 gasketed.

Air mixing section (Pos #15)

Air mixing section
 Reduced length mixing box w/o filter
 Door- left side
 Treadplate
 Back full face opening
 Top damper - high velocity parallel

Item: A2 Qty: 1 Tag(s): AHU-8**Unit level options**

- Indoor unit
- Unit size 57
- 8in. integral base frame
- UL listed unit
- Multiple composite handles/latches
- 497.75 Unit length
- Factory (all fan motors)
- Provide SS Liners to shipping split S4
- Move Filter Gage to Drive Side of Unit

Controls and VFD/starter

- Variable volume control system
- UC600
- Right
- Supply fan VFD w/bypass
- Return/exhaust fan VFD

Warranty

- Extended warranty
- Parts warranty - 6 months additional
- 1st year labor warranty
- 12/24 delayed startup warranty.

Air mixing section (Pos #1)

- Air mixing section
- Mixing box w/o filter
- Door- right side
- Test port on right side
- Marine LED light
- Treadplate
- Back damper - opposed blade
- Front full face opening

Return fan section (Pos #2)

- Fan section
- Return fan
- Door- right side
- Outward swing
- Thermal window - right side
- Test port on right side
- 27in. dd plenum, full width, M press
- Higher efficiency
- 2 Fan quantity
- Plenum fan
- Right side drive
- External mounting
- NEMA premium compliant TEFC
- Voltage 575/3
- 15 max applied hp
- 1800 RPM
- Inverter balance with SGR
- Top damper - opposed blade
- Transmitter per fan
- Marine LED light
- Motor wiring conduit
- VFD
- Refer to mechanical specifications for footnote 4

Air mixing section (Pos #3)

- Air mixing section
- Mixing box w/o filter
- Door- right side
- Test port on right side
- Marine LED light
- Treadplate
- Back damper - opposed blade

- Front full face opening
- Top damper - opposed blade
- Filter section (Pos #4)**
 - Filter
 - Short Bag/Cartridge filter
 - Door- right side
 - Test port on right side
 - Bag/cartridge filter frame
- Heating coil section (Pos #5)**
 - Horizontal coil
 - Extended medium
 - Door- none
 - Stainless steel drain pan
 - Right side - drain connection
 - Right side - coil supply
 - Standard panels
 - Unit coil height
 - Heating coil
 - Hot water
 - Single use coil
 - Type "5W" coil
 - 1 row
 - 80 fins per foot nominal fin spacing
 - Aluminum fins
 - Prima flo H (Hi efficient)
 - .020" (0.508 mm) copper tubes
 - 5/8in. tube diameter (15.875 mm)
 - Galvanized steel coil casing
- Humidification section (Pos #6)**
 - Humidifier
 - Stainless steel drain pan
 - Right hand connection
 - Building steam to be brought to unit by Others
 - Stainless steel floor, ceiling and walls
 - Standard panels
- Access section (Pos #7)**
 - Access/blank/turning section
 - Extended medium
 - Door- right side
 - Test port on right side
 - Marine LED light
 - Stainless steel floor, ceiling and walls
 - Treadplate
- Face and bypass (Pos #8)**
 - External face & bypass damper (External duct by Others)
 - Stainless steel floor, ceiling and walls
- Cooling coil section (Pos #9)**
 - Horizontal coil
 - Medium
 - Door- none
 - Stainless steel drain pan
 - Right side - drain connection
 - Right side - coil supply
 - Standard panels
 - Unit coil height
 - Cooling coil
 - Chilled water
 - Single use coil
 - Type "UU" coil
 - 4 rows
 - 156 fins per foot nominal fin spacing
 - Aluminum fins
 - Delta flo H (Hi efficient)

2" pre-filter, rack
only suitable for
Camfil model 30/30
MERV 8 and final
12" cartridge filter,
Camfil model Durafil
2V.

.016" (0.406 mm) copper tubes
1/2in. tube diameter (12.7 mm)
Stainless steel coil casing
Turbulators

Access section (Pos #10)

Access/blank/turning section
Large
Door- right side
Test port on right side
Marine LED light
Treadplate

Supply fan section (Pos #11)

Fan section
Supply fan
Door- right side
Outward swing
Thermal window - right side
Test port on right side
44in. belt-drive plenum, M press
Plenum fan
Right side drive
External mounting
NEMA premium compliant TEFC
Voltage 575/3
50 max applied hp
1800 RPM
Inverter balance with SGR
Single transmitter
Marine LED light
Motor wiring conduit
VFD w/ bypass
Refer to mechanical specifications for footnote 4

Controls section (Pos #12)

Controls only section
Door- none
Controller door- right

Filter section (Pos #13)

Filter
Flat filter
Door- right side
Test port on right side
2in. filter frame

Delete filter section
13.

Filter section (Pos #14)

Filter
HEPA filter
Door- right side
Test port on right side
HEPA filter frame

HEPA filter rack
shall be suitable for
Camfil model
Astrocel I HCX
gasketed.

Air mixing section (Pos #15)

Air mixing section
Reduced length mixing box w/o filter
Door- right side
Treadplate
Back full face opening
Top damper - high velocity parallel

Performance Data - Performance Climate Changer

Tags	AHU-7, AHU-8		
Unit level options			
Position			
Length (in)	497.750		
Width (in)	125.500		
Height (in)	91.000		
Rigging weight (lb)	15916.7		
Installed weight (lb)	16192.7		
Roof curb weight (lb)	0.0		
Actual airflow (cfm)	30000		
Unit elevation (ft)	0.00		
Shipping split 1 weight (lb)	823.4		
Shipping split 2 weight (lb)	2462.1		
Shipping split 3 weight (lb)	2179.1		
Shipping split 4 weight (lb)	3467.8		
Shipping split 5 weight (lb)	763.0		
Shipping split 6 weight (lb)	4382.8		
Shipping split 7 weight (lb)	2114.6		
Controls section			
Position	#12		
Section length (in)	24.500		
Section weight (lb)	704.8		
Greatest discharge PD (in H2O)	0.000		
Controls section static pressure (in H2O)	0.000		
Fan section			
Position	#2	#11	
Section length (in)	61.000	59.500	
Section weight (lb)	2462.1	3678.1	
Fan airflow (cfm)	30000	30000	
Elevation (ft)	0.00	0.00	
Overall ESP (in H2O)	0.750	1.750	
Total static pressure (in H2O)	2.481	6.169	
Maximum TSP @ 60 Hz (in H2O)	2.953	-	
Fan pressure drop (in H2O)	2.370	1.782	
Speed (rpm)	1614	1012	
Total brake horsepower (hp)	22.945	48.241	
Unit static efficiency (%)	51.15	60.47	
Motor hertz (Hz)	55	60	
Discharge 1 top - airflow (cfm)	30000	-	
Discharge 1 front - face velocity (ft/min)	450	450	
Discharge 1 top - face velocity (ft/min)	2101	-	
Discharge 1 front - pressure drop (in H2O)	0.032	0.032	
Discharge 1 top - pressure drop (in H2O)	0.413	-	
Discharge 1 front - area (sq ft)	66.66	66.66	
Discharge 1 top - area (sq ft)	14.28	-	
Access section			
Position	#7	#10	
Section length (in)	19.000	48.000	
Section weight (lb)	359.5	763.0	
Coil section			
Position	#5	#9	
Section length (in)	19.000	14.000	
Section weight (lb)	727.8	1241.7	
Coil performance airflow (cfm)	30000	30000	
Unit airflow (cfm)	30000	30000	

Tags	AHU-7, AHU-8		
Coil face area (sq ft)	56.50	56.89	
Coil face velocity (ft/min)	531	527	
Air pressure drop (in H2O)	0.079	0.672	
Coil section pressure drop (in H2O)	0.079	0.672	
Coil rigging weight (lb)	226.1	661.7	
Coil installed weight (lb)	297.1	866.7	
Top or single coil dry weight (lb)	113.1	330.8	
Middle or bottom coil dry weight (lb)	113.1	330.8	
Leaving dry bulb (F)	85.55	55.00	
Leaving wet bulb (F)	-	54.44	
Entering dry bulb (F)	58.00	82.00	
Entering wet bulb (F)	-	68.00	
Fluid type	Water	Water	
Coil fluid percentage (%)	100.00	100.00	
Entering fluid temperature (F)	180.00	44.00	
Leaving fluid temperature (F)	160.00	54.00	
Fluid temperature rise (F)	-	10.00	
Fluid temperature drop (F)	20.00	-	
Standard fluid flow rate (gpm)	89.51	253.29	
Fluid pressure drop (ft H2O)	6.21	15.29	
Fluid velocity (ft/s)	4.12	3.88	
Fluid volume (gal)	8.52	24.51	
Sensible capacity (MBh)	-	893.32	
Total capacity (MBh)	896.28	1270.99	
Face and bypass			
Position	#8		
Section length (in)	22.000		
Section weight (lb)	934.6		
Bypass damper airflow (cfm)	15000		
Face damper airflow (cfm)	15000		
Bypass damper area (sq ft)	10.11		
Face damper area (sq ft)	51.53		
Bypass damper pressure drop (in H2O)	0.502		
Face damper pressure drop (in H2O)	0.015		
Total bypass damper pressure drop (in H2O)	0.502		
Total face damper pressure drop (in H2O)	0.015		
Module total pressure drop (in H2O)	0.502		
Filter section			
Position	#4	#13	#14
Section length (in)	24.500	14.000	40.000
Section weight (lb)	580.5	422.0	810.1
Filter airflow (cfm)	30000	30000	30000
Filter area (sq ft)	60.00	63.33	57.00
Filter condition	Mid-life	Mid-life	Mid-life
Customer supplied filter PD (in H2O)	0.620	0.280	1.000
Filter section pressure drop (in H2O)	0.620	0.280	1.000
Air mixing section			
Position	#1	#3	#15
Section length (in)	48.000	48.000	41.500
Section weight (lb)	823.4	870.7	882.5
Opening 1 back - airflow (cfm)	30000	30000	30000
Opening 1 front - airflow (cfm)	30000	30000	-
Opening 1 top - airflow (cfm)	-	5000	30000
Opening 1 back - area (sq ft)	22.79	22.79	66.66
Opening 1 front - area (sq ft)	66.66	66.66	-

Tags	AHU-7, AHU-8		
Opening 1 top - area (sq ft)	-	22.79	14.32
Opening 1 back - face velocity (ft/min)	1317	1317	-
Opening 1 top - face velocity (ft/min)	-	219	2095
Opening 1 back - pressure drop (in H2O)	0.111	0.293	-
Opening 1 top - pressure drop (in H2O)	-	0.003	0.727
Opening 1 back total pressure drop (in H2O)	0.111	0.293	-
Opening 1 top total pressure drop (in H2O)	-	0.003	0.727
Back inlet type	Ducted	Unducted	-
Top inlet type	-	Ducted	Unducted
Greatest entry PD (in H2O)	0.111	0.293	0.727
Total mixing section pressure drop (in H2O)	0.111	0.293	0.727
Front total pressure drop (in H2O)	0.000	0.000	0.000
Back total pressure drop (in H2O)	0.111	0.293	0.000
Top total pressure drop (in H2O)	0.000	0.003	0.727
Bottom total pressure drop (in H2O)	0.000	0.000	0.000
Right side total pressure drop (in H2O)	0.000	0.000	0.000
Left side total pressure drop (in H2O)	0.000	0.000	0.000
Humidification section			
Position	#6		
Section length (in)	14.000		
Section weight (lb)	932.0		
Actual airflow (cfm)	30000		
Steam rate (lb/hr)	717.43		
Valve inlet steam pressure (psig)	15.00		
EDB (F)	78.00		
Entering RH (%)	25.00		
Leaving RH (%)	50.00		
Face velocity (ft/min)	644		
Humidifier component PD (in H2O)	0.029		
Air temperature gain (F)	1.56		
Panel condensation loss (lb/hr)	53.31		
Maximum capacity of panel (lb/hr)	1331.25		
Maximum allowable steam pressure (psig)	60.00		
Minimum allowable steam pressure (psig)	2.00		

Mechanical Specifications - Performance Climate Changer**Item: A1, A2 Qty: 2 Tag(s): AHU-7, AHU-8****GENERAL**

Per ASHRAE 62.1 recommendation, indoor air handling units will be shipped stretch-wrapped to protect unit from in-transit rain and debris. Installing contractor is responsible for long term storage in accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07B-EN).

Unit shall be UL and C-UL Listed. Supply fans within the scope of AHRI Standard 430 shall be certified in accordance with AHRI Standard 430. Unit sound performance data shall be provided using AHRI Standard 260 test methods and reported as sound power. Trane, in providing this program and data, does not certify or warrant NC levels. These levels are affected by factors specific to each application and/or installation and therefore unable to be predicted or certified by Trane. *Refer to product data for specific fan footnote references.*

Unit Construction

All unit panels shall be 2" solid, double-wall construction to facilitate cleaning of unit interior. Unit panels shall be provided with a mid-span, no-through-metal, internal thermal break. Casing thermal performance shall be such that under 55°F supply air temperature and design conditions on the exterior of the unit of 81°F dry bulb and 73°F wet bulb, condensation shall not form on the casing exterior. All exterior and interior indoor AHU panels will be made of galvanized steel.

Unit Paint

Unit to ship unpainted from factory. Unit to be painted by 3rd party finisher, or by painting contractor at job site.

Casing Deflection

The casing shall not exceed 0.0042 inch deflection per inch of panel span at 1.00 times design static pressure. Maximum design static shall not exceed +8 inches w.g. in all positive pressure sections and -8 inches w.g. in all negative pressure sections.

Floor Construction

The unit floor shall be of sufficient strength to support a 300.0 lb load during maintenance activities and shall deflect no more than 0.0042 inch per inch of panel span.

Unit base

Manufacturer to provide a full perimeter integral base frame for either ceiling suspension of units or to support and raise all sections of the unit for proper trapping. Indoor unit base frame will either be bolted construction or welded construction. All outdoor unit base frames shall be welded construction. For indoor units, refer to schedule for base height and construction type. Contractor will be responsible for providing a housekeeping pad when unit base frame is not of sufficient height to properly trap unit. Unit base frames not constructed of galvanized steel shall be chemically cleaned and coated with both a rust-inhibiting primer and finished coat of rust-inhibiting enamel. Unit base height to be included in total height required for proper trap height.

Insulation

Panel insulation shall provide a minimum thermal resistance (R) value of 13 ft²-h-°F/Btu throughout the entire unit. Insulation shall completely fill the panel cavities in all directions so that no voids exist and settling of insulation is prevented. Panel insulation shall comply with NFPA 90A.

Drain Pan

In sections provided with a drain pan, the drain pan shall be designed in accordance with ASHRAE 62.1. To address indoor air quality (IAQ) the drain pan shall be sloped in two planes promoting positive drainage to eliminate stagnant water conditions. Drain pan shall be insulated, and of double wall construction. The outlet shall be the lowest point on the pan, and shall be of sufficient diameter to preclude drain pan overflow under normally expected operating conditions. All drain pans connections shall have a threaded connection, extending a minimum of 2-1/2" beyond the unit base, and shall be made from the same material as the drain pan. Drain pan located under a cooling coil shall be of sufficient size to collect all condensate produced from the coil. Refer to Product Data for specific information on which sections are supplied with a drain pan, the drain pan material and connection location.

Access Door Construction

Access doors shall be 2" double wall construction. Interior and exterior door panels shall be of the same construction as the interior and exterior wall panels respectively. All doors shall be provided with a thermal break construction of door panel and door frame. Gasketing shall be provided around the full perimeter of the doors to prevent air leakage. Surface mounted handles shall be provided to allow quick access to the interior of the functional section and to prevent through cabinet penetrations that could likely weaken the casing leakage and thermal performance. Handle hardware shall be

designed to prevent unintended closure. Access doors shall be hinged and removable for quick easy access. Hinges shall be interchangeable with the door handle hardware to allow for alternating door swing in the field to minimize access interference due to unforeseen job site obstructions. Door handle hardware shall be adjustable and visually indicate locking position of door latch external to the section. Door hinges shall be galvanized. All doors shall be a minimum of 60" high when sufficient height is available or the maximum height allowed by the unit height. Door handles shall be provided for each latching point of the door necessary to maintain the specified air leakage integrity of the unit. Optionally for indoor AHUs and as standard on outdoor AHUs, outward swing doors are provided with a single handle linked to multiple latching points. An optional shatterproof window shall be provided in access doors where indicated on the plans. Window shall either be single pane, or thermal dual pane, as defined on schedule. Window shall be capable of withstanding unit operating pressures and shall be safe for viewing UV-C lamps. *Refer to Product Data for specific information on which sections are supplied with an access door, the door location, a single handle and a window.* Test port shall be supplied in each door as specified in Product Data to facilitate the field commissioning of the unit by the test and balance contractor. Test port location can vary on a door due to other door features ordered.

Marine Light

A factory-mounted, weather resistant (enclosed and gasketed to prevent water and dust intrusion), light emitting diode (LED) fixture shall be provided in sections of the unit as specified for maintenance and service visibility. Fixture shall be complete with aluminum die cast housing, polycarbonate lens designed for maximum light output, and LEDs wired to a single switch within a factory provided service module. LED lighting shall provide instant-on "white" light and have a minimum 50,000 hour life. Fixtures shall be designed for flexible positioning during maintenance and service activities for optimal location. All lights within the unit shall be wired to a single switch within the factory provided service module. Service module shall be provided on the fan section. *Refer to the Product Data section of the submittal for sections with marine lights.*

MIXING SECTION

A mixing section shall be provided to support the damper assembly for outdoor, return, and/or exhaust air. For air handling units requiring both a supply and return/exhaust fan, the unit manufacturer shall supply single point power wiring to both factory installed and tested fan motor starters or variable frequency drives. Individual high voltage enclosures will be supplied for both the supply and return/exhaust fans. Single point power wiring shall include a high voltage distribution block located in the supply fan starter or variable frequency drive cabinet. Single point power wiring shall not compromise the UL or ETL certification of the unit. Single point power wiring shall also include factory installed and wired control systems if ordered.

Treadplate Flooring

Aluminium treadplate traction enhancement shall be applied to the unit floor to improve the walking surface in those unit sections where the floor is fully accessible, and not impeded by internal structural or functional features. *Refer to the Product Data section for sections supplied with traction enhancement.*

Dampers

Dampers shall modulate the volume of outdoor, return, or exhaust air. The dampers shall be of doubleskin airfoil design with metal, compressible jamb seals and flexible blade-edge seals on all blades. The blades shall rotate on stainless-steel sleeve bearings. The dampers shall be rated for a maximum leakage rate of 3 cfm/ft² at 1 in. w.g. complying with ASHRAE 90.1 maximum damper leakage. All leakage testing and pressure ratings shall be based on AMCA Standard 500-D. Dampers may be arranged in a parallel or opposed-blade configuration.

Dampers

Dampers shall modulate the volume of outdoor, return, or exhaust air. The dampers shall be of doubleskin airfoil design with metal, compressible jamb seals and flexible blade-edge seals on all blades. The blades shall rotate on stainless-steel sleeve bearings. The dampers shall be rated for a maximum leakage rate of 3 cfm/ft² at 1 in. w.g. complying with ASHRAE 90.1 maximum damper leakage. All leakage testing and pressure ratings shall be based on AMCA Standard 500-D. Dampers may be arranged in a parallel or opposed-blade configuration. The following specifications apply only to units with outside air and return air dampers, with actuators. The 5 year warranty applies only to these items. This unit contains Economizer that meets or exceeds all mandatory requirements prescribed by Title 24, including but not limited to:

- 5 yr parts only warranty
- Successfully tested to 60,000 Actuations
- Less than 10 cfm/sq.ft. of damper leakage at 1" WG per AMCA 500L

An averaging temperature sensor shall be serpentine across the module. All capillaries bends shall be radiused and fastened with capillary clips to prevent crimping and minimize wear. A 1,000 ohm, platinum 385 curve, resistive temperature detector (RTD) is the sensor material that shall be mounted.

Mixing Section Damper Actuators

Spring return actuators shall be mounted with the outside air damper linked normally closed and the return air damper linked normally open.

FILTER SECTION

A section shall be provided to support the filter rack as indicated throughout the unit. Refer to Product Data and As-Built sections of the submittal for specific locations within each unit.

Primary Filters**Bag Filters**

The filters shall be fine-fiber, all-glass media with spun backing to keep glass fibers from eroding downstream. The stitching method shall permit the bag to retain its pleated shape without the use of a wire-basket support. The filters shall be capable of operating up to 625 fpm face velocity without loss of filter efficiency and holding capacity. The filters shall be sealed into a metal header. A gasket material shall be installed on the metal header of the filter to prevent filter bypass where the metal headers meet the side-access racks. All bag filters shall be furnished with a 2-inch prefilter to extend bag filter life. The manufacturer shall supply a side-access filter rack capable of holding bag filters and prefilters.

Differential Pressure Gage

A differential pressure gage shall be flush-mounted with casing outer wall with probes piped to both sides of the filter bank to indicate status. Combination filter frames will be provided with a separate differential pressure gage piped across each of the high-efficient and pre-filter banks. The gage shall be diaphragm-actuated dial-type and shall maintain a +/- 5 percent accuracy within operating temperature limits of the air handler. Range shall be 0 - 2.0 in. w.g,

HEPA Filter Differential Pressure Gage

A differential pressure gage shall be mounted externally on the unit casing outer wall with probes piped to both sides of the HEPA filter bank to indicate status. The gage shall be diaphragm-actuated dial-type and shall maintain a +/- 5 percent accuracy within operating temperature limits of the air handler. Range shall be 0 - 5.0 in. w.g,

Dirty Filter Switch

A differential pressure switch piped to both sides of the filter shall indicate filter status.

COIL SECTION WITH FACTORY INSTALLED COIL

The coil section shall be provided complete with coil and coil holding frame. The coils shall be installed such that headers and return bends are enclosed by unit casings. If two or more cooling coils are stacked in the unit, an intermediate drain pan shall be installed between each coil and be of the same material as the primary drain pan. Like the primary drain pan, the intermediate drain pan shall be designed being of sufficient size to collect all condensation produced from the coil and sloped to promote positive drainage to eliminate stagnant water conditions. The intermediate pan shall begin at the leading face of the water-producing device and be of sufficient length extending downstream to prevent condensate from passing through the air stream of the lower coil. Intermediate drain pan shall include downspouts to direct condensate to the primary drain pan. The outlet shall be located at the lowest point of the pan and shall be sufficient diameter to preclude drain pan overflow under any normally expected operating condition. Hydronic coils shall be supplied with factory installed drain and vent piping to unit casing exterior. Piping is to facilitate field installation of automatic venting or drain valves on coils, which are not supplied with unit. *Refer to the Product Data section of the submittal for the units and/or coils supplied with drain and vent piping.*

Water Coils (UW, UU, UA, 3W, 3U, W, 5W, 5A, WD, 5D, D1, D2, P, or TT)

The coils shall have aluminum fins and seamless copper tubes. Copper fins may be applied to coils with 5/8-inch tubes. Fins shall have collars drawn, belled, and firmly bonded to tubes by mechanical expansion of the tubes. The coil casing may be galvanized or stainless steel. Refer to the Product Data section of the submittal for the coil casing material. The coils shall be proof-tested to 300 psig and leak-tested under water to 200 psig. Coils containing water or ethylene glycol are certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org. Propylene glycol and calcium chloride, or mixtures thereof, are outside the scope of AHRI Standard 410 and, therefore, do not require AHRI 410 rating or certification. Coil connections are constructed of cast iron with female connections, steel block with female connections or steel pipe with male connections. Type P or TT coil connections do not extend out of unit casing. All other water coil types have connections that extend out beyond unit casing. Headers on downstream coil bank of staggered coil sections do not extend beyond the unit casing and must be completed by the on-site piping contractor.

Tubes are 1/2" [13 mm] OD 0.016" [0.406 mm] thick copper.

Tubes are 5/8" [16 mm] OD 0.020" [0.508 mm] thick copper.

Control Valve

Control valves shall be provided by the air-handling unit (AHU) manufacturer and field-piped by the piping contractor. Power and signal wiring shall be extended to a factory-installed external junction box to facilitate wiring and to maintain air leakage integrity of the casing. Weatherproof housings are available for these valves. They are not included and must be field-purchased. These valves are not for combustible gas applications as leaks and explosions could result. Sound engineering practices need to be applied, especially in low temperature applications with respect to condensation and ice buildup. Ensure that actuators are installed in a weather-protected area that is within the ambient range of 0F-212F. *Refer to the Control Valve Schedule in the Accessory section of the submittal.*

Averaging Temperature Sensor

An averaging temperature sensor shall be serpentine across the module. All capillaries bends shall be radiused and fastened with capillary clips to prevent crimping and minimize wear.

Low Limit

A double-pole single throw (1 NO, 1 NC) low limit switch shall be wired to a momentary push-button manual reset circuit (without Trane wiring the device is auto-resetting). Normally open contacts close and normally closed contact open on temperature rise above set point, on temperature drop below set point the contacts revert to their normally open or closed state. Set point is default set to 35F at factory, but is adjustable if increased setpoint is needed due to installation site ducting to coil causing cold spot in a unique location of the coil. Capillaries are serpentine across the entering or leaving side of the coil with routing Trane designed to maximize coil coverage and cover critical top and bottom 3 inches of the coil for any given capillary and coil area configuration (Trane designed and historically proven capillary routing does not necessarily match device manufacturer's generic installation recommendations). The bends of the capillaries shall be curved and fastened with capillary clips to prevent crimping and minimize wear. A separate low limit shall be provided for each coil in a coil stack. A 1,000 ohm, platinum 385 curve, resistive temperature detector (RTD) is the sensor material that shall be mounted.

ACCESS/INSPECTION / TURNING SECTION

A section shall be provided to allow additional access/inspection of unit components and space for field-installed components as needed. An access door shall be provided for easy access. All access sections shall be complete with a double-wall, removable door downstream for inspection, cleaning, and maintenance. Interior and exterior door panels shall be of the same construction as the interior and exterior wall panels, respectively. All doors downstream of cooling coils shall be provided with a thermal break construction of door panel and door frame.

Treadplate Flooring

Aluminium treadplate traction enhancement shall be applied to the unit floor to improve the walking surface in those unit sections where the floor is fully accessible, and not impeded by internal structural or functional features. *Refer to the Product Data section for sections supplied with traction enhancement.* Fans that are selected with inverter balancing shall first be dynamically balanced at design RPM. The fans then will be checked in the factory from 25% to 100% of design RPM to insure they are operating within vibration tolerance specifications, and that there are no resonant frequency issues throughout this operating range. Inverter balancing that requires lockout frequencies inputted into a variable frequency drive to in order to bypass resonant frequencies shall not be acceptable. If supplied in this manner by the unit manufacturer, the contractor will be responsible for rebalancing in the field after unit installation. Fans selected with inverter balancing shall have a maintenance free, circumferential conductive micro fiber shaft grounding ring installed on the fan motor to discharge shaft currents to ground.

BELT-DRIVE PLENUM FAN SECTION

The fan type shall be provided as required for stable operation and optimum energy efficiency. The fan shall be a single-width, single-inlet, multiblade-type, belt-driven plenum fan.

DIRECT-DRIVE PLENUM FAN SECTION

The fan type shall be provided as required for stable operation and optimum energy efficiency. The fan shall be a single-width, single-inlet, multiblade-type direct-drive plenum fan. Motor bearing life of the direct-drive plenum fan shall be not less than L-10 250,000 hrs. Refer to the Product Data section for fan quantity and number of blades selected within each unit. Fans shall be certified as complying with AHRI Standard 430 for airflow performance. Fans shall be tested and rated in accordance with AHRI Standard 260 for sound performance. Plenum fans shall be equipped with self-aligning, antifriction, pillow-block bearings with an L-50 life of 200,000 hours as calculated per ANSI/AFBMA Standard 9. For any bearing requiring relubrication, the grease line shall be extended to the fan support bracket on the drive side. The fan shall be statically and dynamically balanced at the factory as a complete fan assembly (fan wheel, motor, drive, and belts). The fan shaft shall not exceed 75 percent of its first critical speed at any cataloged speed. Fan wheels shall be keyed to the fan shaft to prevent slipping. The fan shafts shall be solid steel. The fan section shall be provided with an access door on the drive side of the fan. Fan performance shall be certified as complying with AHRI Standard 430. The fan blades shall be backward-inclined airfoil. On units supplied with plenum or motorized impeller fans, expanded metal door guard(s) shall be supplied on the access door(s) to the fan and those downstream access

door(s) where unintended access to the plenum or motorized impeller fan could occur. Door guard is intended to deter unauthorized entry and incidental contact with rotating components. *Refer to the Product Data section for fans with access door guard(s).*

Drive Service Factor

The drives shall be constant speed with fixed-pitch sheaves. The drives shall be selected at a minimum 50 percent larger than the motor brake horsepower (1.5 service factor).

Motor Frame

The motor shall be mounted integral to the isolated fan assembly and furnished by the unit manufacturer. The motor is mounted inside the unit casing on an adjustable base to permit adjustment of drive belt tension (not applicable for direct drive plenum fans). The motor shall meet or exceed all NEMA Standards Publication MG 1 requirements and comply with NEMA Premium efficiency levels when applicable except for fractional horsepower motors which are not covered by the NEMA classification. The motor shall be T-frame, squirrel cage with size, type, and electrical characteristics as shown on the equipment schedule. *Refer to the Product Data section for selected fan motors within each unit.*

Two-Inch Spring Isolators

The fan and motor assembly (on sizes 10 to 120) shall be internally isolated from the unit casing with 2-inch (50.8 mm) deflection spring isolators, furnished and installed by the unit manufacturer. The isolation system shall be designed to resist loads produced by external forces, such as earthquakes, and conform to the current IBC seismic requirements.

Two-Inch Spring Isolators

Direct-drive fan and motor assemblies shall be internally isolated from the unit casing with 2-inch (50.8 mm) deflection spring isolators. The isolation system shall be designed to resist loads produced by external forces, such as earthquakes, and conform to the current IBC seismic requirements. A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

Fan Discharge Temperature Sensor

A button or probe temperature sensor shall be mounted in the fan discharge. Design VFD frequency is less than line frequency. Use caution during startup to ensure the VFD will not operate at the line frequency, or ensure that the air delivery system can handle being overpressurized. Starter/VFD shall be mounted externally in a NEMA Type 1 enclosure on the supply fan section. An external disconnect shall be mounted through-the-door to the starter/VFD to disconnect full power from starter/VFD. Starter/VFD shall be mounted externally in a NEMA Type 1 enclosure on the return or exhaust fan section. An external disconnect shall be mounted through-the-door to the starter/VFD to disconnect full power from starter/VFD.

Airflow Switch

A differential pressure switch piped to the discharge and suction sides of the fan shall indicate fan status.

Single transmitter

The fan shall have an airflow measurement system to measure fan airflow directly or to measure differential pressure that can be used to calculate fan airflow. The system shall predict airflow within +/- 5 percent total accuracy (device & transmitter) when operating within the stable operating region of the fan curve. On units supplied with multiple direct drive fans, one transmitter is supplied for the total array. The submitted fan airflow performance and noise levels shall not be affected by the installation of the device. Any device that provides an obstruction to the fan inlet will not be accepted. *Refer to the Product Data section for fans with flow meters.*

Transmitter per Fan (High Performance Flow Meter)

The fan shall have an airflow measurement system to measure fan airflow directly or to measure differential pressure that can be used to calculate fan airflow. The system shall predict airflow within +/- 5 percent total accuracy (device & transmitter) when operating within the stable operating region of the fan curve. On units supplied with multiple direct drive fans, one transmitter is supplied for each fan in the array. The submitted fan airflow performance and noise levels shall not be affected by the installation of the device. Any device that provides an obstruction to the fan inlet will not be accepted. *meters.*

Combination VFD / Disconnect

A combination Variable Frequency Drive (VFD) / disconnect shall be provided when variable air volume control is required for fan operation. Whether for single fan, dual fan, or fan array applications, a single VFD shall be provided to ensure proper operation and to optimize operating life. Each VFD /disconnect shall be properly sized, factory mounted in a full metal enclosure, wired to the fan motor(s), and commissioned to facilitate temporary heating, cooling, ventilation, and/or timely completion of the project. VFD / disconnects shall include a circuit breaker disconnect with a through-the-door interlocking handle and shall be lockable. The VFD package shall also include:

- a) Electronic manual speed control
- b) Hand-Off-Auto (H-O-A) selector switch
- c) Inlet fuses to provide maximum protection against inlet short circuit
- d) Current limited stall prevention
- e) Auto restart after momentary power loss
- f) Speed search for starting into rotating motor
- g) Anti-windmill w/DC injection before start
- h) Phase-to-phase short circuit protection
- i) Ground fault protection

Units with factory-mounted controls shall include power wiring from the VFD panel to the control system transformers, binary output on/off wiring, analog output-speed-signal wiring, and all interfacing wiring between the VFD and the direct digital controller. The VFD shall be UL508C listed and CSA certified and conform to applicable NEMA, ICS, NFPA, & IEC standards.

Motor Wiring Conduit

The fan motor wiring shall be factory-wired to the unit-mounted starter/disconnect, variable frequency drive, or external motor junction box within flexible metal conduit of adequate length so that the fan vibration isolation, if applicable, will not be restricted. *Refer to the Product Data section for fans with motor wiring conduit.*

Combination VFD / Disconnect w/ Bypass

A combination Variable Frequency Drive (VFD) / disconnect shall be provided when variable air volume control is required for fan operation. Whether for single fan, dual fan, or fan array applications, a single VFD shall be provided to ensure proper operation and to optimize operating life. Each VFD / disconnect shall be properly sized, factory mounted in a full metal enclosure, wired to the fan motor, and commissioned to facilitate temporary heating, cooling, ventilation, and/or timely completion of the project. VFD / disconnects shall include a circuit breaker disconnect with a through-the-door interlocking handle and shall be lockable. The VFD package shall also include:

- a) Electronic manual speed control
- b) Hand-Off-Auto (H-O-A) selector switch
- c) VFD/OFF/Bypass selector switch
- d) Bypass Relays
- e) Bypass Circuitry
- f) Inlet fuses to provide maximum protection against inlet short circuit
- g) Fused control transformer
- h) Manual reset overloads
- i) 120V control transformer with fusing and secondary grounding
- j) Current limited stall prevention
- k) Auto restart after momentary power loss
- l) Speed search for starting into rotating motor
- m) Anti-windmill w/DC injection before start
- n) Phase-to-phase short circuit protection
- o) Ground fault protection

A dedicated variable frequency drive transformer will be provided to power the VFD/Off/Bypass circuitry. Units with factory-mounted controls shall include power wiring from the VFD panel to the control system transformers, binary output on/off wiring, analog output-speed-signal wiring, and all interfacing wiring between the VFD and the direct digital controller. The VFD shall be UL508C listed and CSA certified and conform to applicable NEMA, ICS, NFPA, & IEC standards.

Fan Section Damper Actuators

Spring return actuators shall be mounted as normally closed on the fan exhaust air damper.

Dampers

Dampers within the fan section shall modulate the volume of exhaust air. The dampers shall be of double-skin airfoil design with metal, compressible jamb seals and flexible blade-edge seals on all blades. The blades shall rotate on stainless-steel sleeve bearings. The dampers shall be rated for a maximum leakage rate of 3 cfm/ft² at 1 in. w.g. complying with ASHRAE 90.1 maximum damper leakage. All leakage testing and pressure ratings shall be based on AMCA Standard 500-D.

Variable Volume Control System

Factory-mounted direct-digital control (DDC) systems shall be engineered, mounted, wired, and tested by the air handler manufacturer to reduce installed costs, improve reliability, and save time at unit startup. Each control system shall be fully functional in a stand-alone mode or may be tied to a building automation system with a single pair of twisted wires. All factory-mounted controls shall be covered by the air handler manufacturer's standard warranty.

Field Programmable UC600

A dedicated programmable direct-digital controller with the appropriate point capabilities shall be unit mounted on the air handling unit. Point expansion is accomplished using expansion modules with the capacity to add points in 4 to 18 point increments. The controller will utilize the latest graphical programming methods that are easy to learn, powerful, self-documenting. Graphical programming will help minimize programming costs, aid in program troubleshooting, and save time at unit startup. Programmable controllers optimize unit control flexibility. 120V power wiring to the control system transformer, which provides 24VAC to the DDC controller and end devices, shall be customer supplied. The UC600 communicates using the BACnet protocol.

Unit Mounted Control System

All factory installed end devices shall be wired and terminated to the DDC controller.

Outside Air Sensor

A 10,000 ohm at 77°F thermistor-type sensor shall be provided for field mounting and wiring.

CO2 Sensor

A CO2 sensor utilizing Non-Dispersive Infrared (NDIR) Single-Beam Dual-Wavelength technology shall be provided for long-term stable performance, compact size, simplicity and reliability. Available in wall mount or duct mount.

Relative Humidity Sensor

A relative humidity sensor utilizing a polymer capacitive sensing element shall be provided for superior performance and longevity. The polymer capacitive element has excellent recovery from saturation compared to other humidity sensing technologies. Available in 3% or 5% accuracy.

Face and Bypass Damper

Dampers shall be provided as scheduled to divert airflow around the coil. Dampers shall be of doubleskin airfoil design with metal, compressible jamb seals and flexible blade-edge seals on all blades. The blades shall rotate on stainless-steel sleeve bearings. Dampers are arranged in an opposed-blade configuration and mechanically linked with jackshafts. The dampers shall be rated for a maximum leakage rate of 5 cfm/ft² at 1 in. w.g. All leakage testing and pressure ratings shall be based on AMCA Standard 500-D.

Damper Actuator

Non-spring return actuators shall be mounted as indicated to control the face damper operation.

HUMIDIFIER SECTION (Direct Steam)

Humidifier section shall be provided with a humidifier panel designed for building steam. Humidifier panel shall include stainless steel construction of all wetted parts including the integrated header/seperator and multiple tube dispersion assembly. Tube-to-header joints shall consist of welded stainless steel. Humidifier shall provide a uniform steam discharge. Humidifiers shall be provided with a control valve, inverted bucket steam trap, wye strainer, and two float and thermostatic steam traps shipped loose for field installation. All pipe connections shall be made from one side of the air handler.

Lifting Instructions

The air handling units must be rigged, lifted, and installed in strict accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07G-EN). The units are also to be installed in strict accordance with the specifications. Units may be shipped fully assembled or disassembled to the minimum functional section size in accordance with shipping and job site requirements. Indoor units shall be shipped on an integral base frame (variable from the standard 2.5" to 8" height) for the purpose of mounting units to a housekeeping pad and providing additional height to properly trap condensate from the unit. The integral base frame may be used for ceiling suspension, external isolation, or as a housekeeping pad. Indoor sizes 3 to 30 will also be shipped with a shipping skid designed for forklift transport. Refer to the unit As-Built or Product Data section of the submittal for the base frame height of each unit. All units will be shipped with an integral base frame designed with the necessary number of lift points for safe installation. All lifting lugs are to be utilized during lift. The lift points will be designed to accept standard rigging devices and be removable after installation. Units shipped in sections will have a minimum of four points of lift.

Trane Performance Climate Changer Air Handler

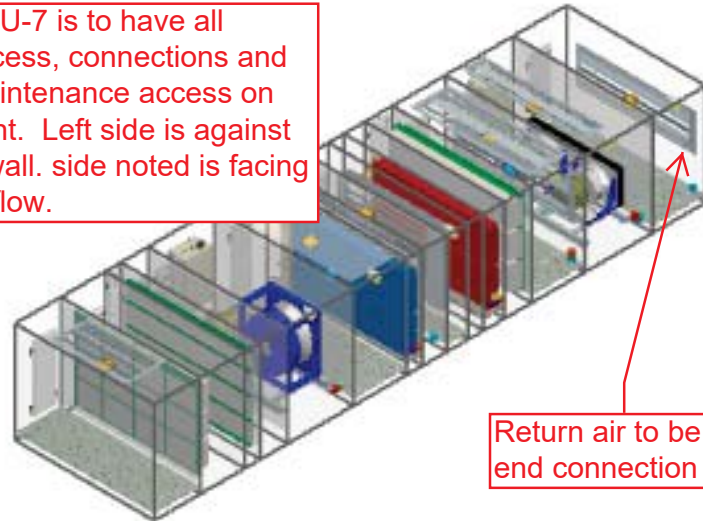
Unit Overview - AHU_7

Application	Unit Size	External Dimensions			Weight		
		Height	Width	Length	Installed	Rigging	
Indoor unit	57	91.000	125.500	497.000	16192.7 lb	15916.7 lb	
Quantity of Shipping Sections		Largest Ship Split			Heaviest Ship Split		
		Height	Width	Length			
7 pieces		91.000 in	125.500 in	95.500 in	4382.8 lb		
Supply Fan				Return/Exhaust Fan			
Airflow	30000 cfm	Total Static Pressure	6.169 in H2O	Airflow	30000 cfm	Total Static Pressure	2.481 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit

AHU-7 is to have all access, connections and maintenance access on right. Left side is against a wall. side noted is facing airflow.



Return air to be end connection

Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
Circuit number 1 Single point power	575/3/60	87.21 A	100.21 A	150.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
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Unit Controls

Factory Controls Package	Variable volume
Controller Type	UC600
Controller mounting	Unit mounted
Controller location	Left
PPS Factory programmed	No

Warranty

Warranty section	Extd. warranty
Delayed startup warranty	12/24
Parts - whole unit	6 months additional
Labor - 1st year	1st year labor warranty

Air mixing section - Position: 1

Openings								
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Hood
Back	Return	Opposed blade damper	30000 cfm	1317 ft/min	22.79 sq ft	0.111 in H2O	N/A	No
Section Options								
Door Location				Left				
Marine Light				Marine LED light				
Flooring				Treadplate				

Return fan section - Position: 2

Fan Data				Motor Data			
Wheel Diameter/Type/Class		27in. dd plenum, full width, M press		Power / Fan		15 hp	
Fan Quantity		2		Voltage		575/3	
Discharge Location		Front top		Speed		1800	
Motor Location		Left side drive		Class		NEMA premium compliant TEFC	
Blades		Higher efficiency		Efficiency		92.99 %	
Drive Service Factor		Direct drive		Part Load Efficiency		88.11 %	
Fan Performance				Fan Section Options			
Airflow		30000 cfm		Backdraft Dampers		None	
Total Static Pressure		2.481 in H2O		Fan wheel Balance		Inverter balance with SGR	
Total Brake Power		22.945 hp		Door Location		Left	
Operating Speed		1614 rpm		Test Port		Left side	
Static Efficiency		51.15 %		Window		Left - thermal	
Motor Interface Options				Door Guard		Yes	
Selection Type		VFD		Marine Light		Marine LED light	
Voltage		575/3					
Mounting Location		External mounting					
Motor Wire In Circuit		Motor wiring conduit					
Fan Discharge Options							
Face	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Exhaust Hood
Top Face Feature	Opposed blade damper	30000 cfm	2101 ft/min	14.28 sq ft	0.413 in H2O	N/A	N/A

Return fan Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
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Air mixing section - Position: 3

Openings								
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Hood
Back	Return	Opposed blade damper	30000 cfm	1317 ft/min	22.79 sq ft	0.293 in H2O	N/A	No
Top	Outside	Opposed blade damper	5000 cfm	219 ft/min	22.79 sq ft	0.003 in H2O	N/A	N/A
Section Options								
Door Location				Left				
Marine Light				Marine LED light				
Flooring				Treadplate				

Filter section - Position: 4

Primary Filter								
Type	Frame	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size
Customer supplied	Bag/cartridge filter frame	30000 cfm	60.00 sq ft		Mid-life		15.00	24x24
Prefilter								
Type	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size	
Filter Section Options								
Door Location					Left			
Test Port					Left side			

Heating coil section - Position: 5

Coil Construction		Coil Performance	
Model	Hot water - 5W	Capacity	
Rows	1	Total	896.28 MBh
Tube Diameter	5/8in. tube diameter (15.875 mm)	Air	
Tube Mat/Wall Thickness	.020" (0.508 mm) copper tubes	Flow	30000 cfm
Fin Spacing	80 Per Foot	Entering Dry Bulb	58.00 F
Fin Material	Aluminum fins	Leaving Dry Bulb	85.55 F
Fin Type	Prima flo H (Hi efficient)	Pressure Drop	0.079 in H2O
Face Area	56.50 sq ft	Face Velocity	531 ft/min
Casing	Galvanized	Fluid	
Coating	None	Flow	89.51 gpm
Rigging Weight	226.1 lb	Entering	180.00 F
Installed Weight	297.1 lb	Leaving	160.00 F
Coil Section Options		Pressure Drop	6.21 ft H2O
Extended Drain and Vent	Extended drain and vent	Tube Velocity	4.12 ft/s
Drain Pan	Stainless steel drain pan	Type	Water
Drain Connection	Left	Concentration	100.00 %
Service Panel	Standard panels	Fouling Factor	0.00025 hr-sq ft-deg F/Btu
Door Location	None	Volume	8.52 gal
		AHRI 410 Classification	
		AHRI 410 Classification	AHRI ACHC Certified

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Humidifier section - Position: 6

Construction		Performance	
Steam Source	Building steam	Airflow	30000 cfm
Steam Pressure	15.00 psig	Entering Dry Bulb	78.00 F
Connection Location	Left	Entering Relative Humidity	25.00 %
Required Orifice Size	7/8"	Leaving Relative Humidity	50.00 %
Valve Pipe Connection Size	1 1/2"	Steam Rate	717.43 lb/hr
Options		Air Temperature Gain	1.56 F
Drain Connection/Material	Stainless steel drain pan	Condensation Loss	53.31 lb/hr
Drain Connection	Left		
Service Panel	Standard panels		

Access/blank/turning section - Position: 7

Options	
Section Length	19.000 in
Door Location 1	Left
Test Port	Left side
End Of Unit Door Location	None
Marine Light	Marine LED light
Flooring	Treadplate

Face and bypass - Position: 8

Face Damper		
Airflow	Area	Pressure Drop
15000 cfm	51.53 sq ft	0.015 in H2O



Bypass Damper		
Airflow	Area	Pressure Drop
15000 cfm	10.11 sq ft	0.502 in H2O

Cooling coil section - Position: 9

Coil Construction		Coil Performance	
Model	Chilled water - UU	Capacity	
Rows	4	Total	1270.99 MBh
Tube Diameter	1/2in. tube diameter (12.7 mm)	Sensible	893.32 MBh
Tube Mat/Wall Thickness	.016" (0.406 mm) copper tubes	Air	
Fin Spacing	156 Per Foot	Flow	30000 cfm
Fin Material	Aluminum fins	Entering Dry Bulb	82.00 F
Fin Type	Delta flo H (Hi efficient)	Entering Wet Bulb	68.00 F
Face Area	56.89 sq ft	Leaving Dry Bulb	55.00 F
Casing	Stainless steel	Leaving Wet Bulb	54.44 F
Coating	None	Pressure Drop	0.672 in H2O
Turbulators	Yes	Face Velocity	527 ft/min
Rigging Weight	661.7 lb	Fluid	
Installed Weight	866.7 lb	Flow	253.29 gpm
Coil Section Options		Entering	44.00 F
Extended Drain and Vent	Extended drain and vent	Leaving	54.00 F
Drain Pan	Stainless steel drain pan	Pressure Drop	15.29 ft H2O
Drain Connection	Left	Tube Velocity	3.88 ft/s
Service Panel	Standard panels	Type	Water
Door Location	None	Concentration	100.00 %
		Fouling Factor	0.00000 hr-sq ft-deg F/Btu
		Volume	24.51 gal
		AHRI 410 Classification	
		AHRI 410 Classification	AHRI ACHC Certified

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Access/blank/turning section - Position: 10

Options	
Section Length	48.000 in
Door Location 1	Left
Test Port	Left side
End Of Unit Door Location	None
Marine Light	Marine LED light
Flooring	Treadplate

Supply fan section - Position: 11

Fan Data		Motor Data	
Wheel Diameter/Type/Class	44in. belt-drive plenum, M press	Power / Fan	50 hp
Fan Quantity	1	Voltage	575/3
Discharge Location	Front top	Speed	1800
Motor Location	Left side drive	Class	NEMA premium compliant TEFC
Drive Service Factor	1.5 fixed drive	Efficiency	94.50 %
Fan Performance		Fan Section Options	
Airflow	30000 cfm	Backdraft Dampers	None
Total Static Pressure	6.169 in H2O	Fan wheel Balance	Inverter balance with SGR
Total Brake Power	48.241 hp	Door Location	Left
Operating Speed	1012 rpm	Test Port	Left side
Static Efficiency	60.47 %	Window	Left - thermal
Motor Interface Options		Door Guard	Yes
Selection Type	VFD w/ bypass	Marine Light	Marine LED light
Voltage	575/3		
Mounting Location	External mounting		
Motor Wire In Circuit	Motor wiring conduit		

Supply fan Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
------------	---------	-----	-----	-----	----	----	----	----

Controls only section section - Position: 12

Controller Door	Left
------------------------	------

Filter section - Position: 13

Primary Filter								
Type	Frame	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size
Customer supplied	2in. filter frame	30000 cfm	Delete section 13.				1.00	16x20
						4.00	16x25	
						3.00	20x20	
						12.00	20x25	
Filter Section Options								
Door Location				Left				
Test Port				Left side				

Filter section - Position: 14

Primary Filter								
Type	Frame	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size
Customer supplied	HEPA filter frame	30000 cfm	57.00 sq ft		Mid-life		3.00 9.00	24x24 24x30
Filter Section Options								
Door Location				Left				
Test Port				Left side				

Air mixing section - Position: 15

Openings								
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Hood
Top	Supply	High velocity parallel damper	30000 cfm	2095 ft/min	14.32 sq ft	0.727 in H2O	N/A	N/A
Section Options								
Door Location				Left				
Flooring				Treadplate				

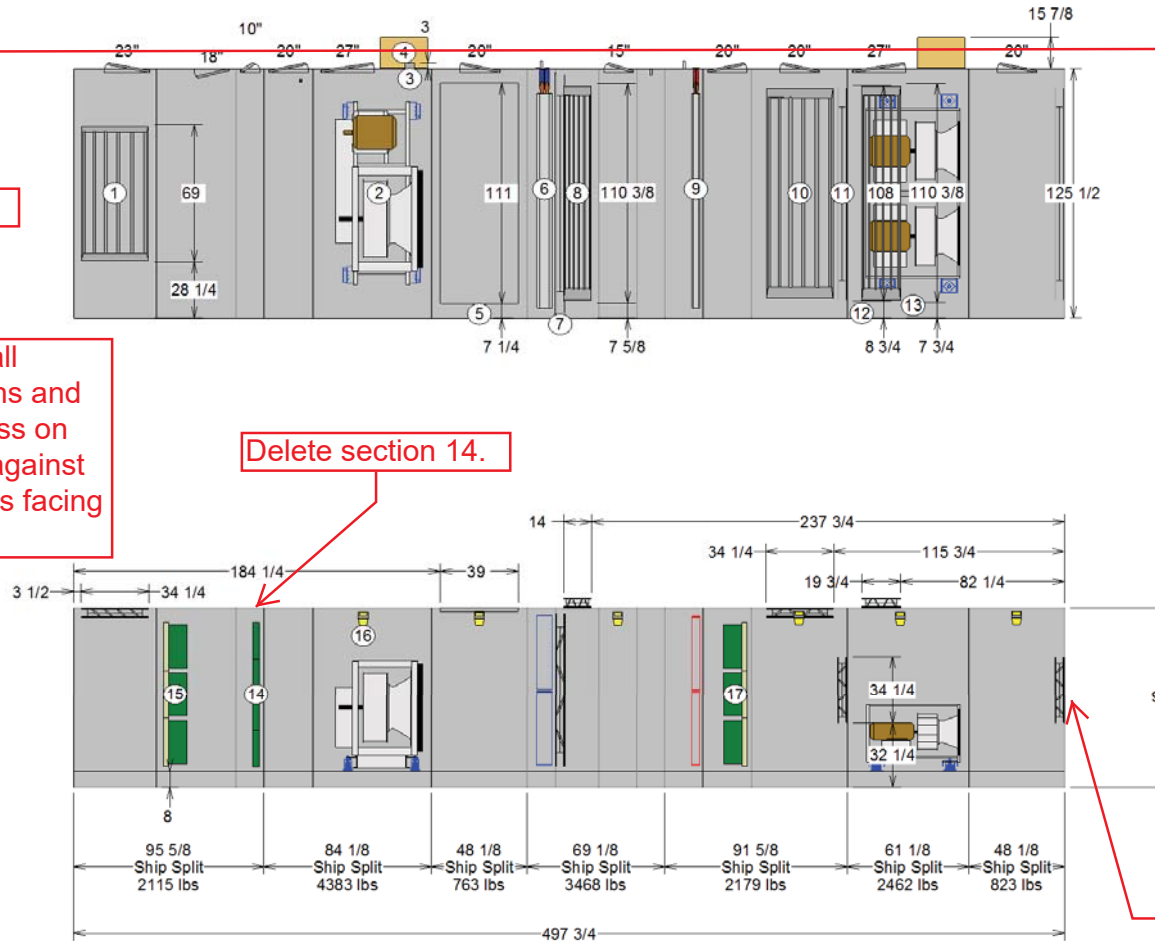


CSAA
Quantity: 1
Tags: AHU_7

Wall

AHU-7 is to have all access, connections and maintenance access on right. Left side is against a wall. side noted is facing airflow.

Delete section 14.



- 1 Damper top-parallel blade
69 x 34.25
 - 2 Plenum fan - 44in.
belt-drive plenum, M press
Supply fan 50 hp 575/3
 - 3 Light switch and/or
receptacle LH
 - 4 External VFD LH (2)
 - 5 Opening top
111 x 39
 - 6 Cooling coil - 4 Coil type
UU (3)
 - 7 Face damper front
79 x 121.5
 - 8 Bypass damper top
110.4 x 14
 - 9 Heating coil - 1 Coil type
5W (3)
 - 10 Damper top-opposed
blade
108 x 34.25
 - 11 Damper back-opposed
blade
34.25 x 108 (2)
 - 12 Damper top
110.375 x 19.75
 - 13 Plenum fan - 27in. dd
plenum, full width, M press
Return fan 15 hp 575/3
 - 14 Flat filters - Customer
supplied
 - 15 HEPA filters - customer
supplied
 - 16 Marine light
 - 17 Cartridge filters - Customer
supplied
- Doors
18 width x 58 height
23 width x 61 height
10 width x 79 height
20 width x 61 height
27 width x 61 height
15 width x 61 height
20 width x 79 height

return air on AHU-7
end connection

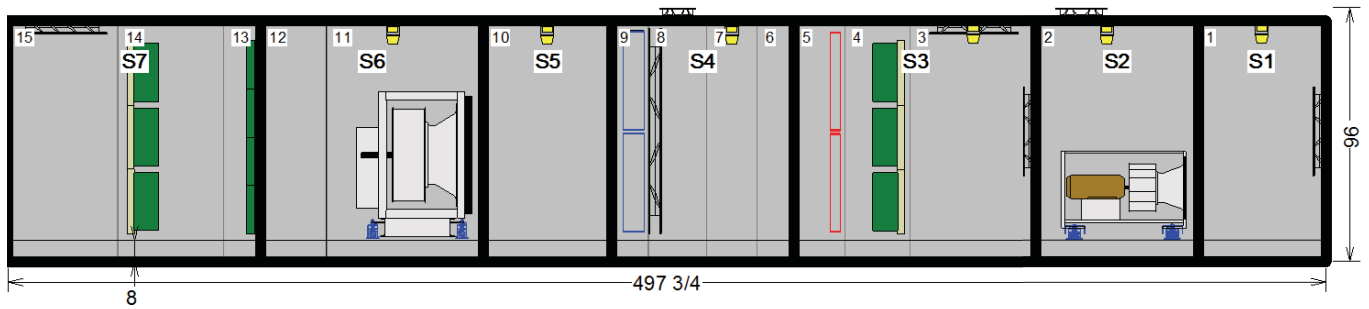
For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length shown.

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7



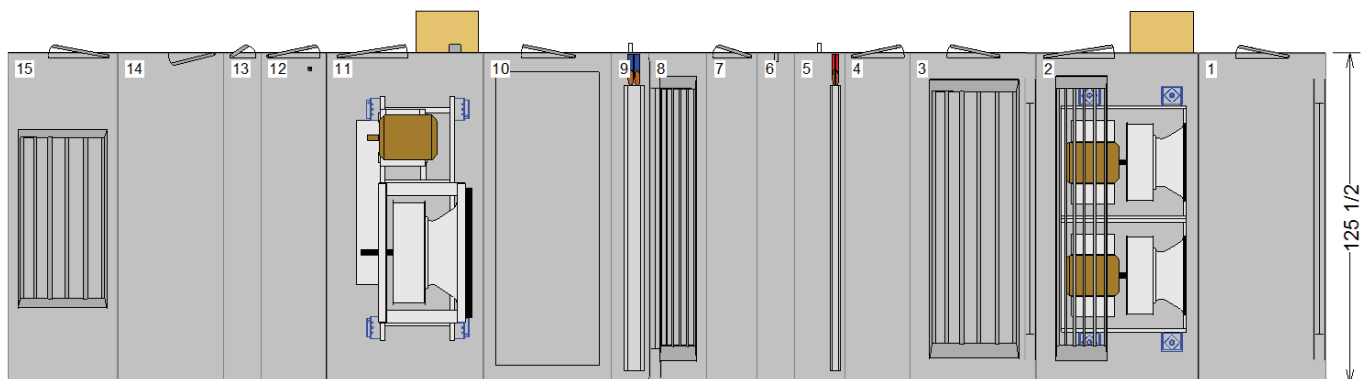
Performance Climate Changer
Air Handlers



Overall Elevation View: Right - Shipping splits indicated by bold outline. - Measurements in inches

For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length sh

Pos #	Module	Length	Weight	Pos #	Module	Length	Weight
1	Air mixing section	48 1/8	823.37	14	Filter section	40	810.08
2	Fan section	61 1/8	2462.14	15	Air mixing section	41 1/2	882.55
3	Air mixing section	48 1/8	870.73	Installed Unit Weight 16192.72 lbs			
4	Filter section	24 1/2	580.52				
5	Coil section	19 1/8	727.82				
6	Humidification section	14 1/8	931.96				
7	Access section	19	359.49				
8	Face and bypass	22	934.64				
9	Coil section	14 1/8	1241.66				
10	Access section	48 1/8	762.96				
11	Fan section	59 5/8	3678.08				
12	Controls section	24 5/8	704.76				
13	Filter section	14 1/8	421.96				



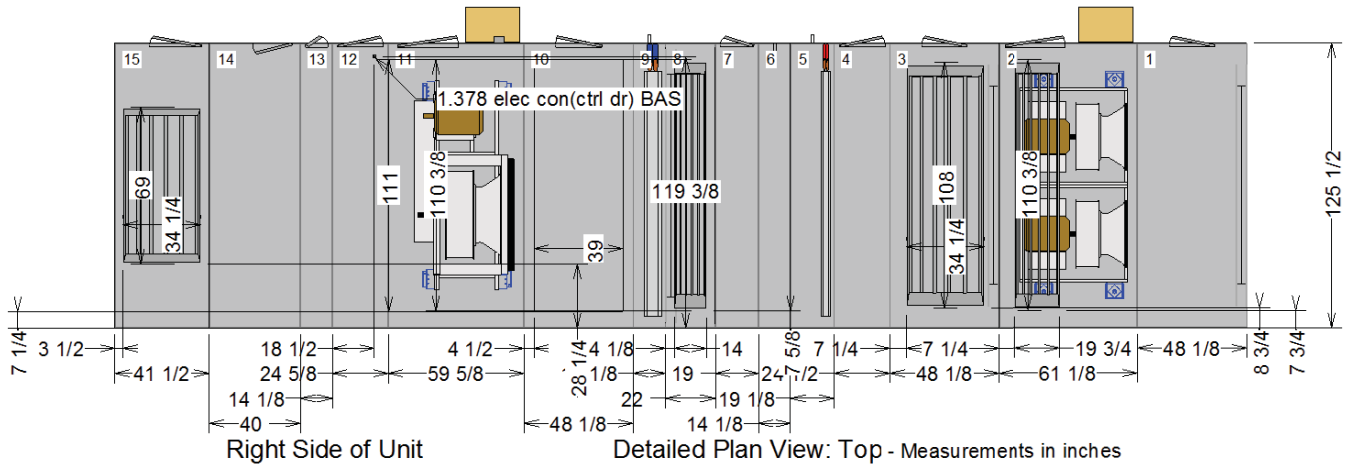
Basic Overall Plan View: Top - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

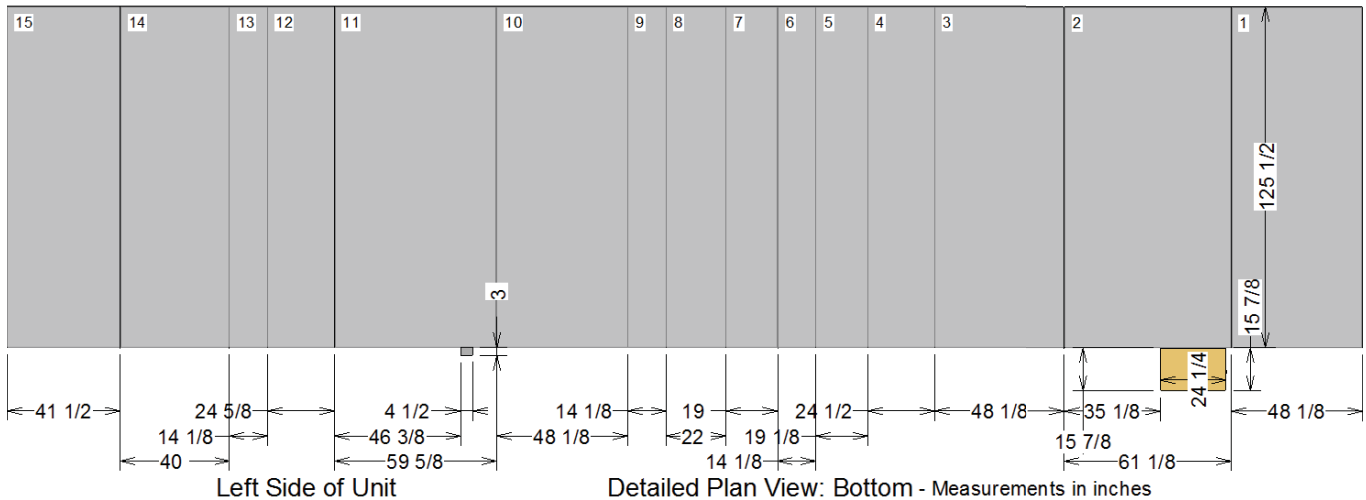
Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers



AHU-7 is to have all access, connections and maintenance access on right. Left side is against a wall. side noted is facing airflow.

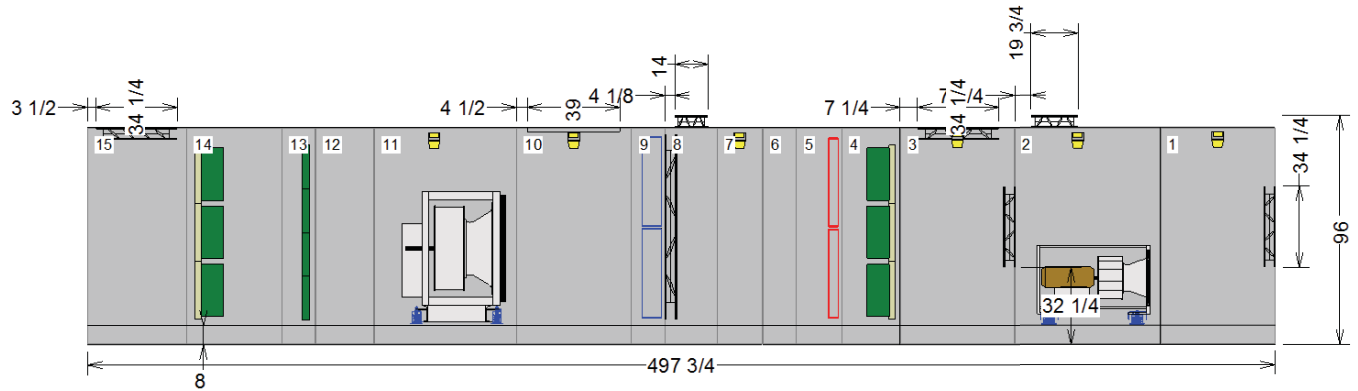


OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

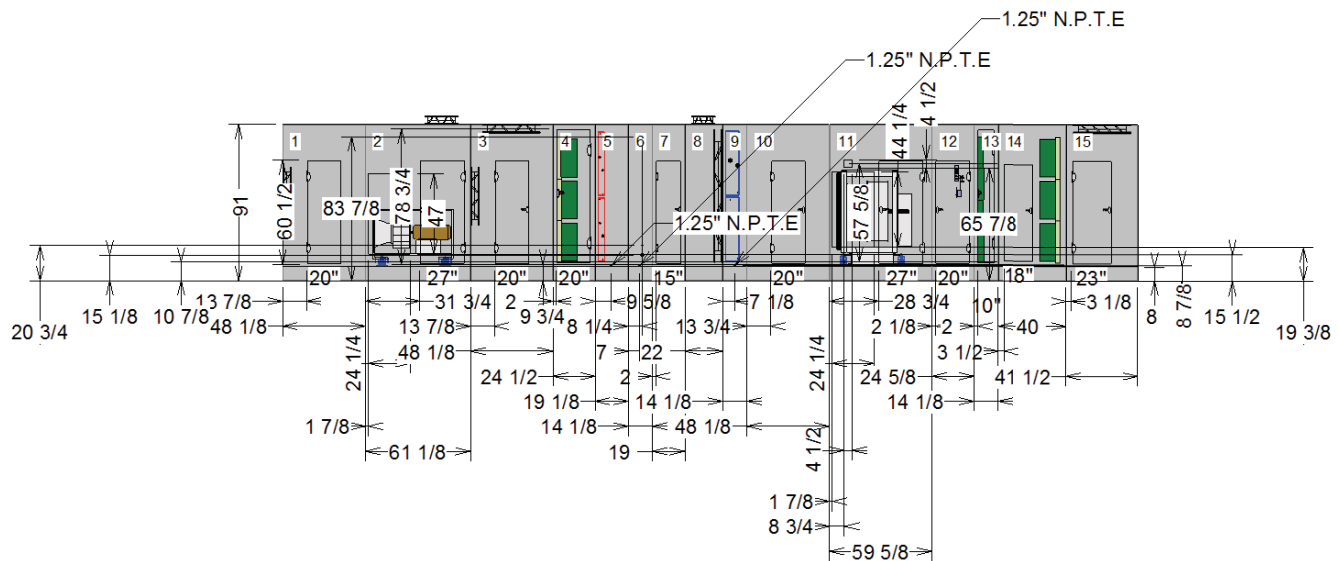
Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers



Detailed Elevation View: Right - Measurements in inches



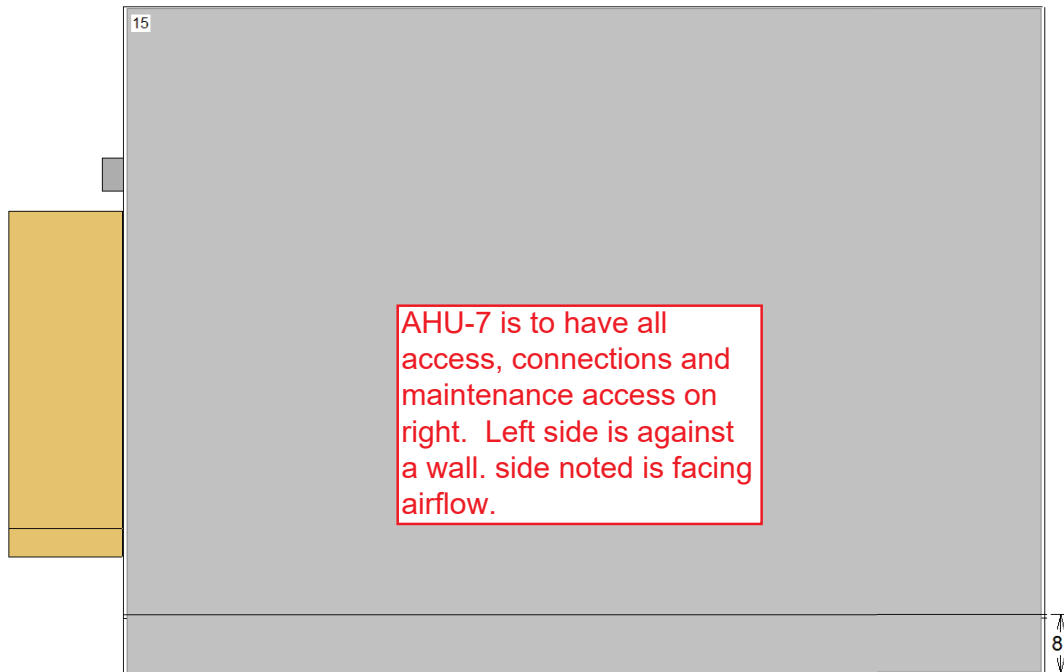
Detailed Elevation View: Left - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

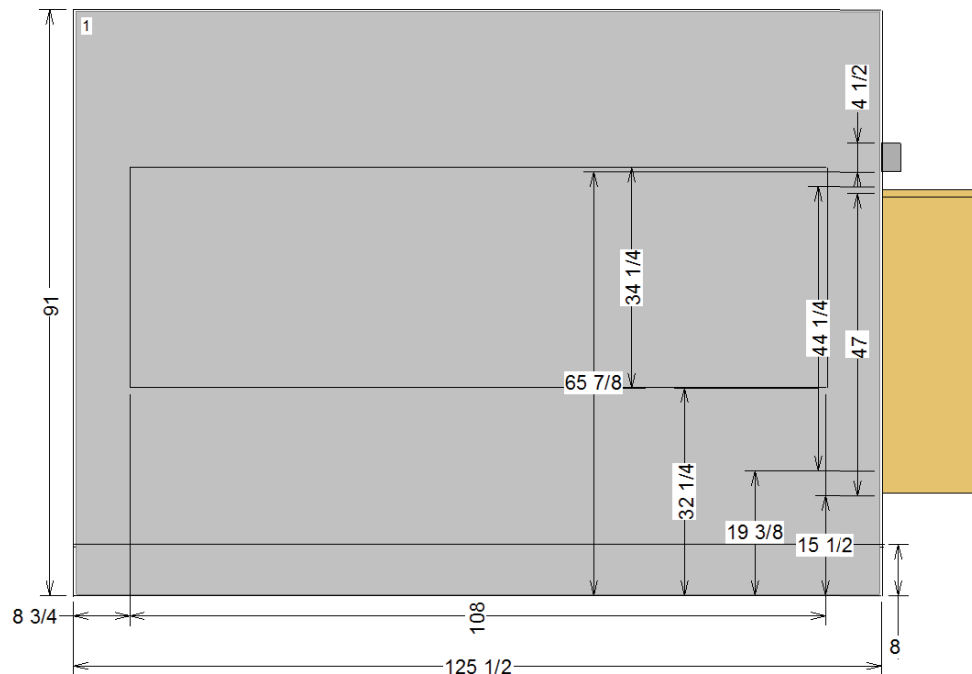
Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers



Detailed Elevation View: Front - Measurements in inches



Detailed Elevation View: Back - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

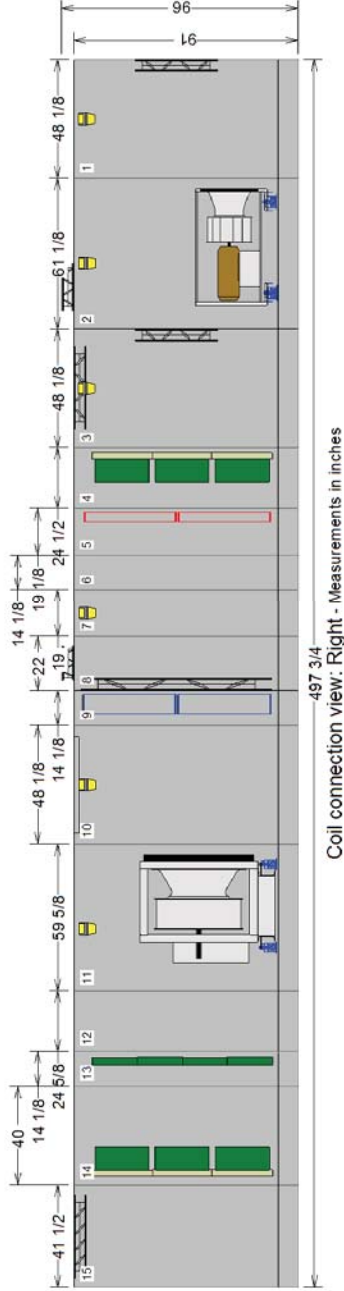
Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers



CSAA
Quantity: 1
Tags: AHU_7



Coil connection view: Right - Measurements in inches

NPTI : National Pipe Thread Internal Connection
NPTE : National Pipe Thread External Connection

Horizontal IFB coil header connections extended outside the unit casing, Vertical coil headers do not.
Contractor responsible for extending header connection outside unit casing on Vertical IFB coils. See Product Data for IFB coil type by unit tag

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

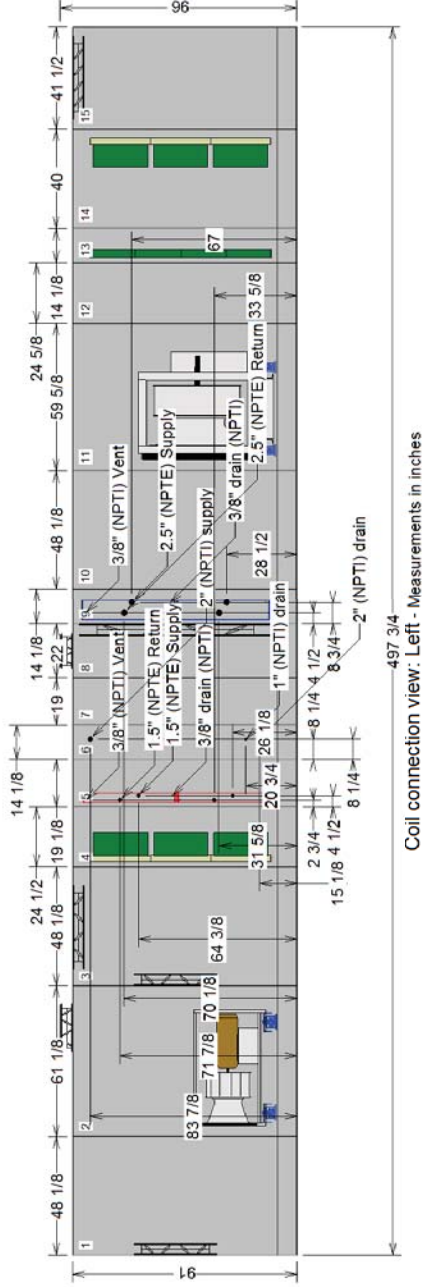
Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7



Performance Climate Changer
Air Handlers



CSAA
Quantity: 1
Tags: AHU_7



Coil connection view: Left - Measurements in inches

NPTI : National Pipe Thread Internal Connection
NPTE : National Pipe Thread External Connection

Horizontal IFB coil header connections extended outside the unit casing, Vertical coil headers do not.
Contractor responsible for extending header connection outside unit casing on Vertical IFB coils. See Product Data for IFB coil type by unit tag

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_7
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7

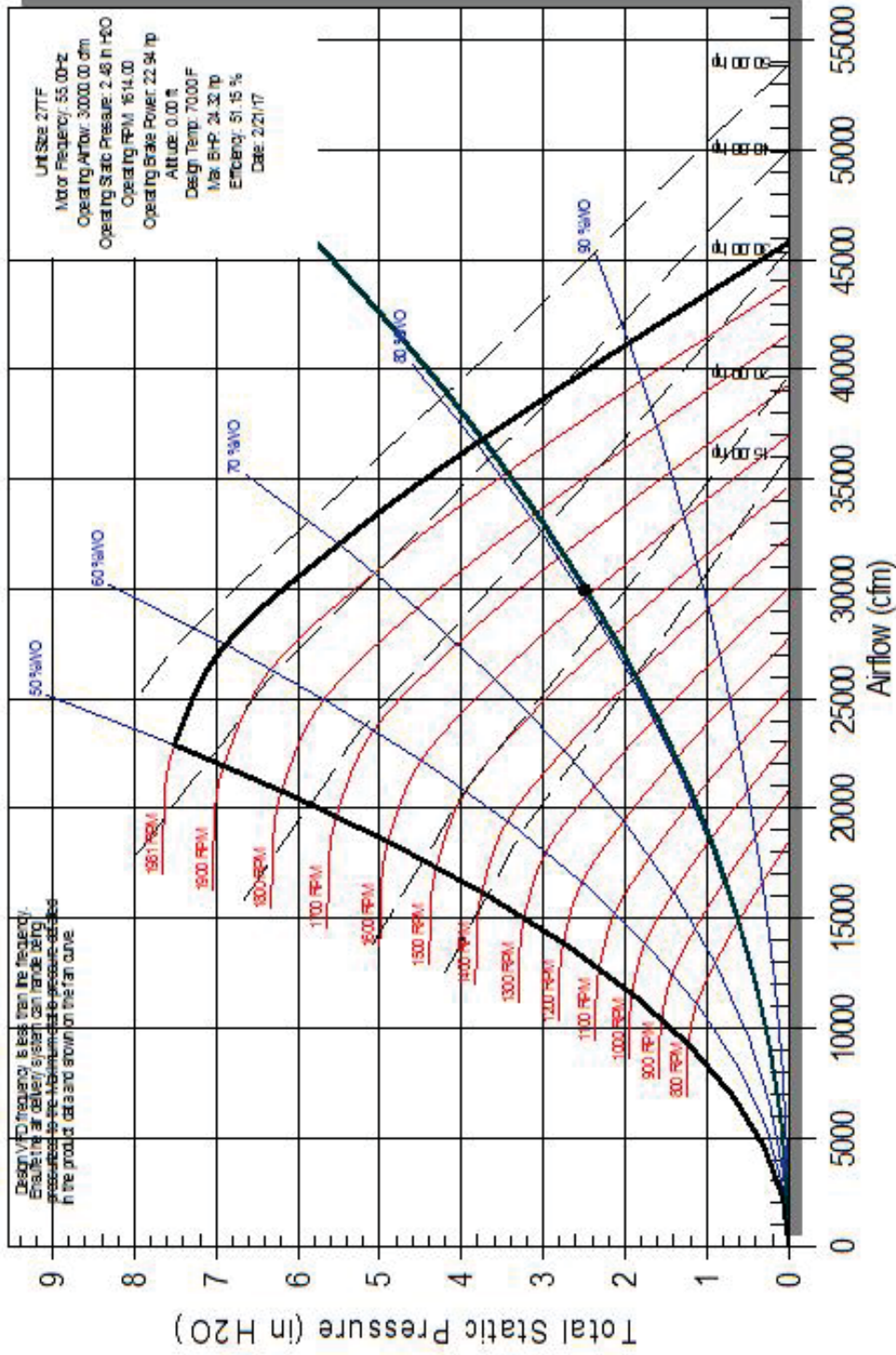




CSAA
Quantity: 1
Tags: AHU_7

AHU-7 - Return

Size 57 DDP 27 inch AF M Press2x1 array 100% Width 9 blades

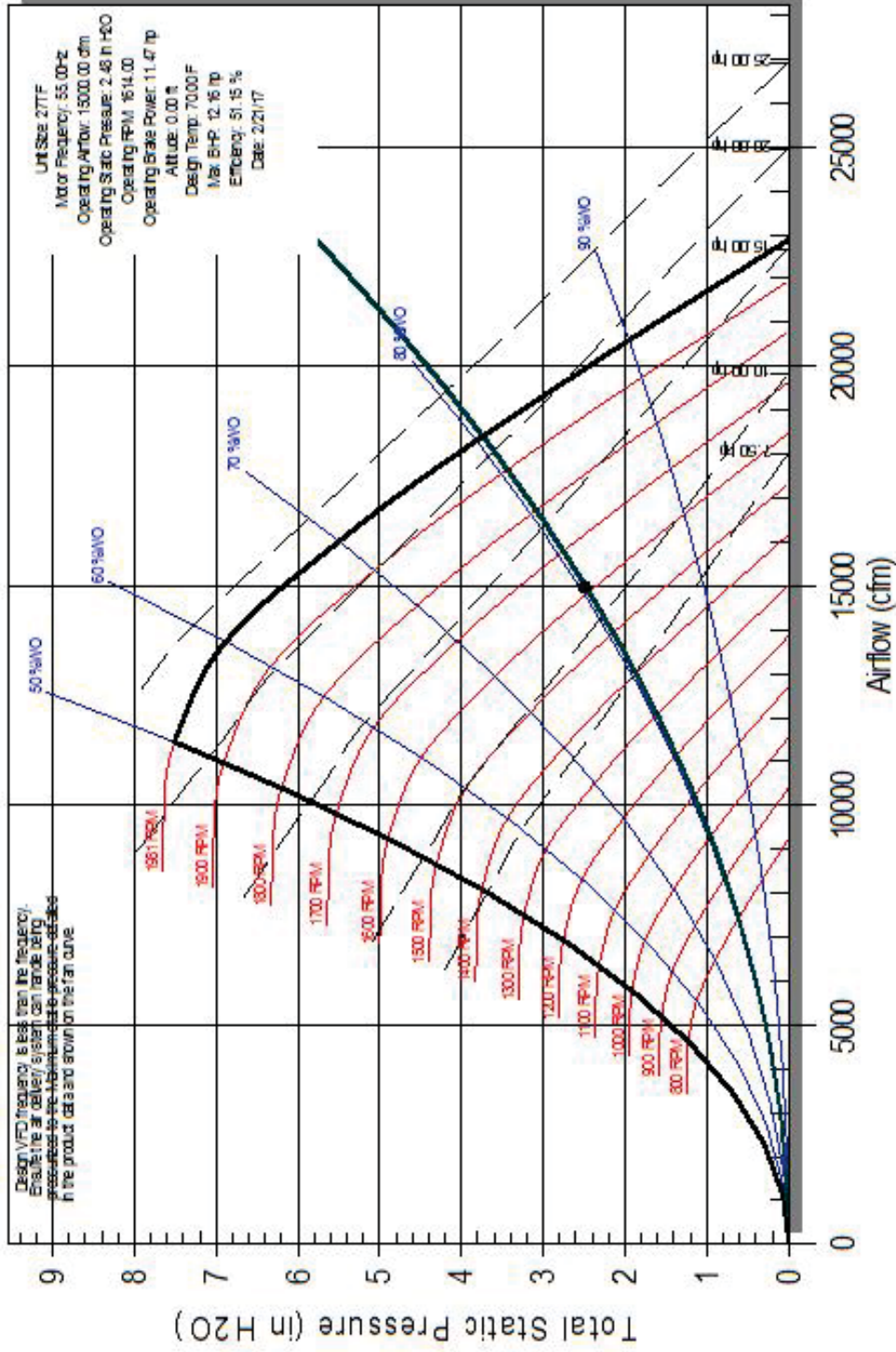




CSAA
Quantity: 1
Tags: AHU_7

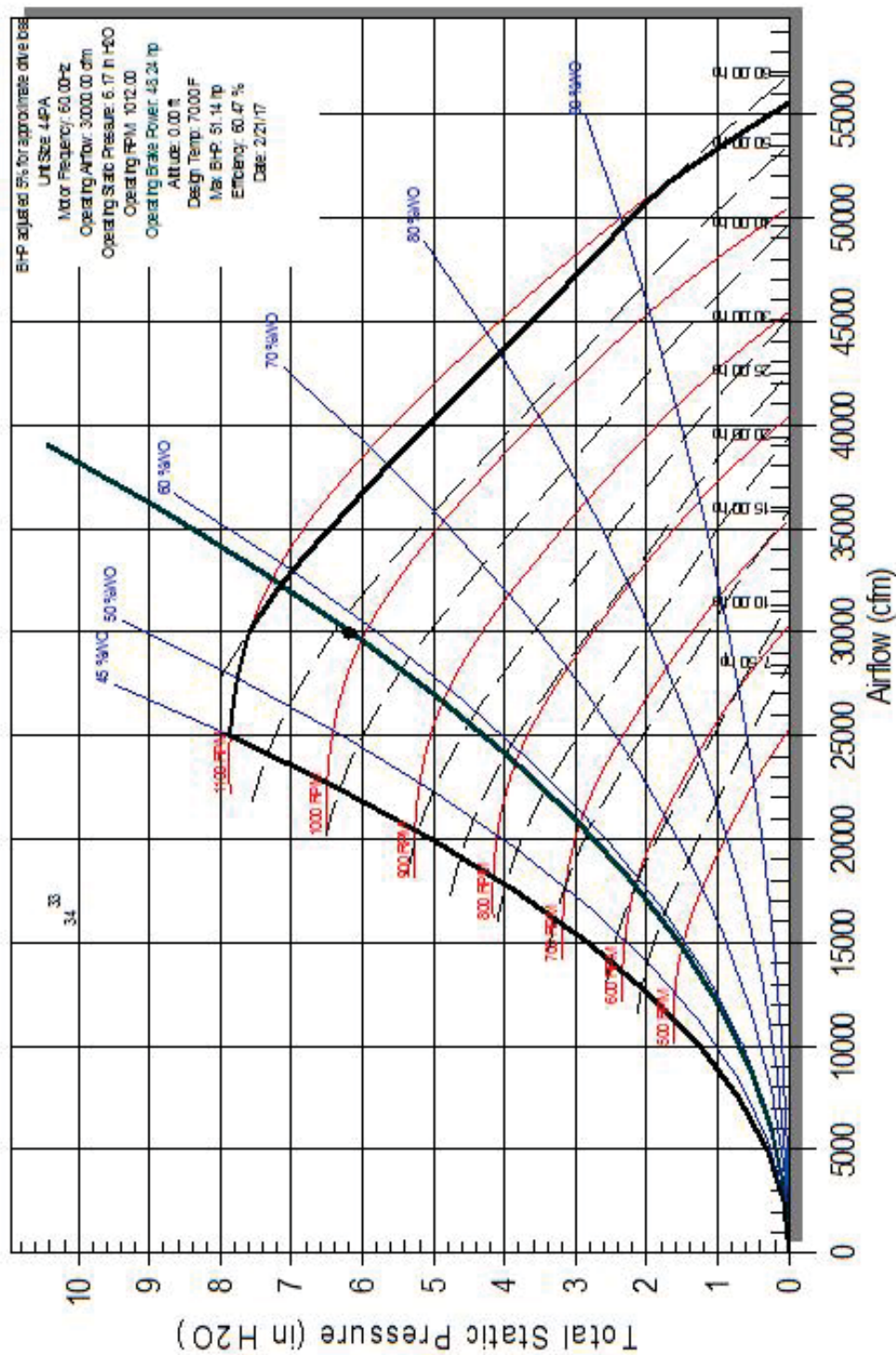
AHU-7 - Return

Size 57 DDP 27 inch AF M Press2x1 array 100% Width 9 blades - Single Fan





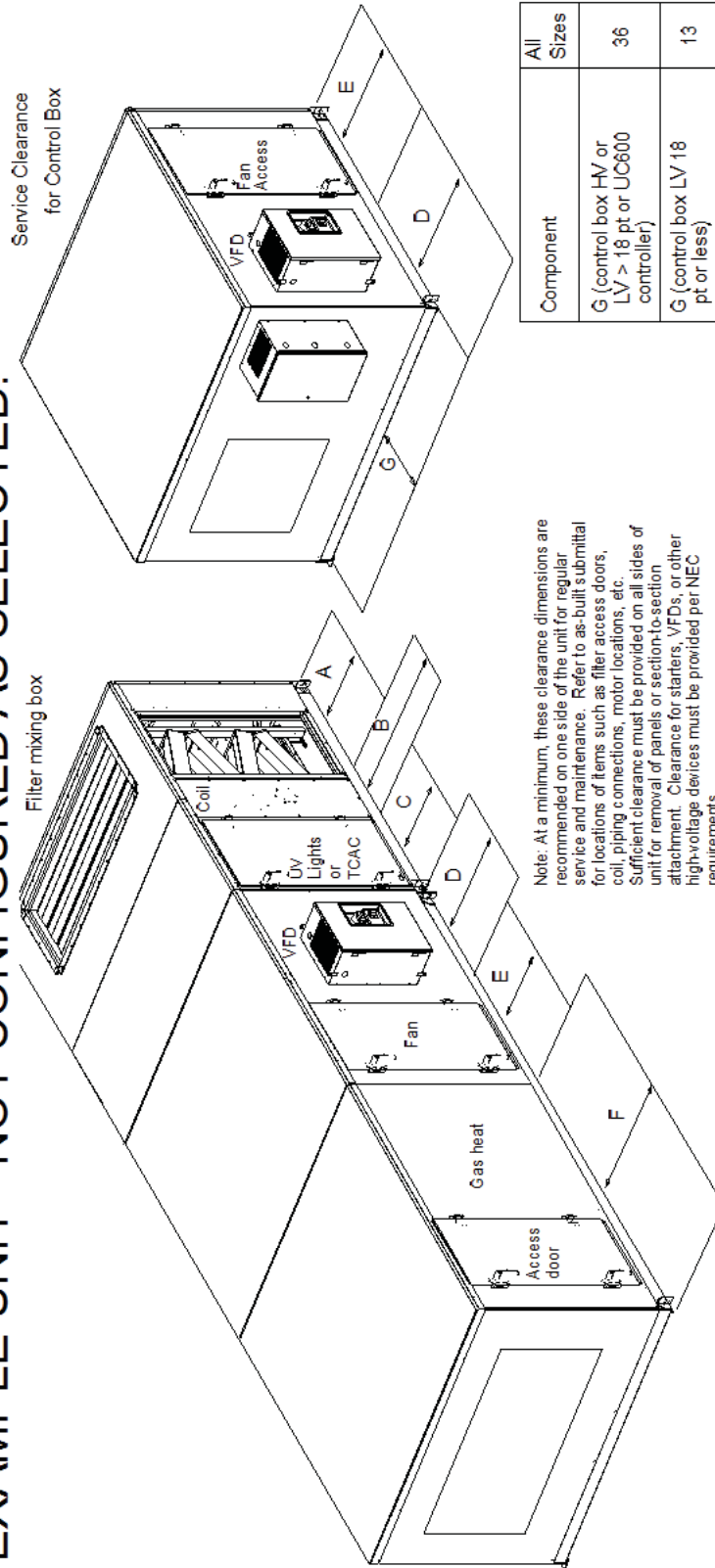
AHU-7 - Supply



Base Detail



EXAMPLE UNIT - NOT CONFIGURED AS SELECTED.

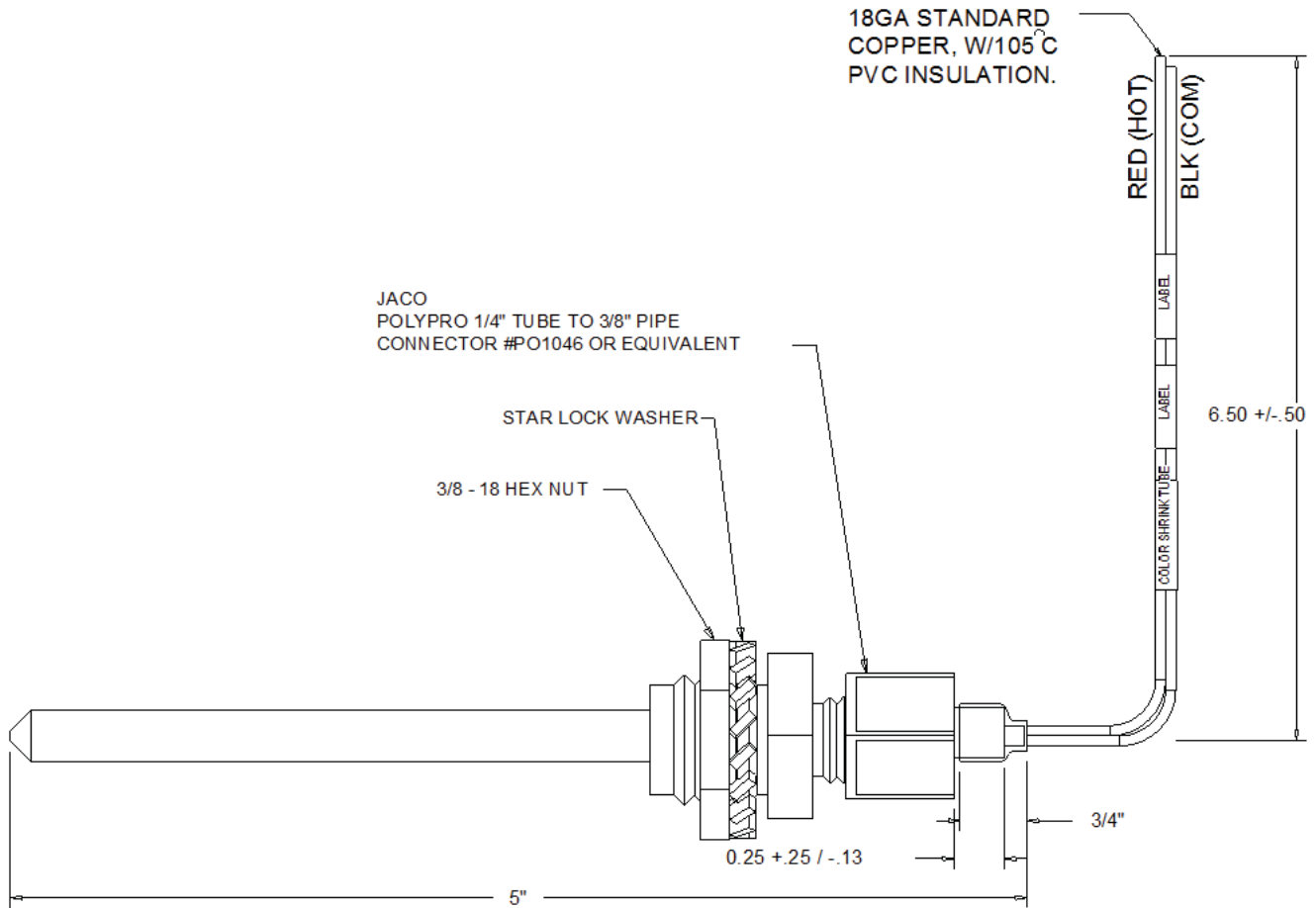


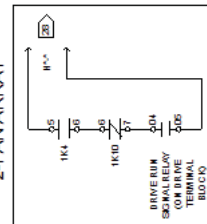
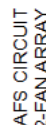
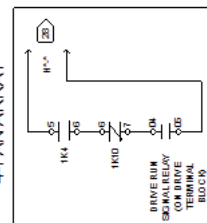
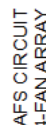
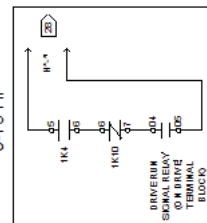
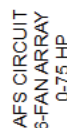
Note: At a minimum, these clearance dimensions are recommended on one side of the unit for regular service and maintenance. Refer to as-built submittal for locations of items such as filter access doors, coil, piping connections, motor locations, etc. Sufficient clearance must be provided on all sides of unit for removal of panels or section-to-section attachment. Clearance for starters, VFDs, or other high-voltage devices must be provided per NEC requirements.

Component	All Sizes	3	4	6	8	10	12	14	17	21	21 TALL	25	25 TALL	30	30 TALL	35	35 TALL	40	40 TALL	50	50 TALL	57	57 TALL	66	80	100	120
A (filter)		48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	58
B (coil, humidifier)		48	59	59	66	77	82	87	87	95	77	95	77	109	87	115	96	128	96	141	110	141	110	156	156	170	197
B (staggered coil)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	N/A	67	N/A	76	N/A	80	N/A	88	N/A	96	N/A	96	N/A	105	105	113	129
C (UV Lights)		48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	58
C (TCAC)		43	59	59	63	75	81	83	83	58	75	58	75	83	83	75	59	83	83	83	83	83	83	83	83	75	83
D (External Starter, VFD, LV box or Overload box)		61	61	61	61	61	61	61	61	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
D (Internal Starter or VFD)		48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
E (fan)		48	48	48	48	51	54	58	61	60	51	66	51	66	58	66	60	70	66	77	66	77	66	93	101	101	101
F (Gas Heat Ext Vestibule)		N/A	N/A	89	90	108	100	100	105	115	N/A	115	N/A	118	N/A	136	N/A	140	N/A	156	N/A	156	N/A	170	179	180	N/A
F (Gas Heat Int Vestibule)		N/A	N/A	56	63	74	79	84	84	92	N/A	92	N/A	106	N/A	112	N/A	125	N/A	138	N/A	138	N/A	153	153	167	194

Outside Air Sensor

EXT	SENSOR RATING	BETA (0°C TO 50°C)	SHRINK TUBE COLOR	SENSOR
01	10,000 Ω TYPE II	3892°K	YELLOW	THERMISTOR



[illegible]

VIB INFO		H IF		CLASS	
FREQ	VOLTRFE	IF	PH		
1140 1141 1142	400	0	1FACC-5	00	
		1	1FACC-6	00	
		2	1FACC-15	00	
		3	1FACC-30	00	
		4	1FACC-30	00	
		5	1FACC-30	00	
		6	1FACC-30	00	
		7	1FACC-30	00	
		8	1FACC-30	00	
		9	1FACC-30	00	
1143 1144 1145	975	0	1FACC-5	00	
		1	1FACC-6	00	
		2	1FACC-15	00	
		3	1FACC-30	00	
		4	1FACC-30	00	
		5	1FACC-30	00	
		6	1FACC-30	00	
		7	1FACC-30	00	
		8	1FACC-30	00	
		9	1FACC-30	00	

DEVIC EPREFIX LOCATION CODE	
AREA	LOCATION
1	HIGH VOLTAGE PANEL
2	LOW VOLTAGE PANEL (W/INT SCHEMATIC)
3	AIR HANDLING DEVICES

POISSON VOLTAGE

HAZARDOUS VOLTAGE!
 DO NOT CONNECT ELECTRIC POWER
 INCLUDING REMOTE DIESEL INJECTORS AND
 FOLLOW-UP CUTOFF AND TWO PROCEDURES
 BEFORE RESERVING. INSURE THAT ALL
 DO NOT CAPACITORS HAVE BEEN DISCHARGED
 TO REDUCED VOLTAGE. IN THIS CASE, VARIABLE
 SPEED DRIVE REFER TO, DRIVE
 INSTRUCTIONS FOR THE CAPACITOR DISCHARGE.
 FAILURE TO DO THE ABOVE BEFORE
 SERVICING COULD RESULT IN DEATH OR
 SERIOUS INJURY.

⚠ Avertissement

[illegible]

ADVERTENCIA

VOLTAJE PELIGROSO!
 EL CABLE CONECTADO A LA ENERGÍA ELÉCTRICA,
 INCLUIDO LAS ESCO EN LAS QUE SE HAN REMOVIDO
 LAS ESCO, PUEDE CAUSAR LA MUERTE O LESIONES
 GRAVES SI NO SE TOMAN LAS PRECAUCIONES
 ADECUADAS. SI SE DEBE TRABAJAR EN LA
 ESCO, SE DEBE USAR EL EQUIPO DE PROTECCIÓN
 PERSONAL ADECUADO Y SE DEBE SEGUIR
 LAS INSTRUCCIONES DE SEGURIDAD.
 EL CABLE DE LA ESCO DEBE ESTAR SIEMPRE
 CONECTADO A LA TIERRA PARA EVITAR
 LA ELECTRICIZACIÓN DEL EQUIPO.
 EL CABLE DE LA ESCO DEBE ESTAR SIEMPRE
 CONECTADO A LA TIERRA PARA EVITAR
 LA ELECTRICIZACIÓN DEL EQUIPO.

CAUTION

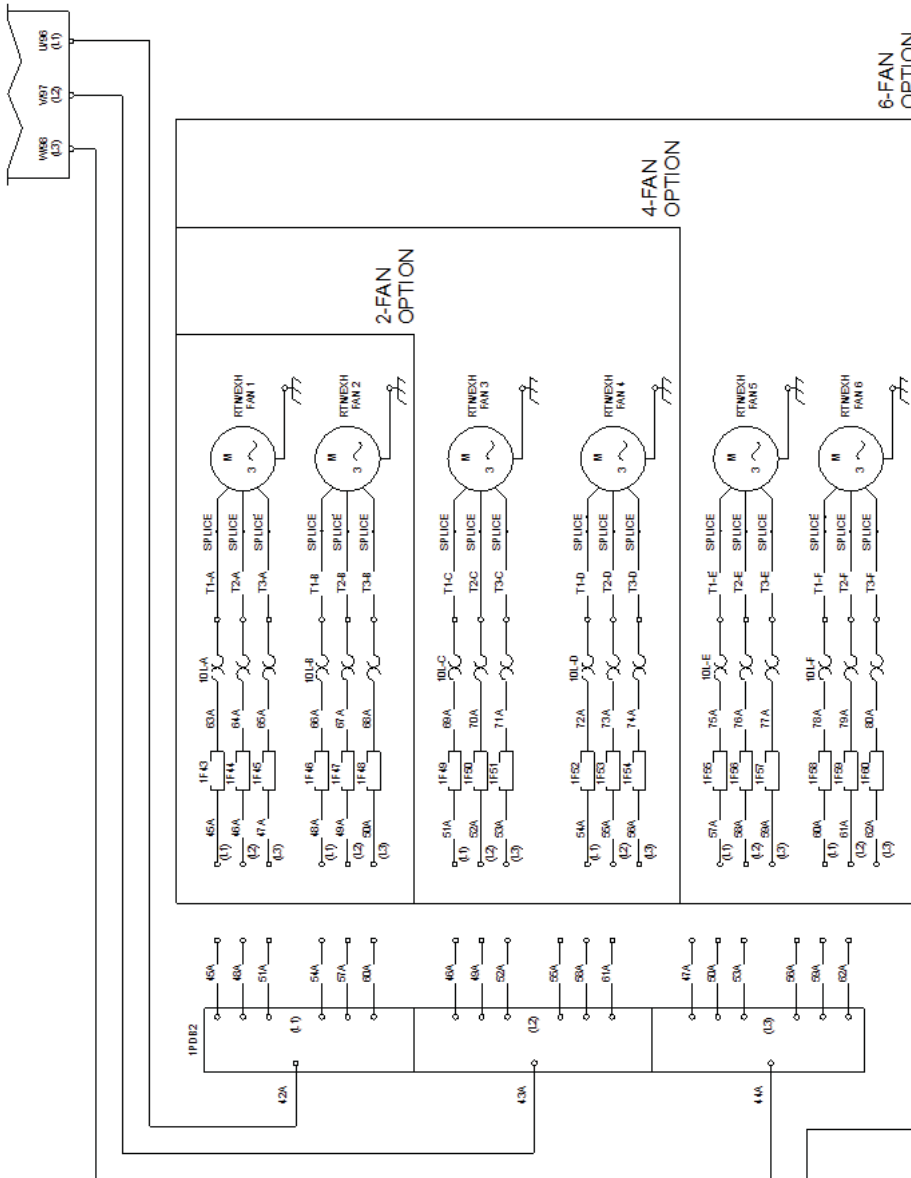
USE COPPER CONDUCTORS ONLY!
UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT
OTHER TYPES OF CONDUCTORS.
FAILURE TO DO SO MAY CAUSE DAMAGE TO THE
EQUIPMENT.

ATTENTION

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!
LOS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADOS
PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.
SI NO LO HACE, PUEDE CASO MAR DAÑO AL EQUIPO.



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
FULLY BEFORE SERVICING. ALWAYS
FOLLOW THE MANUFACTURER'S
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
OUVRIER LES SECTIONNERS À DISTANCE.
PUIS SUIVRE LES PROCÉDURES DE
VERROUILLAGE ET DES ÉTIQUETTES AVANT
SERVICER. ASSURER QUE TOUS LES
LES CONDENSATEURS DES MOTEURS SONT
DESCHARGES. DANS LE CAS D'UNITES
COMPLÉMENTAIRES ENTRAÎNEMENTS À
VITESSE VARIABLE SE REPORTER AUX
INSTRUCTIONS DU MANUEL POUR
DESCHARGER LES CONDENSATEURS.
NE PAS RESPECTER CES MESURES DE
PRÉCAUTION PEUT ENTRAINER 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 SERVICIAR.
SIEMPRE VERIFIQUE QUE TODOS LOS
LOS CAPACITORES DEL MOTOR HAYAN
DESCHARGADO EL VOLTAJE ALMACENADO.
PARA LAS UNIDADES CON EJE DE
DIRECCIÓN DE VELOCIDAD VARIABLE,
SE REPORTAR A LAS INSTRUCCIONES PARA LA
DESCHARGA DEL CONDENSADOR.
SI NO SE REALIZA LO ANTERIORMENTE
INDICADO, PODRÍA OCASIONAR LA MUERTE
O SERIAS LESIONES FÍSICAS.

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'EQUIPEMENT.

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.

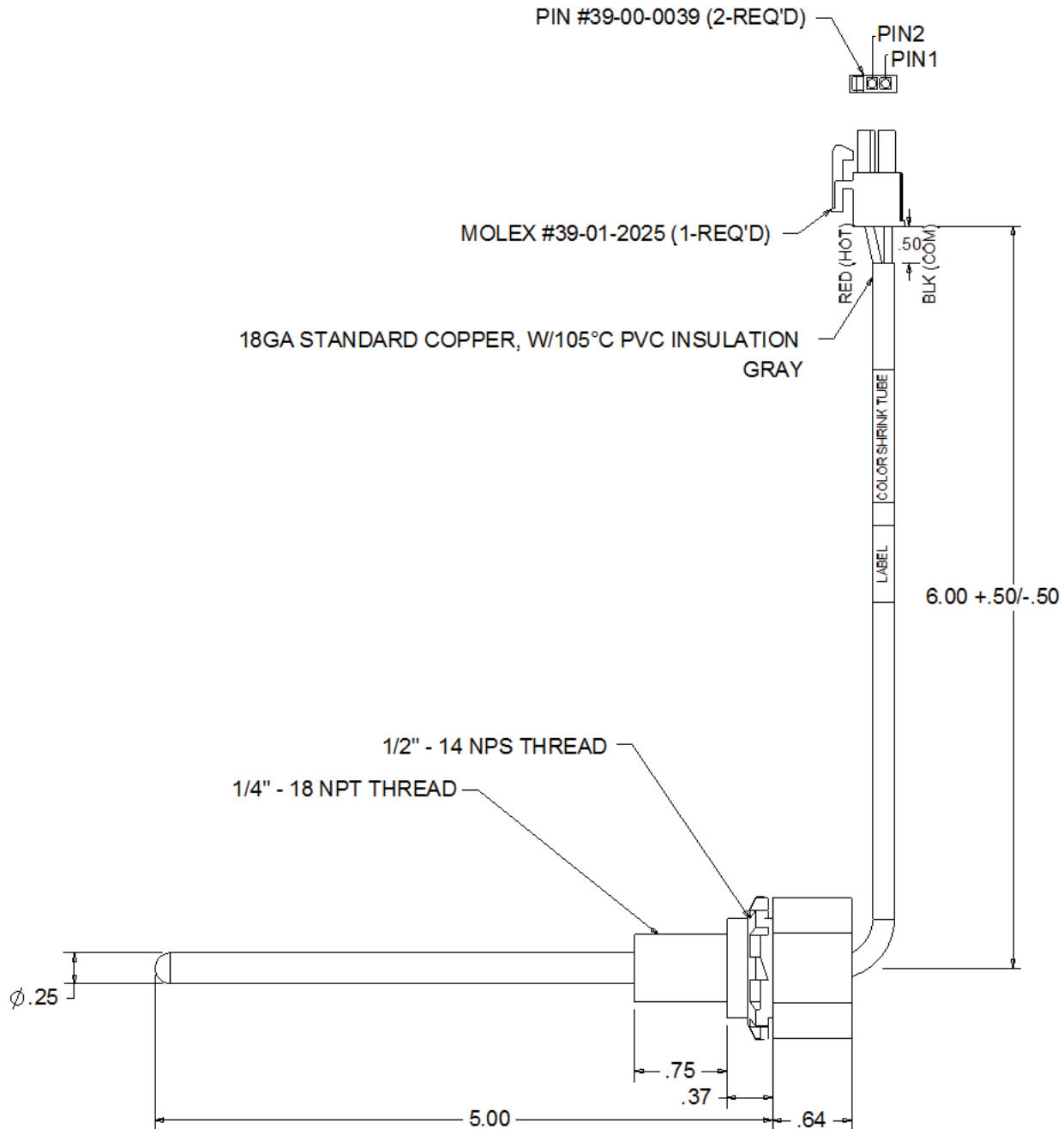
101022

NOTES

1. DASHED LINES INDICATE RECOMMENDED WIRING PRACTICES. PHANTOM LINES INDICATE CONTROL OPTION. REF. CONTROL PANEL SCHEMATIC FOR SPECIFIC DETAIL.
2. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70B. COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATING NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
3. MINIMUM CIRCUIT CAPACITY, MAXIMUM FUSE SIZE AND DISCONNECT SIZE ARE CALCULATED BASED ON THE INVERTER INPUT LINE CURRENTS PER ARTICLE 430.2 OF THE NATIONAL ELECTRICAL CODE.
4. PROGRAM TERMINAL 18 IS RUN.
5. PROGRAM TERMINAL 27 INV. COASTING STOP.
6. CLOSURE TO RUN AUTO MODE OR BYPASS AUTO FOR OPTION VFD OR STARTER.
7. RELAY (S) CONTACTS SILVER-CADMIUM OXIDE, 16 HP GAMP @ 120VAC, 10 HP GAMP @ 240VAC. SEE 24V SCHEMATIC DIAGRAM FOR WIRING. CONNECTING AND ACTUAL QUANTITY OF TRANSFORMER RELAYS.
8. ATTACH GROUND OR EQUIPMENT GROUND.
9. AIRFLOW SWITCH INPUT. REFER TO LOW VOLTAGE SCHEMATIC.

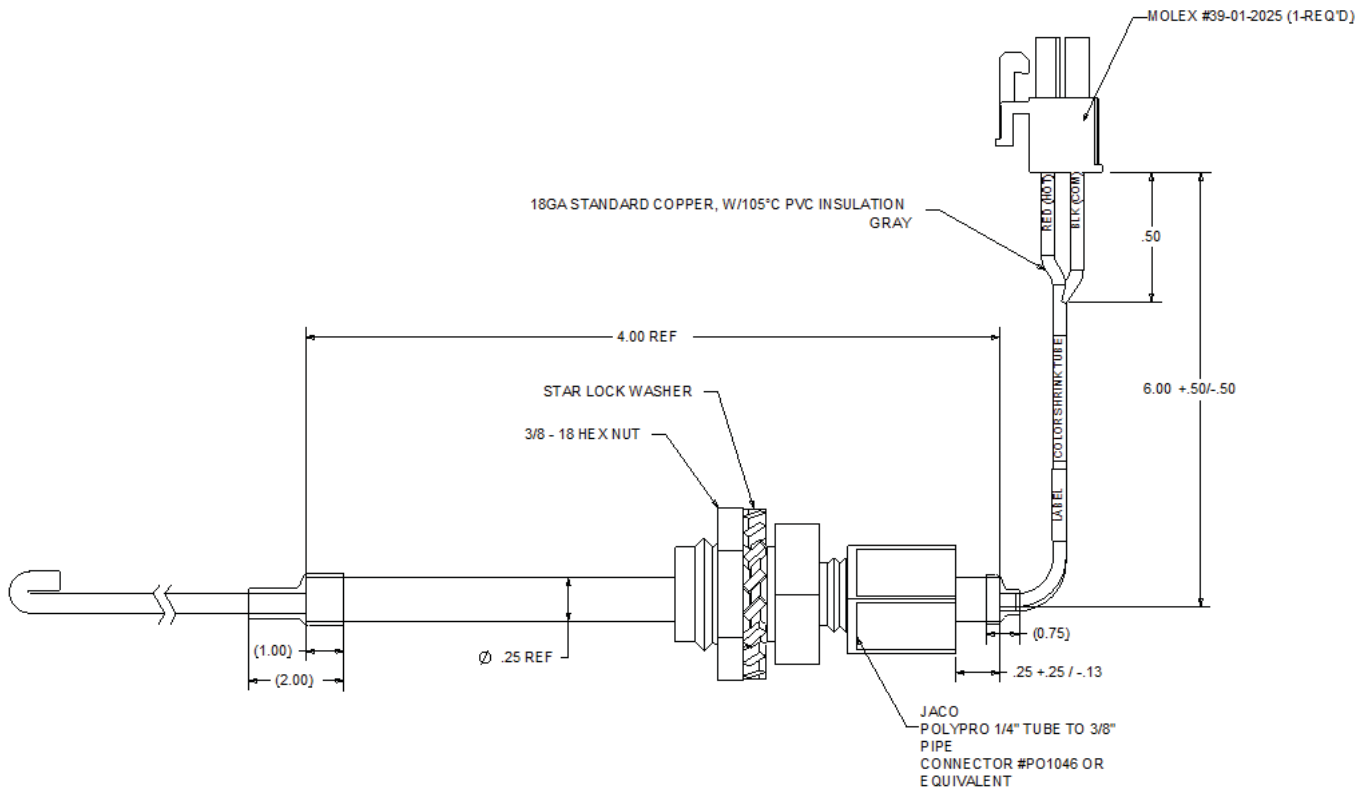
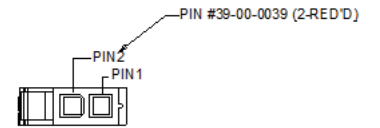
Discharge Temperature Sensor

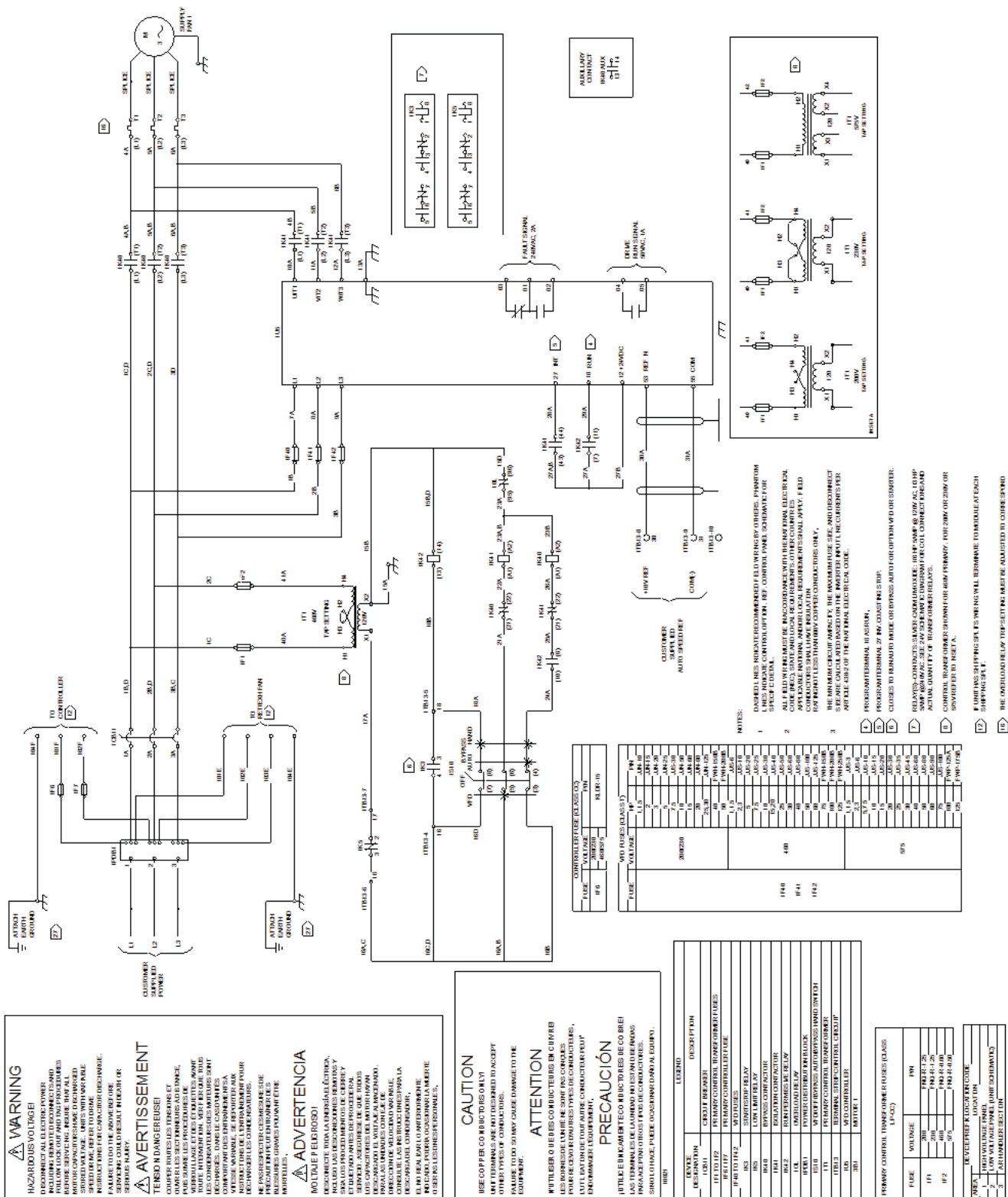
EXT	SENSOR RATING	SHRINK TUBE COLOR	SENSOR
01	10,000 Ω TYPE II	YELLOW	THERMISTOR



Averaging Temperature Sensor

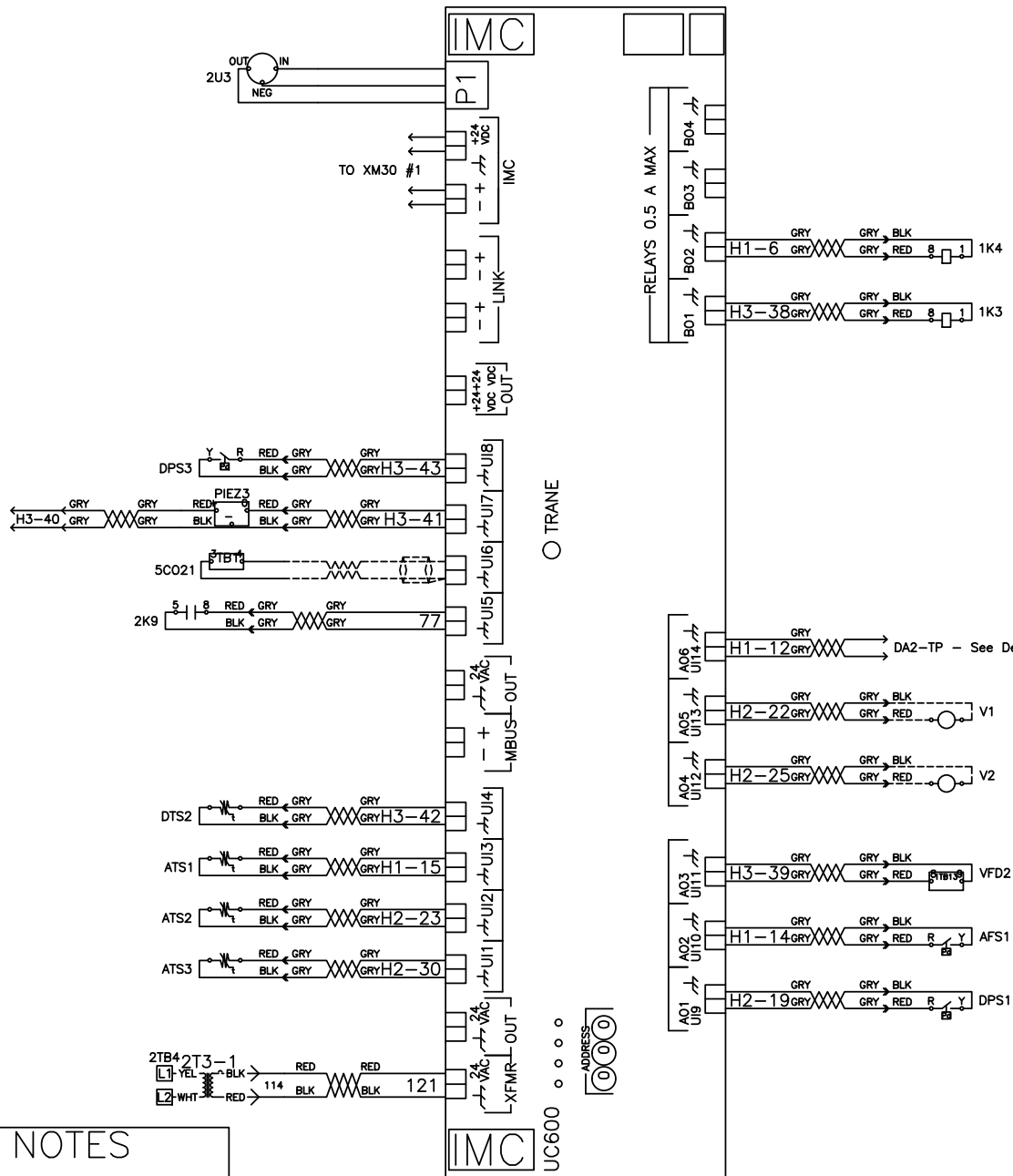
SENSOR ELEMENT	SENSOR RATING	TCR	SHRINK TUBE COLOR
RTD	1,000 Ω PT 385	3850 PPM/K	WHITE





CONTROLLER DETAIL 1 (MOUNTED IN MC05)

DEVICE NAME	DEVICE LOCATION
PREFIX	
1	HIGH VOLTAGE PANEL
2	LOW VOLTAGE PANEL
5	CUSTOMER INSTALLED



NOTES

UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25C (77F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TURNED OFF, AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.

DASHED LINES INDICATE FIELD WIRING BY OTHERS.
SOLID LINES INDICATE WIRING BY TRANE

ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS

COMMUNICATION WIRE MUST BE TRANE PART NO.400-20-28 OR EQUIVALENT-MAXIMUM FOOT AGGREGATE RUN.
CAUTION DO NOT RUN POWER IN THE SAME CONDUIT/WIRE BUNDLE WITH COMMUNICATION LINK

CONTROL RELAY(S) CONTACTS: SILVER CADMIUM
OXIDE RATED AT 1/2 HP 5A 120VAC AND 1/3 HP 5A 240VAC

MP OR AH CONTROLLER OUTPUT RELAYS ARE RATED 24V AC/DC, 1A, 24VA PILOT DUTY.
EXTERNAL RELAY REQUIRED FOR HIGHER VOLTAGE CIRCUITS

DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

CAUTION
ATTENTION
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.

PRECAUCION
UTILICE UNICAMENTE CONDUCTORES DE COBRE!
LAS TERMINALES DE LA UNIDAD NO ESTAN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.
NO SEGUIR LAS INSTRUCCIONES ANTERIORES PUEDE PROVOCAR DAÑOS EN EL EQUIPO

WARNING

HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG OUT 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 CAN RESULT IN DEATH OR SERIOUS INJURY

AVERTISSEMENT

TENSION DANGEREUSE!
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS A DISTANCE PLUS SUIVRE LES PROCEDURES DE VERROUILLAGE ET DES ETIQUETTES AVANT TOUTE INTERVENTION. VERIFIER QUE TOUTS LES CONDENSATEURS DES MOTEURS SONT DECHARGES. DANS LE CAS D'UNITES COMPORTANT DES ENTRAÎNEMENTS A VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ÉQUIPEMENT POUR DECHARGER LES CONDENSATEURS. NE PAS RESPECTER CES MESURES DE PRECAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ETRE MORTELLES.

ADVERTENCIA

VOLTAJE PELIGROSO!
DESCONECTE TODA LA ENERGIA ELECTRICA INCLUIDO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGURESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON EJE DE DIRECCION DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR. EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRIA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.

WIRING DETAIL 1

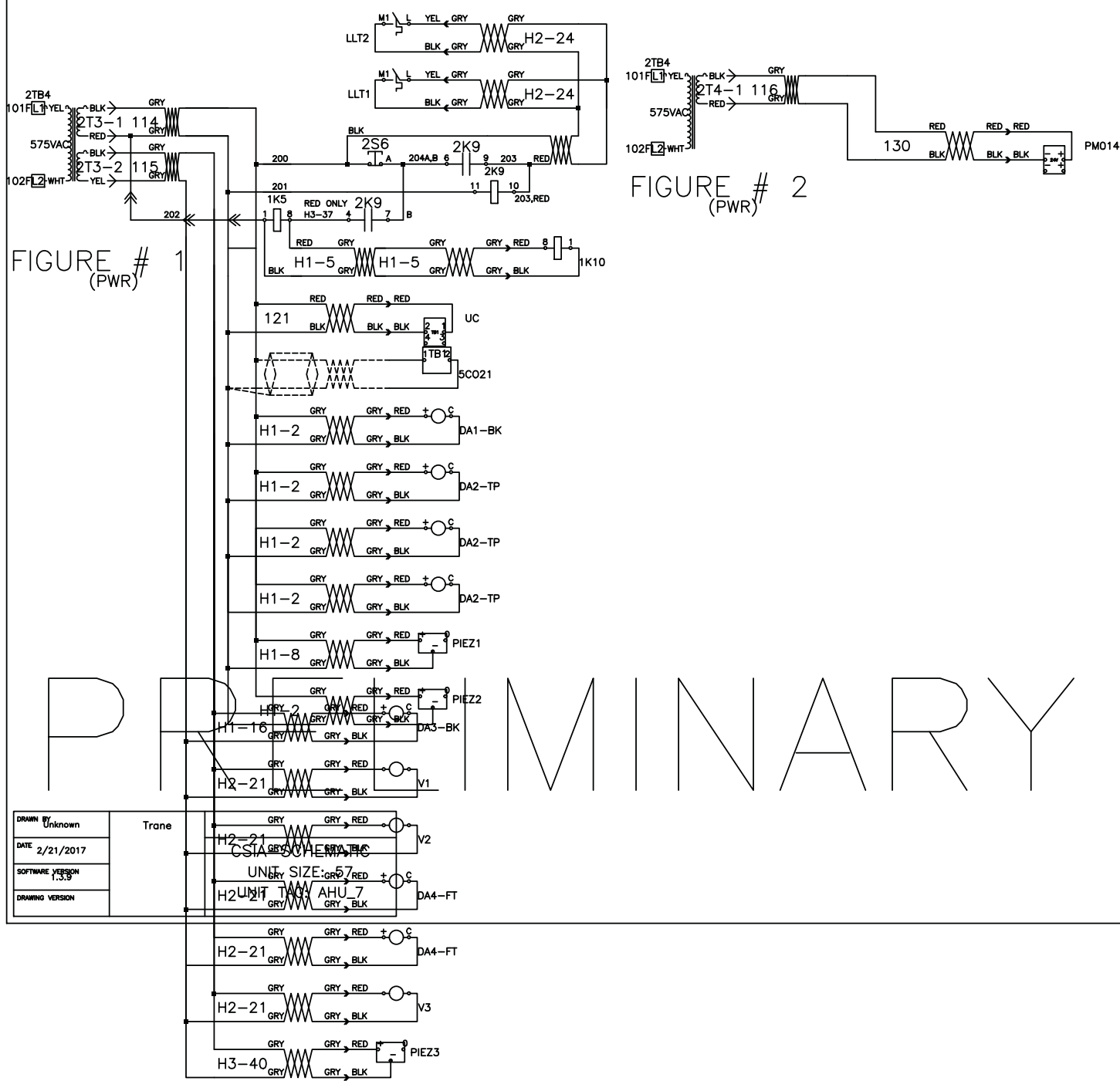
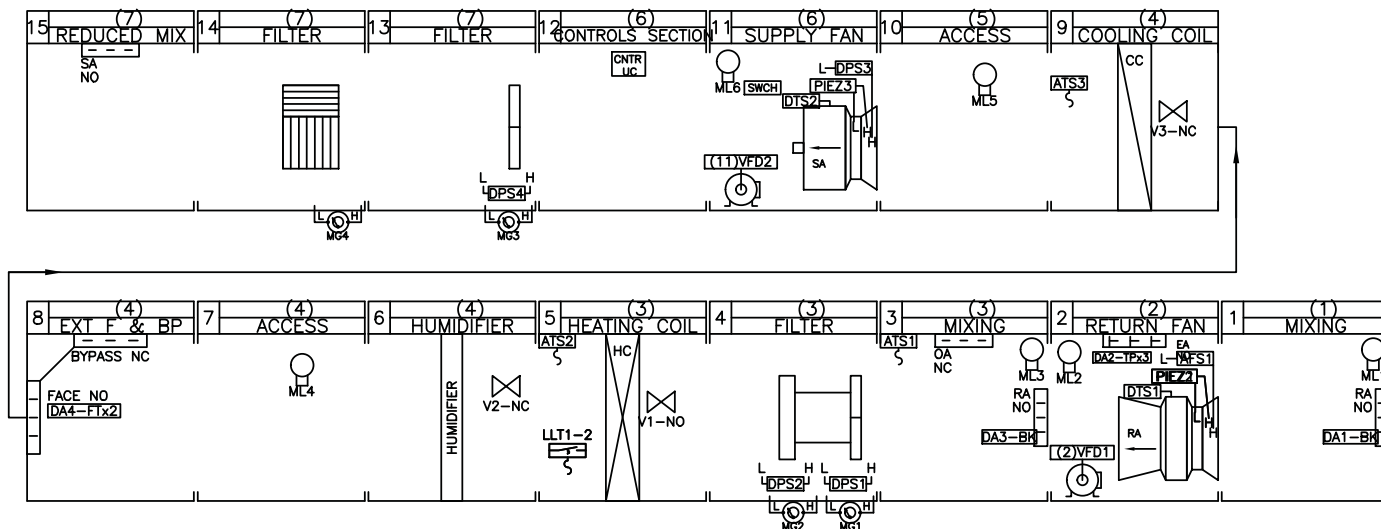


FIGURE # 2
(PWR)

FIGURE # 1
(PWR)

PRELIMINARY

DRAWN BY	Unknown
DATE	2/21/2017
SOFTWARE VERSION	1.3.9
DRAWING VERSION	

Trane

UNIT SIZE: 57

UNIT TYPE: AHU-7

WIRING DETAIL 2

FIGURE # 3

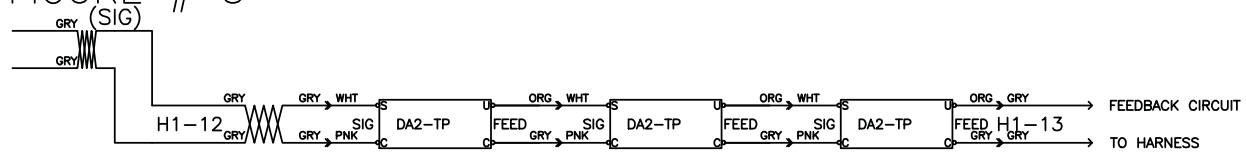
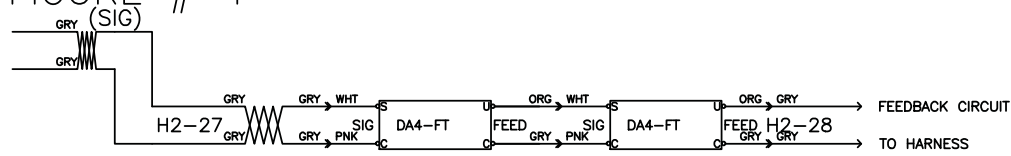


FIGURE # 4

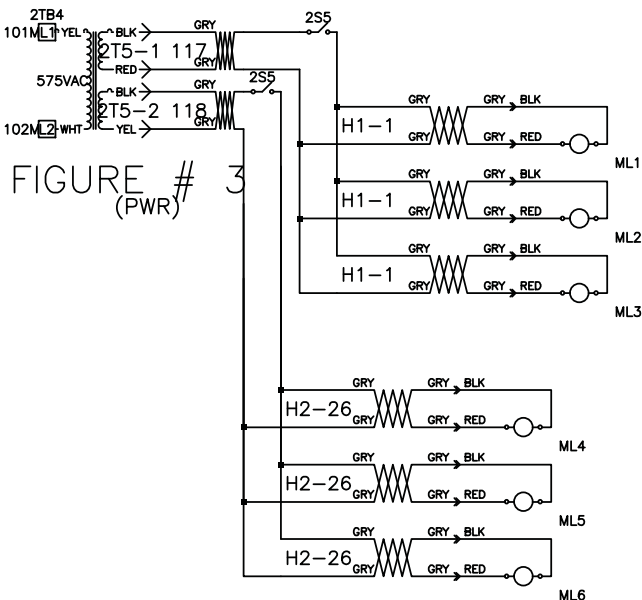


PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHEMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_7

MARINE LIGHT BOX

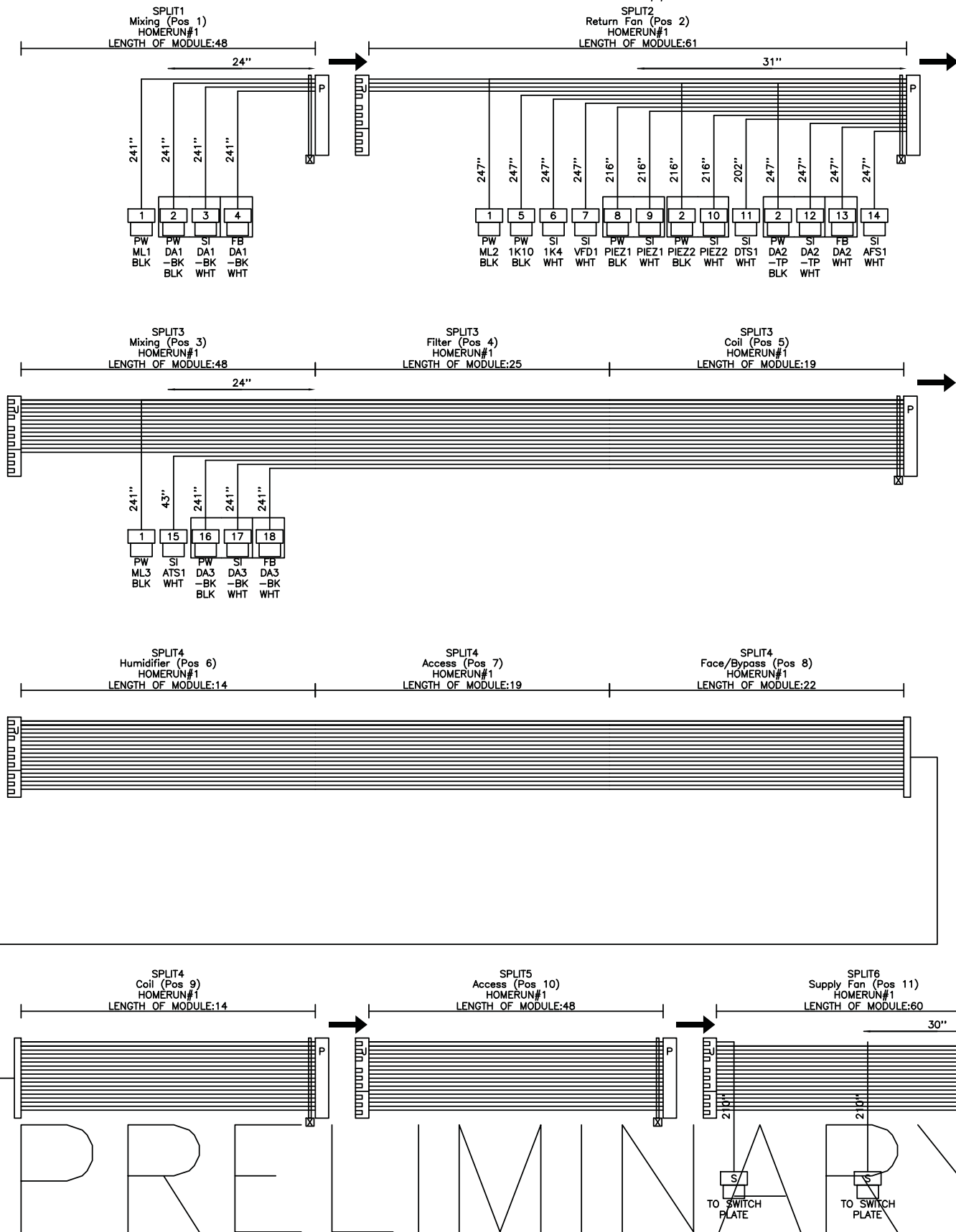
(SEPARATE BOX)



PRELIMINARY

DRAWN BY Unknown	Trane	CSIA—SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

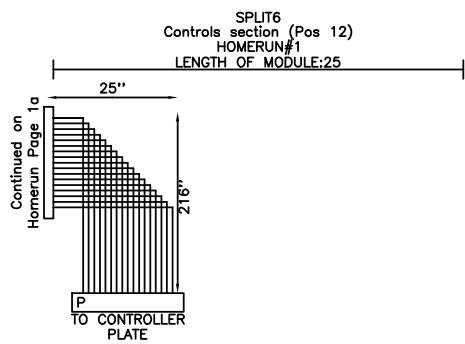
RACEWAY HOMERUN #1a DETAIL



DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

Continued on
Homerun Page 1b

RACEWAY HOMERUN #1b DETAIL

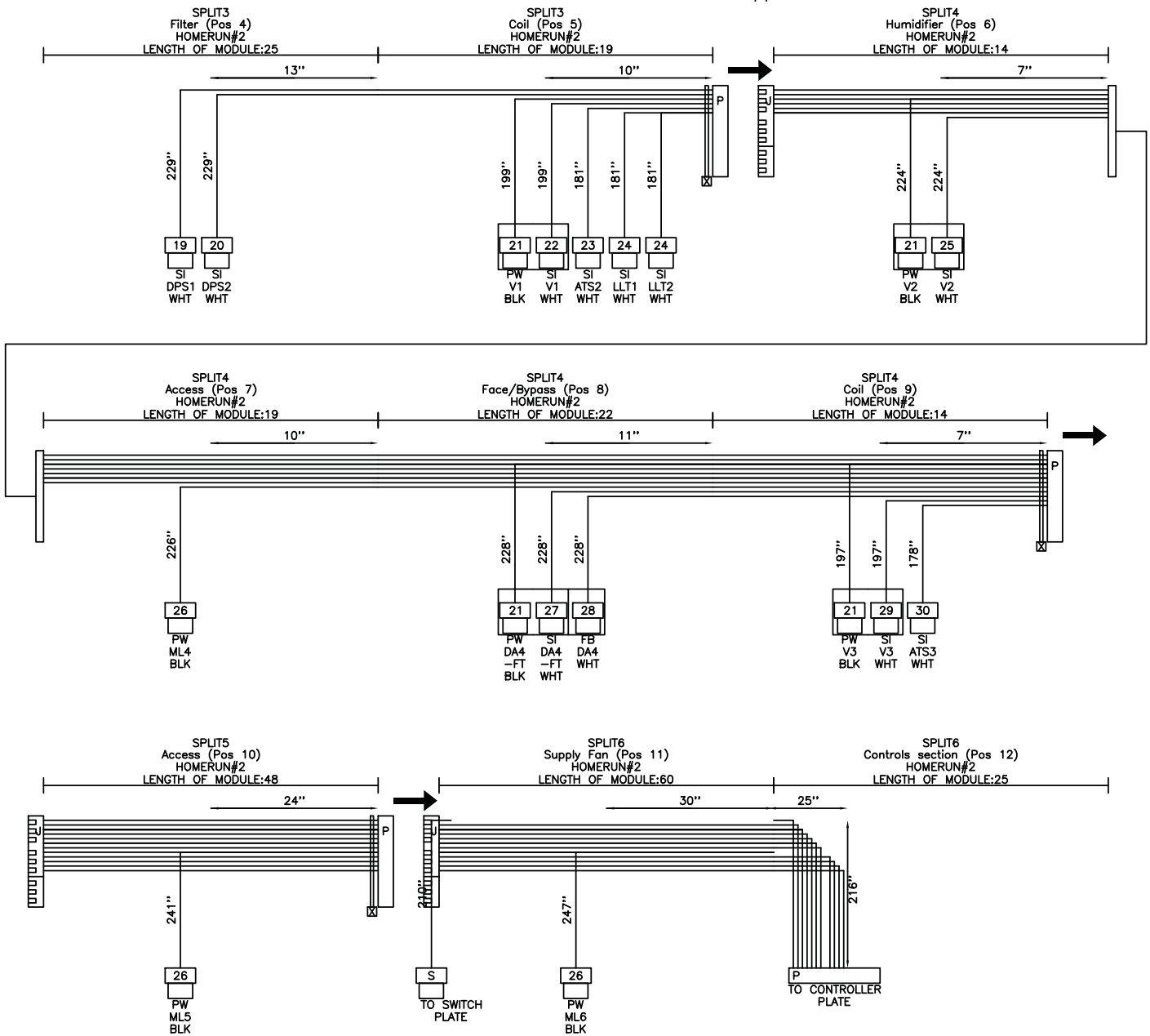


PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

→Or← indicates direction of airflow

RACEWAY HOMERUN #2 DETAIL

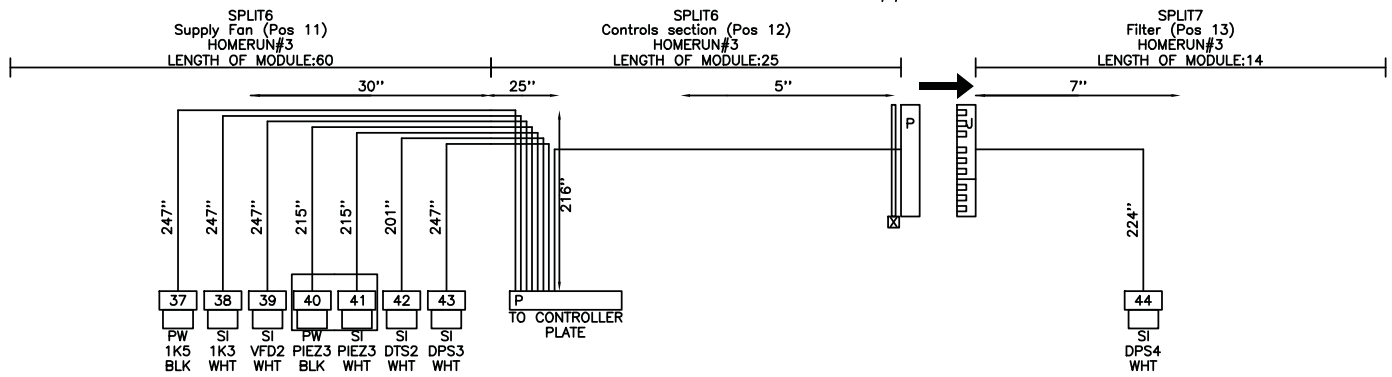


PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

P=Connector with male terminals
J=Connector with female terminals
→Or← indicates direction of airflow

RACEWAY HOMERUN #3 DETAIL

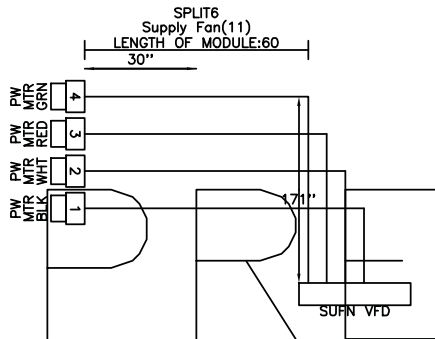


PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DRAWING VERSION		

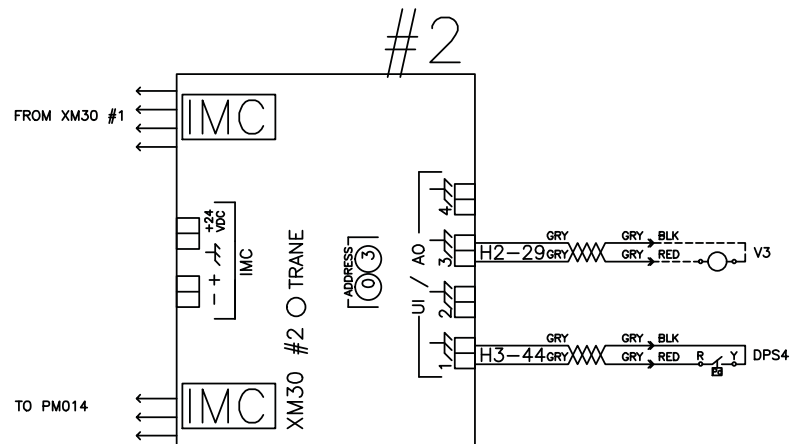
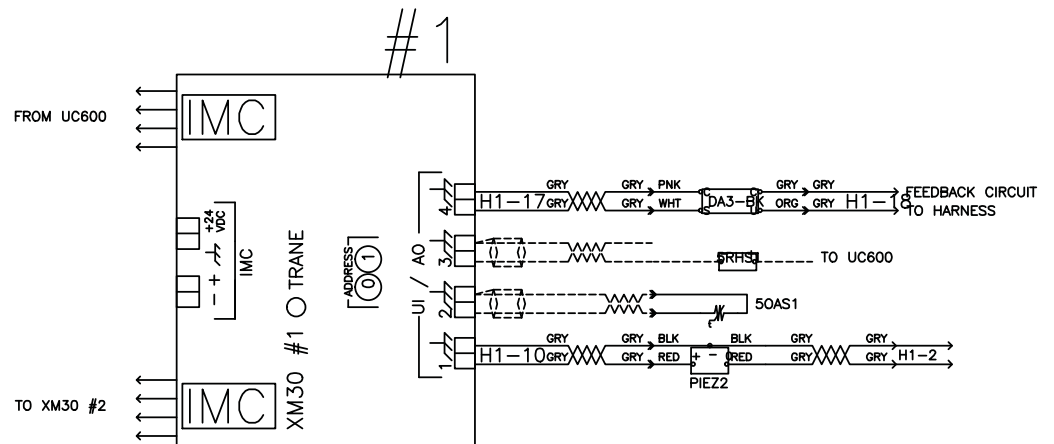
P=Connector with male terminals
J=Connector with female terminals
➡Or⬅ indicates direction of airflow

RACEWAY HV HOMERUN #1 DETAIL



DRAWN BY	Unknown	Trane	CSIA--SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE	2/21/2017		
SOFTWARE VERSION	1.3.3		
DRAWING VERSION			

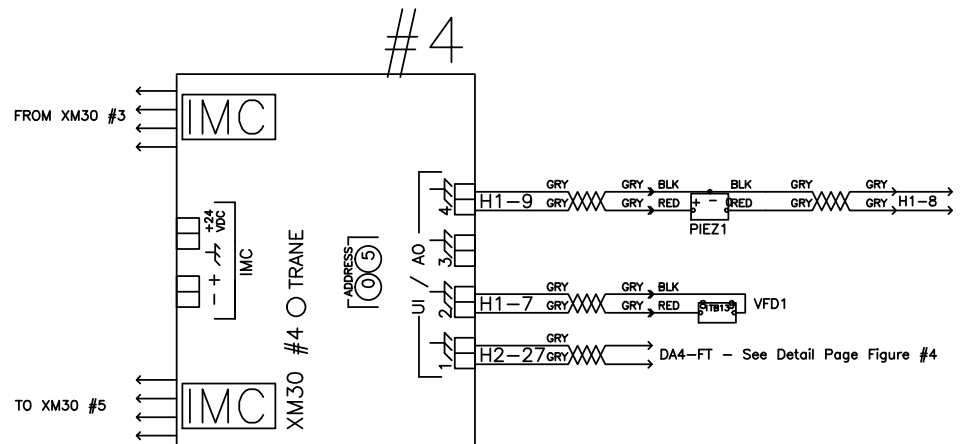
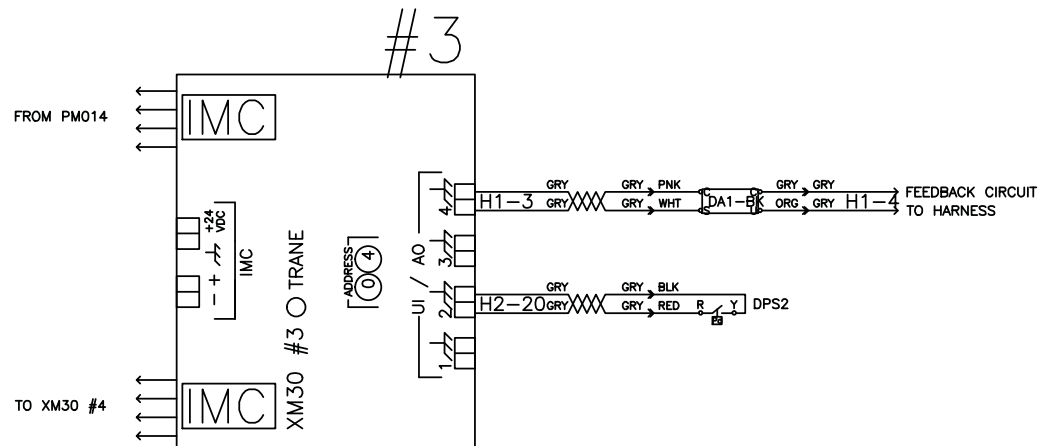
XM30 EXPANSION CARD DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

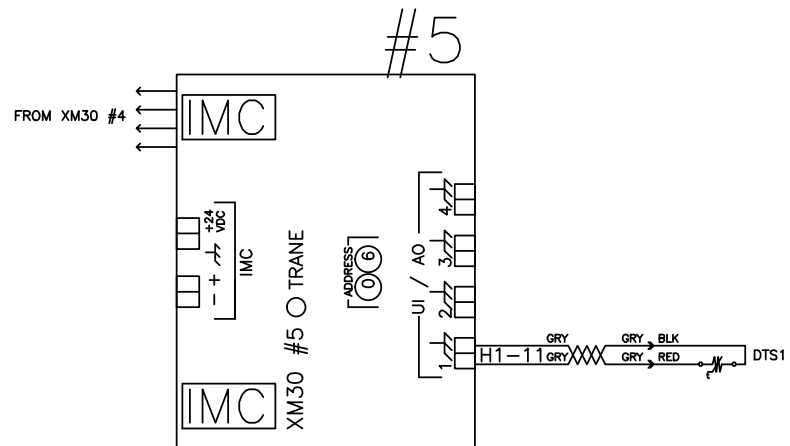
XM30 EXPANSION CARD DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

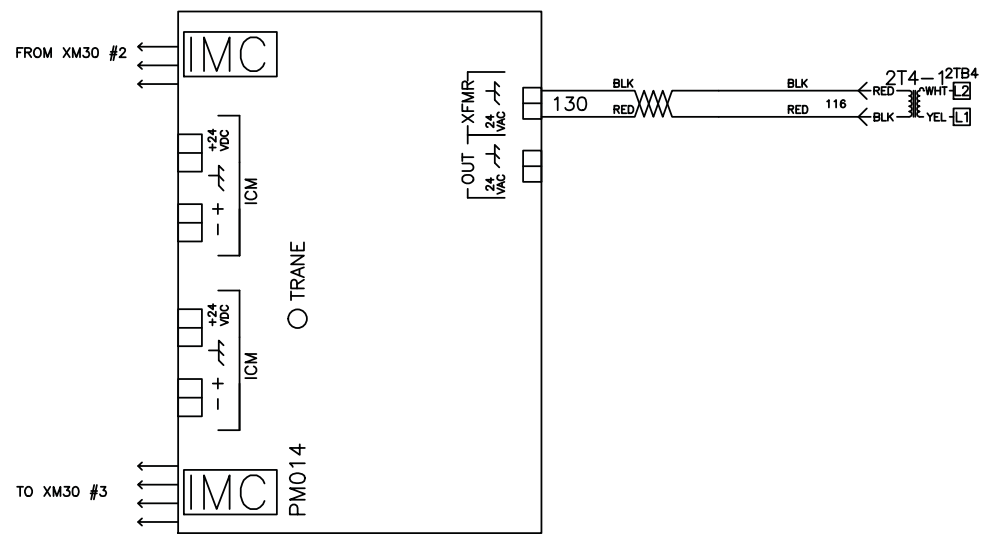
XM30 EXPANSION CARD DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHEMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_7

PM014 POWER SUPPLY DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

LEGEND DETAIL 1

POS#	DESCRIPTION	PT	LABEL	PWR HR-WIRE	SIGNAL HR-WIRE	XFMR	POWER VA
0	150VA TRANSFORMER		2T3				
0	150VA TRANSFORMER		2T4				
0	150VA TRANSFORMER		2T5				
0	Differential Press. Transmitter	P1	2U3				
0	UC600 Controller		UC	121		2T3-126	
0	Outside Air Sensor (S/W) (10K Type 2)	UI16	5OAS1				
0	Carbon Dioxide Sensor (S/W)	UI6	5CO21			2T3-11	
0	Relative Humidity Sensor (S/W RHO 3%)	UI17	5RHS1				
0	XM30 Expansion module		XM30-1				
0	XM30 Expansion module		XM30-2				
0	XM30 Expansion module		XM30-3				
0	XM30 Expansion module		XM30-4				
0	XM30 Expansion module		XM30-5				
0	PM014 Power supply		PM014	130		2T4-175	
1	Marine Light		ML1	H1-1		2T5-122	
1	Back Damper Actuator	AO18	DA1-BK	H1-2	H1-3	2T3-110	
2	Marine Light		ML2	H1-1		2T5-122	
2	Return/Exhaust Fan Low Limit Circuit Relay		1K10	H1-5		2T3-11	
2	Return/Exhaust Fan S/S	BO2	1K4		H1-6		
2	Return/Exhaust Fan Speed	AO20	VFD1		H1-7		
2	Flow meter	UI30	PIEZ1	H1-8	H1-9	2T3-12	
2	Flow meter	UI15	PIEZ2	H1-2	H1-10	2T3-12	
2	Discharge Air Sensor (10K Type 2)	UI31	DTS1		H1-11		
2	Fan Damper Actuator	AO6	DA2-TP	H1-2	H1-12	2T3-130	
2	Air Flow Switch	UI10	AFS1		H1-14		
3	Marine Light		ML3	H1-1		2T5-122	
3	Averaging Temperature Sensor (1K PT)	UI3	ATS1		H1-15		
3	Back Damper Actuator	AO10	DA3-BK	H1-16	H1-17	2T3-210	
4	Dirty Filter Switch	UI9	DPS1		H2-19		
4	Dirty Filter Switch	UI24	DPS2		H2-20		
4	Minihelic Gauge		MG1				
4	Minihelic Gauge		MG2				
5	VLV 2 NPT 46cv 2W wtr NO (S/D)	AO5	V1	H2-21	H2-22	2T3-210	
5	Averaging Temperature Sensor (1K PT)	UI2	ATS2		H2-23		
5	Low Limit (Leaving)		LLT1		H2-24	2T3-2	
5	Low Limit (Leaving)		LLT2		H2-24	2T3-2	
6	Valve Control	AO4	V2	H2-21	H2-25	2T3-210	
6	High limit sensor		HLT1				
7	Marine Light		ML4	H2-26		2T5-222	
8	Damper Actuator	AO19	DA4-FT	H2-21	H2-27	2T3-220	
9	VLV 4 FL 170cv 2W wtr NC (S/D)	AO13	V3	H2-21	H2-29	2T3-27	
9	Averaging Temperature Sensor (1K PT)	UI1	ATS3		H2-30		
10	Marine Light		ML5	H2-26		2T5-222	
11	Marine Light		ML6	H2-26		2T5-222	
11	Supply Fan Low Limit Circuit Relay		1K5	H3-37		2T3-21	
11	Supply Fan S/S	BO1	1K3		H3-38		
11	Supply Fan Speed	AO3	VFD2		H3-39		
11	Flow meter	UI7	PIEZ3	H3-40	H3-41	2T3-22	
11	Discharge Air Sensor (10K Type 2)	UI4	DTS2		H3-42		
11	Air Flow Switch	UI8	DPS3		H3-43		

PRELIMINARY

CONTINUED ON LEGEND PAGE 2

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHEMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_7

LEGEND DETAIL 2

CONTINUED FROM LEGEND PAGE 1

POS#	DESCRIPTION	PT	LABEL	PWR HR-WIRE	SIGNAL HR-WIRE	XFMR	POWER VA
12	Low Limit Reset Circuit Relay	UI5	2K9		77	2T3-22	
13	Dirty Filter Switch	UI19	DPS4		H3-44		
13	Minihelic Gauge		MG3				
14	Minihelic Gauge		MG4				

PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_7
DRAWING VERSION		

Trane Performance Climate Changer Air Handler

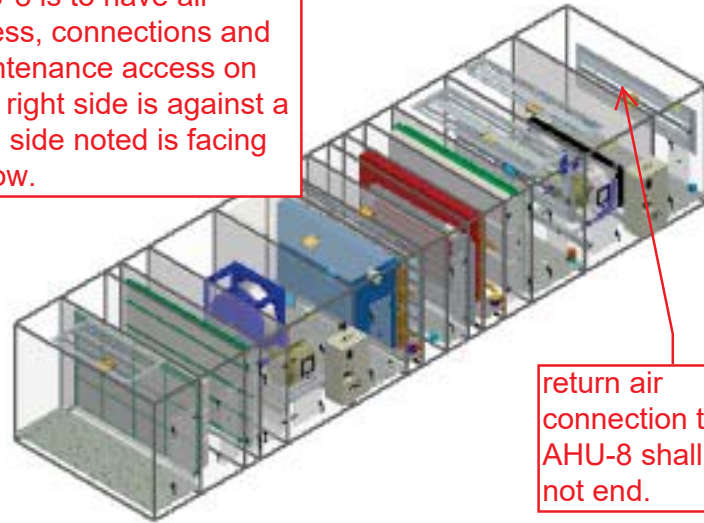
Unit Overview - AHU_8

Application	Unit Size	External Dimensions			Weight		
		Height	Width	Length	Installed	Rigging	
Indoor unit	57	91.000	125.500	497.000	16192.7 lb	15916.7 lb	
Quantity of Shipping Sections		Largest Ship Split			Heaviest Ship Split		
		Height	Width	Length			
7 pieces		91.000 in	125.500 in	95.500 in	4382.8 lb		
Supply Fan				Return/Exhaust Fan			
Airflow	30000 cfm	Total Static Pressure	6.169 in H2O	Airflow	30000 cfm	Total Static Pressure	2.481 in H2O

Unit Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	Inner panel material - unit level: All unit inner panels - galvanized
Integral Base Frame	8in. integral base frame
Paint	Unpainted/field painted
Agency Approval	UL listed unit

AHU-8 is to have all access, connections and maintenance access on left. right side is against a wall. side noted is facing airflow.



return air connection to AHU-8 shall be top not end.

Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Fuse Size
Circuit number 1 Single point power	575/3/60	87.21 A	100.21 A	150.00 A

Unit Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	78 dB	85 dB	86 dB	84 dB	75 dB	74 dB	68 dB	58 dB
Return:	92 dB	96 dB	101 dB	89 dB	87 dB	89 dB	82 dB	72 dB
Outdoor:	90 dB	90 dB	97 dB	91 dB	89 dB	93 dB	88 dB	73 dB
Exhaust:	93 dB	92 dB	100 dB	92 dB	89 dB	94 dB	89 dB	74 dB
Casing:	91 dB	91 dB	90 dB	84 dB	82 dB	76 dB	72 dB	69 dB

Unit Controls

Factory Controls Package	Variable volume
Controller Type	UC600
Controller mounting	Unit mounted
Controller location	Right
PPS Factory programmed	No

Warranty

Warranty section	Extd. warranty
Delayed startup warranty	12/24
Parts - whole unit	6 months additional
Labor - 1st year	1st year labor warranty

Air mixing section - Position: 1

Openings								
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Hood
Back	Return	Opposed blade damper	30000 cfm	1317 ft/min	22.79 sq ft	0.111 in H2O	N/A	No
Section Options								
Door Location				Right				
Marine Light				Marine LED light				
Flooring				Treadplate				

Return fan section - Position: 2

Fan Data				Motor Data			
Wheel Diameter/Type/Class		27in. dd plenum, full width, M press		Power / Fan		15 hp	
Fan Quantity		2		Voltage		575/3	
Discharge Location		Front top		Speed		1800	
Motor Location		Right side drive		Class		NEMA premium compliant TEFC	
Blades		Higher efficiency		Efficiency		92.99 %	
Drive Service Factor		Direct drive		Part Load Efficiency		88.11 %	
Fan Performance				Fan Section Options			
Airflow		30000 cfm		Backdraft Dampers		None	
Total Static Pressure		2.481 in H2O		Fan wheel Balance		Inverter balance with SGR	
Total Brake Power		22.945 hp		Door Location		Right	
Operating Speed		1614 rpm		Test Port		Right side	
Static Efficiency		51.15 %		Window		Right - thermal	
Motor Interface Options				Door Guard		Yes	
Selection Type		VFD		Marine Light		Marine LED light	
Voltage		575/3					
Mounting Location		External mounting					
Motor Wire In Circuit		Motor wiring conduit					
Fan Discharge Options							
Face	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Exhaust Hood
Top Face Feature	Opposed blade damper	30000 cfm	2101 ft/min	14.28 sq ft	0.413 in H2O	N/A	N/A

Return fan Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	68 dB	74 dB	82 dB	78 dB	70 dB	72 dB	64 dB	45 dB
Return:	86 dB	88 dB	98 dB	87 dB	85 dB	89 dB	81 dB	69 dB
Outdoor:	89 dB	88 dB	96 dB	91 dB	89 dB	93 dB	88 dB	73 dB
Exhaust:	91 dB	89 dB	98 dB	92 dB	89 dB	94 dB	89 dB	74 dB
Casing:	90 dB	84 dB	89 dB	81 dB	78 dB	68 dB	61 dB	52 dB

Air mixing section - Position: 3

Openings								
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Hood
Back	Return	Opposed blade damper	30000 cfm	1317 ft/min	22.79 sq ft	0.293 in H2O	N/A	No
Top	Outside	Opposed blade damper	5000 cfm	219 ft/min	22.79 sq ft	0.003 in H2O	N/A	N/A
Section Options								
Door Location				Right				
Marine Light				Marine LED light				
Flooring				Treadplate				

Filter section - Position: 4

Primary Filter								
Type	Frame	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size
Customer supplied	Bag/cartridge filter frame	30000 cfm	60.00 sq ft		Mid-life		15.00	24x24
Prefilter								
Type	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size	
Filter Section Options								
Door Location					Right			
Test Port					Right side			

Heating coil section - Position: 5

Coil Construction		Coil Performance	
Model	Hot water - 5W	Capacity	
Rows	1	Total	896.28 MBh
Tube Diameter	5/8in. tube diameter (15.875 mm)	Air	
Tube Mat/Wall Thickness	.020" (0.508 mm) copper tubes	Flow	30000 cfm
Fin Spacing	80 Per Foot	Entering Dry Bulb	58.00 F
Fin Material	Aluminum fins	Leaving Dry Bulb	85.55 F
Fin Type	Prima flo H (Hi efficient)	Pressure Drop	0.079 in H2O
Face Area	56.50 sq ft	Face Velocity	531 ft/min
Casing	Galvanized	Fluid	
Coating	None	Flow	89.51 gpm
Rigging Weight	226.1 lb	Entering	180.00 F
Installed Weight	297.1 lb	Leaving	160.00 F
Coil Section Options		Pressure Drop	6.21 ft H2O
Extended Drain and Vent	Extended drain and vent	Tube Velocity	4.12 ft/s
Drain Pan	Stainless steel drain pan	Type	Water
Drain Connection	Right	Concentration	100.00 %
Service Panel	Standard panels	Fouling Factor	0.00025 hr-sq ft-deg F/Btu
Door Location	None	Volume	8.52 gal
		AHRI 410 Classification	
		AHRI 410 Classification	AHRI ACHC Certified

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Humidifier section - Position: 6

Construction		Performance	
Steam Source	Building steam	Airflow	30000 cfm
Steam Pressure	15.00 psig	Entering Dry Bulb	78.00 F
Connection Location	Right	Entering Relative Humidity	25.00 %
Required Orifice Size	7/8"	Leaving Relative Humidity	50.00 %
Valve Pipe Connection Size	1 1/2"	Steam Rate	717.43 lb/hr
Options		Air Temperature Gain	1.56 F
Drain Connection/Material	Stainless steel drain pan	Condensation Loss	53.31 lb/hr
Drain Connection	Right		
Service Panel	Standard panels		

Access/blank/turning section - Position: 7

Options	
Section Length	19.000 in
Door Location 1	Right
Test Port	Right side
End Of Unit Door Location	None
Marine Light	Marine LED light
Flooring	Treadplate

Face and bypass - Position: 8

Face Damper		
Airflow	Area	Pressure Drop
15000 cfm	51.53 sq ft	0.015 in H2O



Bypass Damper		
Airflow	Area	Pressure Drop
15000 cfm	10.11 sq ft	0.502 in H2O

Cooling coil section - Position: 9

Coil Construction		Coil Performance	
Model	Chilled water - UU	Capacity	
Rows	4	Total	1270.99 MBh
Tube Diameter	1/2in. tube diameter (12.7 mm)	Sensible	893.32 MBh
Tube Mat/Wall Thickness	.016" (0.406 mm) copper tubes	Air	
Fin Spacing	156 Per Foot	Flow	30000 cfm
Fin Material	Aluminum fins	Entering Dry Bulb	82.00 F
Fin Type	Delta flo H (Hi efficient)	Entering Wet Bulb	68.00 F
Face Area	56.89 sq ft	Leaving Dry Bulb	55.00 F
Casing	Stainless steel	Leaving Wet Bulb	54.44 F
Coating	None	Pressure Drop	0.672 in H2O
Turbulators	Yes	Face Velocity	527 ft/min
Rigging Weight	661.7 lb	Fluid	
Installed Weight	866.7 lb	Flow	253.29 gpm
Coil Section Options		Entering	44.00 F
Extended Drain and Vent	Extended drain and vent	Leaving	54.00 F
Drain Pan	Stainless steel drain pan	Pressure Drop	15.29 ft H2O
Drain Connection	Right	Tube Velocity	3.88 ft/s
Service Panel	Standard panels	Type	Water
Door Location	None	Concentration	100.00 %
		Fouling Factor	0.00000 hr-sq ft-deg F/Btu
		Volume	24.51 gal
		AHRI 410 Classification	
		AHRI 410 Classification	AHRI ACHC Certified

Note: Certified in accordance with the AHRI Forced-Circulation Air-Cooling and Air-Heating Coils Certification Program which is based on AHRI Standard 410 within the Range of Standard Rating Conditions listed in Table 1 of the Standard. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Access/blank/turning section - Position: 10

Options	
Section Length	48.000 in
Door Location 1	Right
Test Port	Right side
End Of Unit Door Location	None
Marine Light	Marine LED light
Flooring	Treadplate

Supply fan section - Position: 11

Fan Data		Motor Data	
Wheel Diameter/Type/Class	44in. belt-drive plenum, M press	Power / Fan	50 hp
Fan Quantity	1	Voltage	575/3
Discharge Location	Front top	Speed	1800
Motor Location	Right side drive	Class	NEMA premium compliant TEFC
Drive Service Factor	1.5 fixed drive	Efficiency	94.50 %
Fan Performance		Fan Section Options	
Airflow	30000 cfm	Backdraft Dampers	None
Total Static Pressure	6.169 in H2O	Fan wheel Balance	Inverter balance with SGR
Total Brake Power	48.241 hp	Door Location	Right
Operating Speed	1012 rpm	Test Port	Right side
Static Efficiency	60.47 %	Window	Right - thermal
Motor Interface Options		Door Guard	Yes
Selection Type	VFD w/ bypass	Marine Light	Marine LED light
Voltage	575/3		
Mounting Location	External mounting		
Motor Wire In Circuit	Motor wiring conduit		

Supply fan Acoustics

Sound Path	63 (Hz)	125	250	500	1K	2K	4K	8K
Supply top:	78 dB	85 dB	84 dB	83 dB	74 dB	69 dB	65 dB	58 dB
Return:	91 dB	95 dB	99 dB	85 dB	83 dB	80 dB	76 dB	69 dB
Outdoor:	82 dB	85 dB	90 dB	74 dB	71 dB	69 dB	63 dB	55 dB
Exhaust:	86 dB	89 dB	95 dB	80 dB	78 dB	76 dB	72 dB	64 dB
Casing:	85 dB	90 dB	85 dB	81 dB	80 dB	75 dB	72 dB	69 dB

Controls only section section - Position: 12

Controller Door	Right
-----------------	-------

Filter section - Position: 13

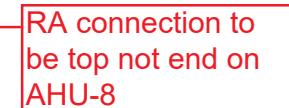
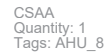
Type	Frame	Area	Pressure Drop	Filter Quantity	Filter Size
Customer supplied	2in. filter frame	30		1.00 4.00 3.00 12.00	16x20 16x25 20x20 20x25
delete section 13					
Door Location			Right		
Test Port			Right side		

Filter section - Position: 14

Primary Filter								
Type	Frame	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size
Customer supplied	HEPA filter frame	30000 cfm	57.00 sq ft		Mid-life		3.00 9.00	24x24 24x30
Filter Section Options								
Door Location					Right			
Test Port					Right side			

Air mixing section - Position: 15

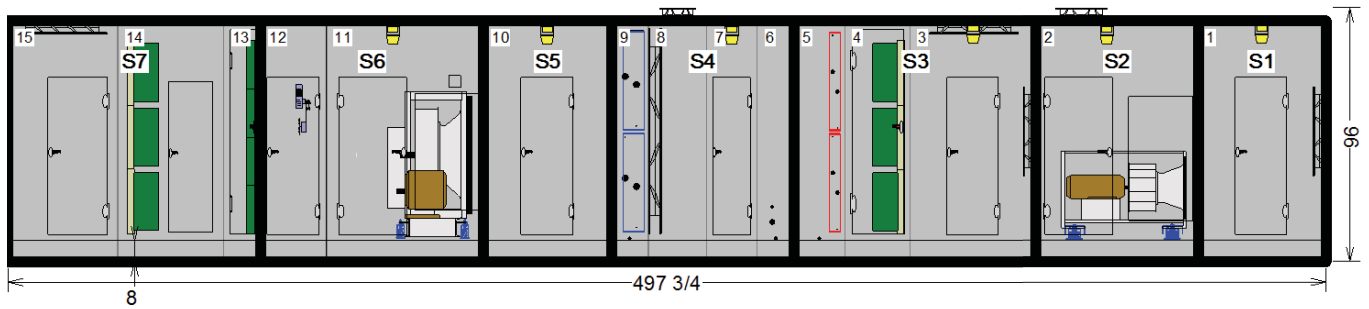
Openings								
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Protective Grate	Hood
Top	Supply	High velocity parallel damper	30000 cfm	2095 ft/min	14.32 sq ft	0.727 in H2O	N/A	N/A
Section Options								
Door Location				Right				
Flooring				Treadplate				



OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE



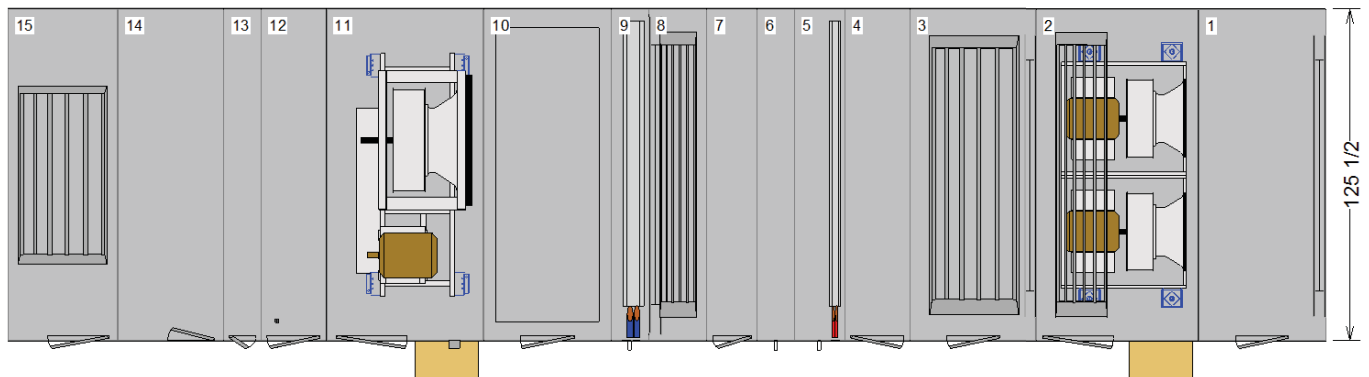
TRANE®
Performance Climate Changer
Air Handlers



Overall Elevation View: Right - Shipping splits indicated by bold outline. - Measurements in inches

For maneuvering purposes, include 1.125 inches to each ship split length for overlapping panel flange. Flange will not add to overall installed unit length sh

Pos #	Module	Length	Weight	Pos #	Module	Length	Weight
1	Air mixing section	48 1/8	823.37	14	Filter section	40	810.08
2	Fan section	61 1/8	2462.14	15	Air mixing section	41 1/2	882.55
3	Air mixing section	48 1/8	870.73	Installed Unit Weight 16192.72 lbs			
4	Filter section	24 1/2	580.52				
5	Coil section	19 1/8	727.82				
6	Humidification section	14 1/8	931.96				
7	Access section	19	359.49				
8	Face and bypass	22	934.64				
9	Coil section	14 1/8	1241.66				
10	Access section	48 1/8	762.96				
11	Fan section	59 5/8	3678.08				
12	Controls section	24 5/8	704.76				
13	Filter section	14 1/8	421.96				



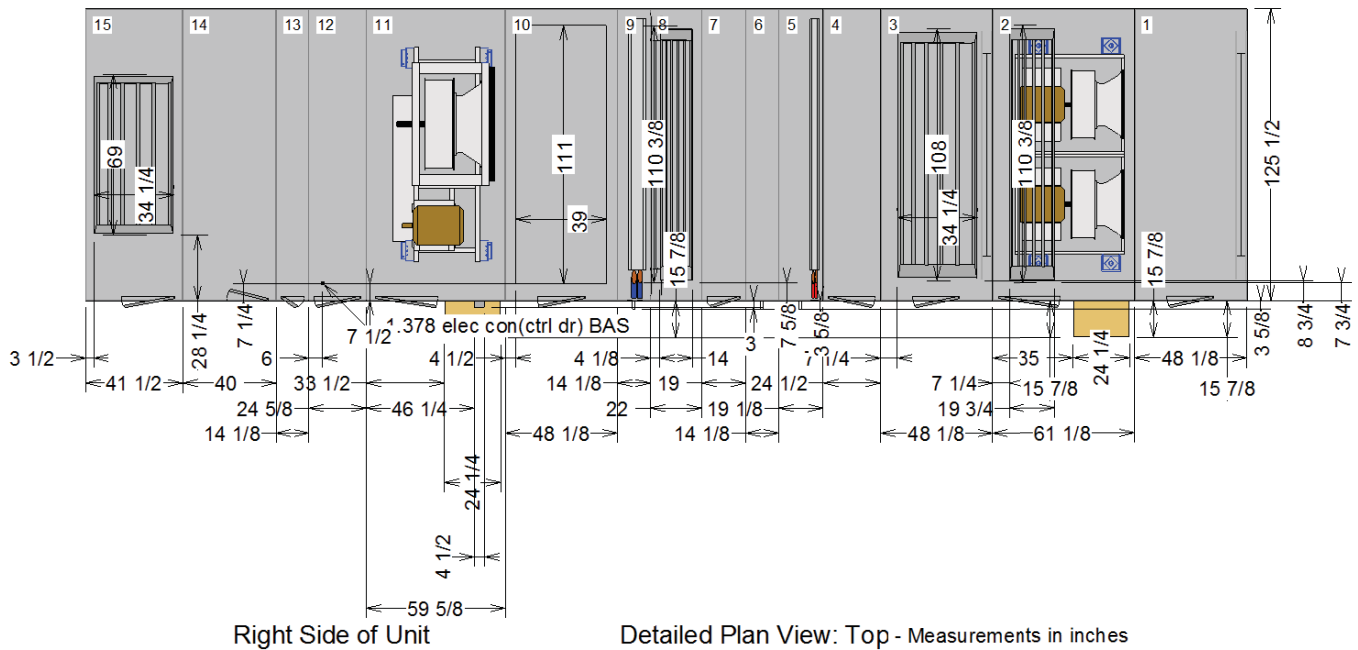
Basic Overall Plan View: Top - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

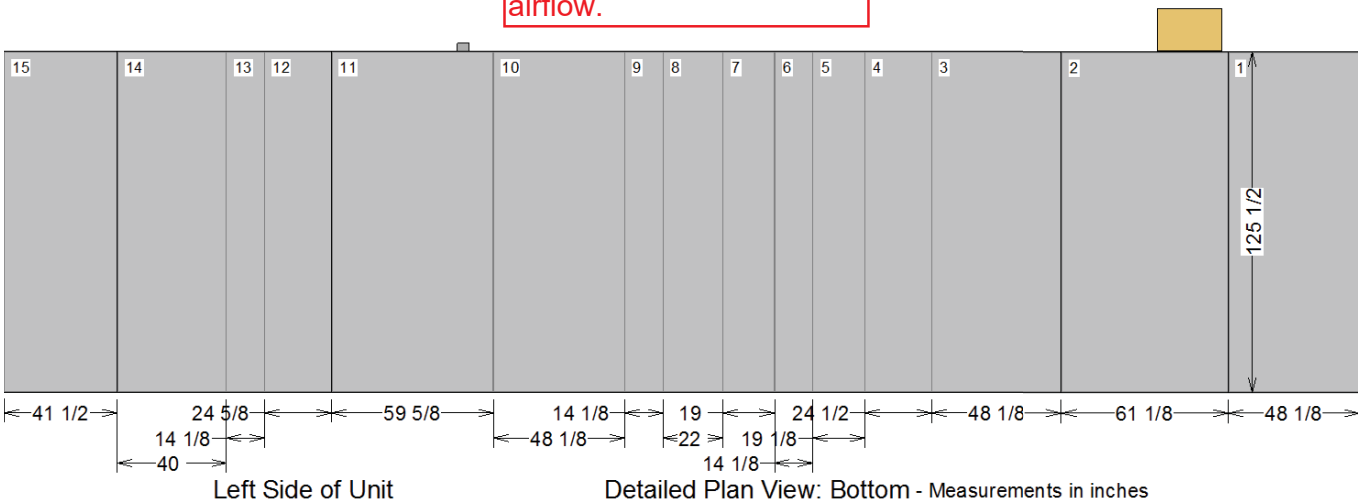
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Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_8
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers



AHU-8 is to have all access, connections and maintenance access on left. right side is against a wall. side noted is facing airflow.

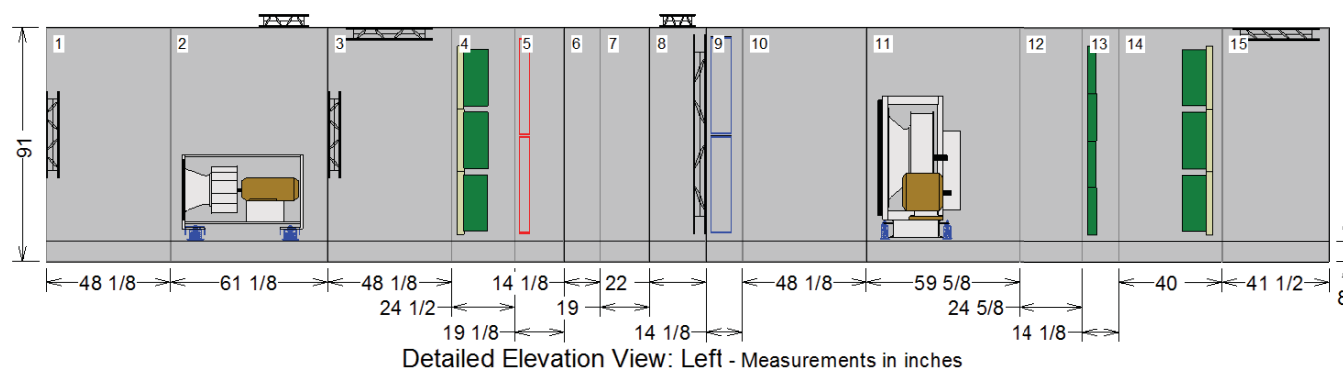
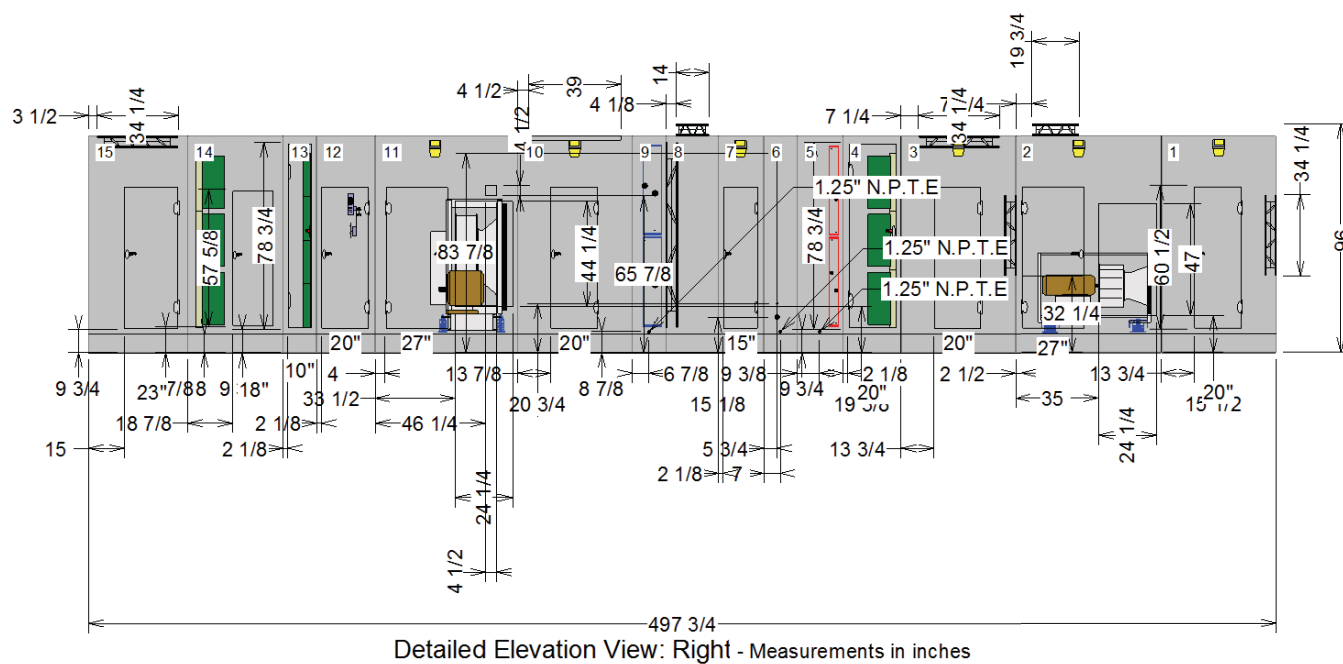
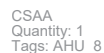


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Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_8
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers

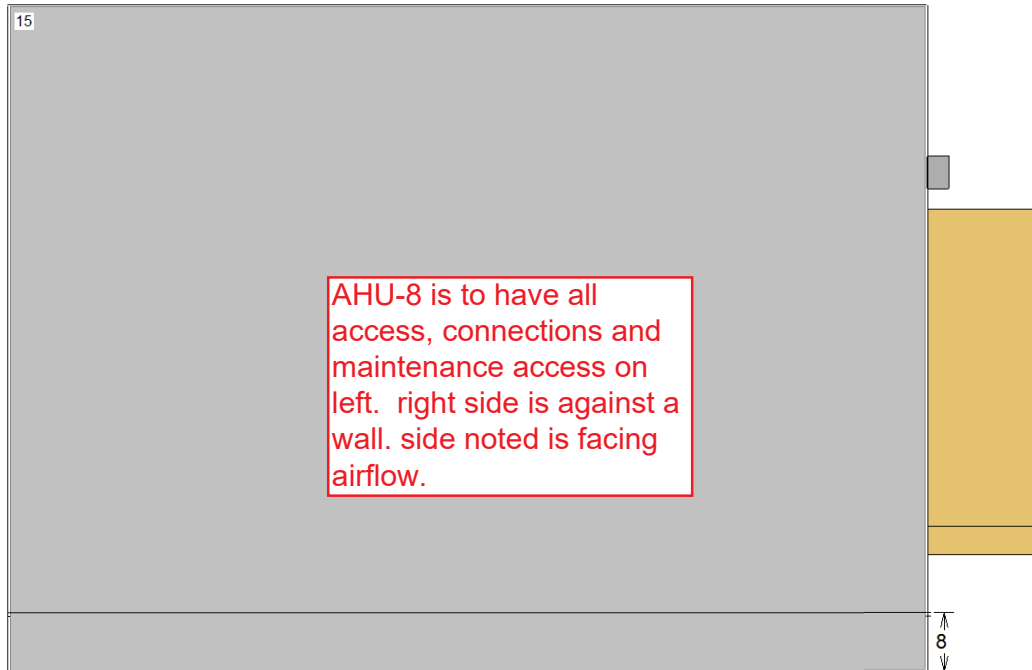


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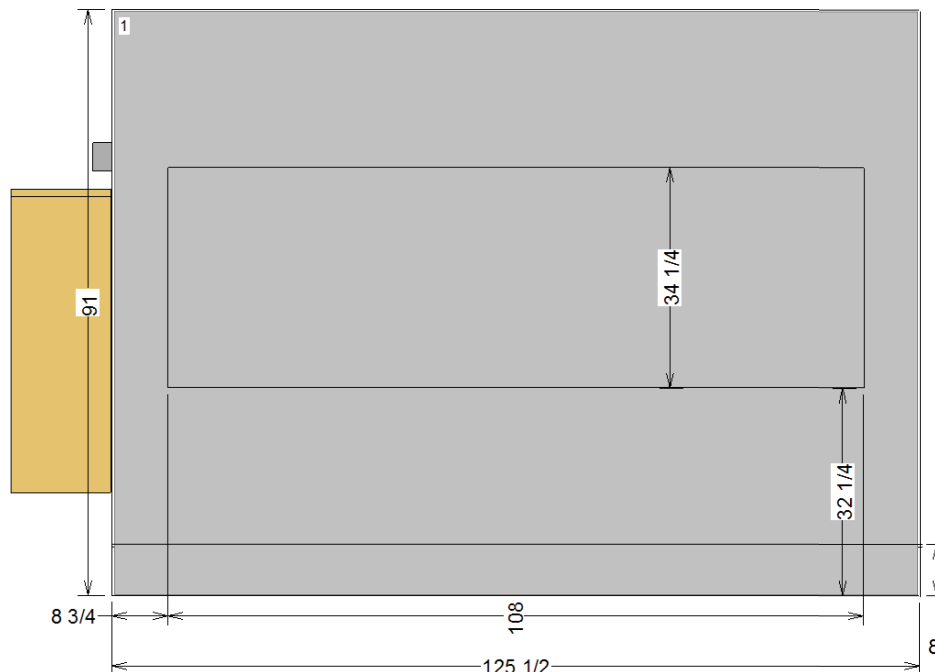
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Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_8
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7

**TRANE®**

Performance Climate Changer Air Handlers



Detailed Elevation View: Front - Measurements in inches



Detailed Elevation View: Back - Measurements in inches

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

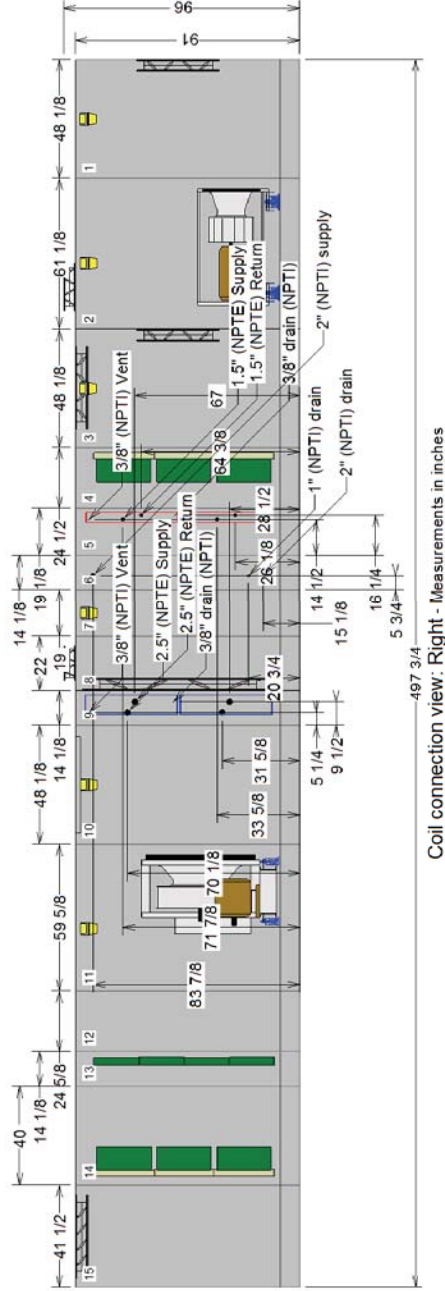
Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_8
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7


TRANE

Performance Climate Changer
Air Handlers



CSAA
Quantity: 1
Tags: AHU_8



Coil connection view: Right - Measurements in inches

NPTI: National Pipe Thread Internal Connection
NPTE: National Pipe Thread External Connection

Horizontal IFB coil header connections extended outside the unit casing, Vertical coil headers do not.
Contractor responsible for extending header connection outside unit casing on Vertical IFB coils. See Product Data for IFB coil type by unit tag

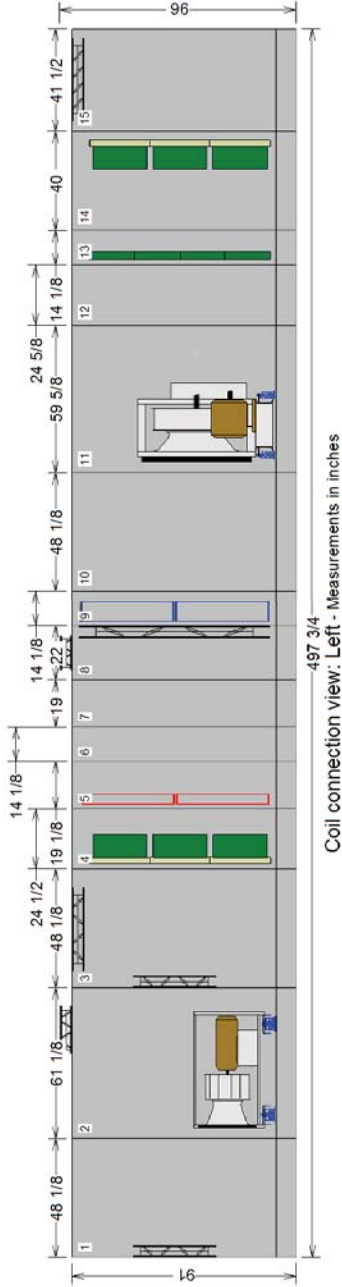
OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_8
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7





CSAA
Quantity: 1
Tags: AHU_8



NPTI : National Pipe Thread Internal Connection
NPTE : National Pipe Thread External Connection

Horizontal IFB coil header connections extended outside the unit casing, Vertical coil headers do not.
Contractor responsible for extending header connection outside unit casing on Vertical IFB coils. See Product Data for IFB coil type by unit tag

OPENING AND DIMENSIONS MAY VARY FROM CONTRACT DOCUMENTS / RETURN OF APPROVED DRAWINGS CONSTITUTES ACCEPTANCE OF THESE VARIANCES / NOT TO SCALE

Unit size: 57	Job Name:	Unit Casing: 2in Double Wall Foam
Product group: Indoor unit	Actual airflow: 30000	Proposal Number:
Integral base frame: 8in. integral base frame	Sales Office:	Tags: AHU_8
Paint: Unpainted/field painted		Rigging weight: 15916.7 / Installed weight: 16192.7

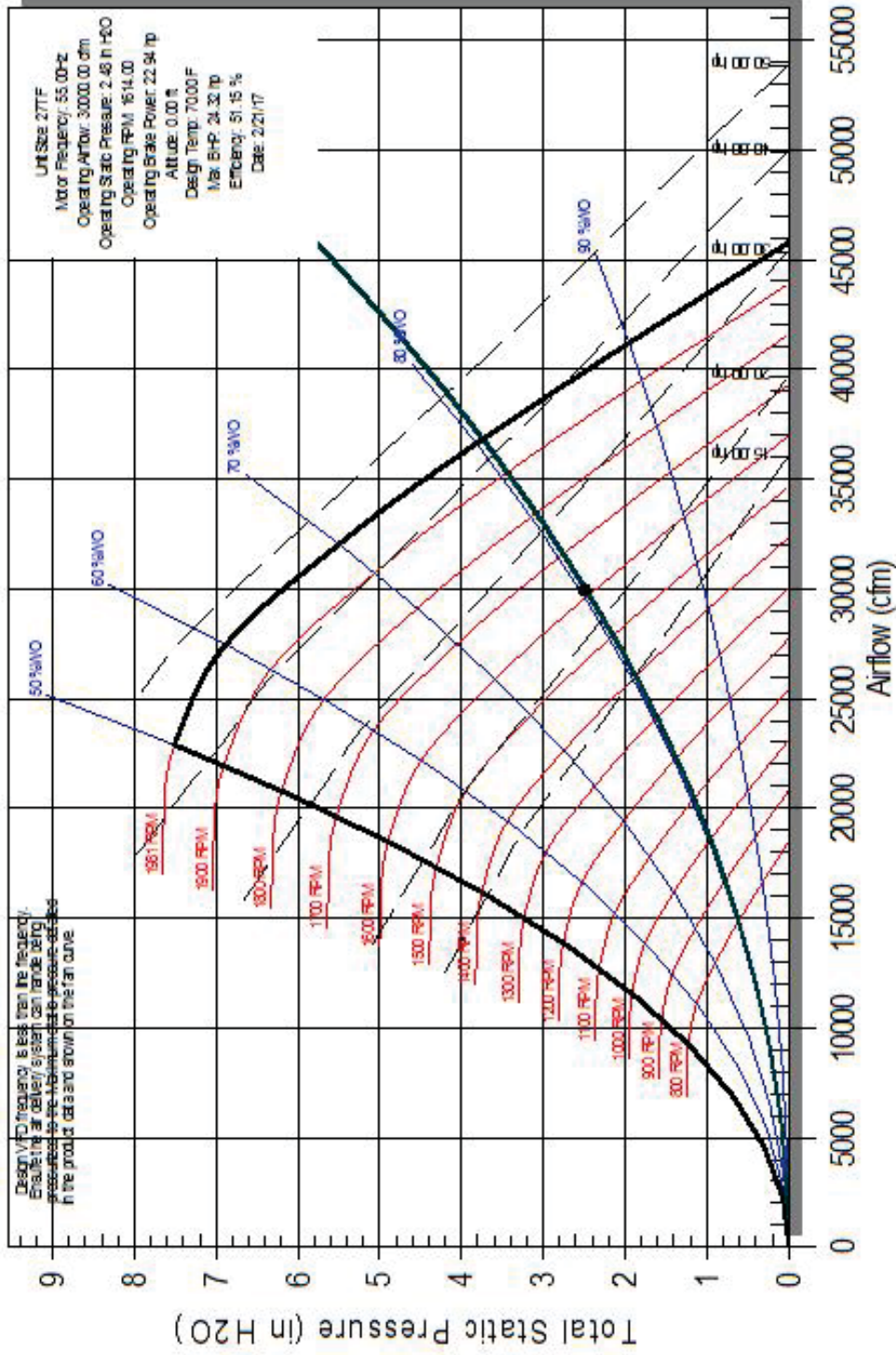




CSAA
Quantity: 1
Tags: AHU_8

AHU-8 - Return

Size 57 DDP 27 inch AF M Press2x1 array 100% Width 9 blades

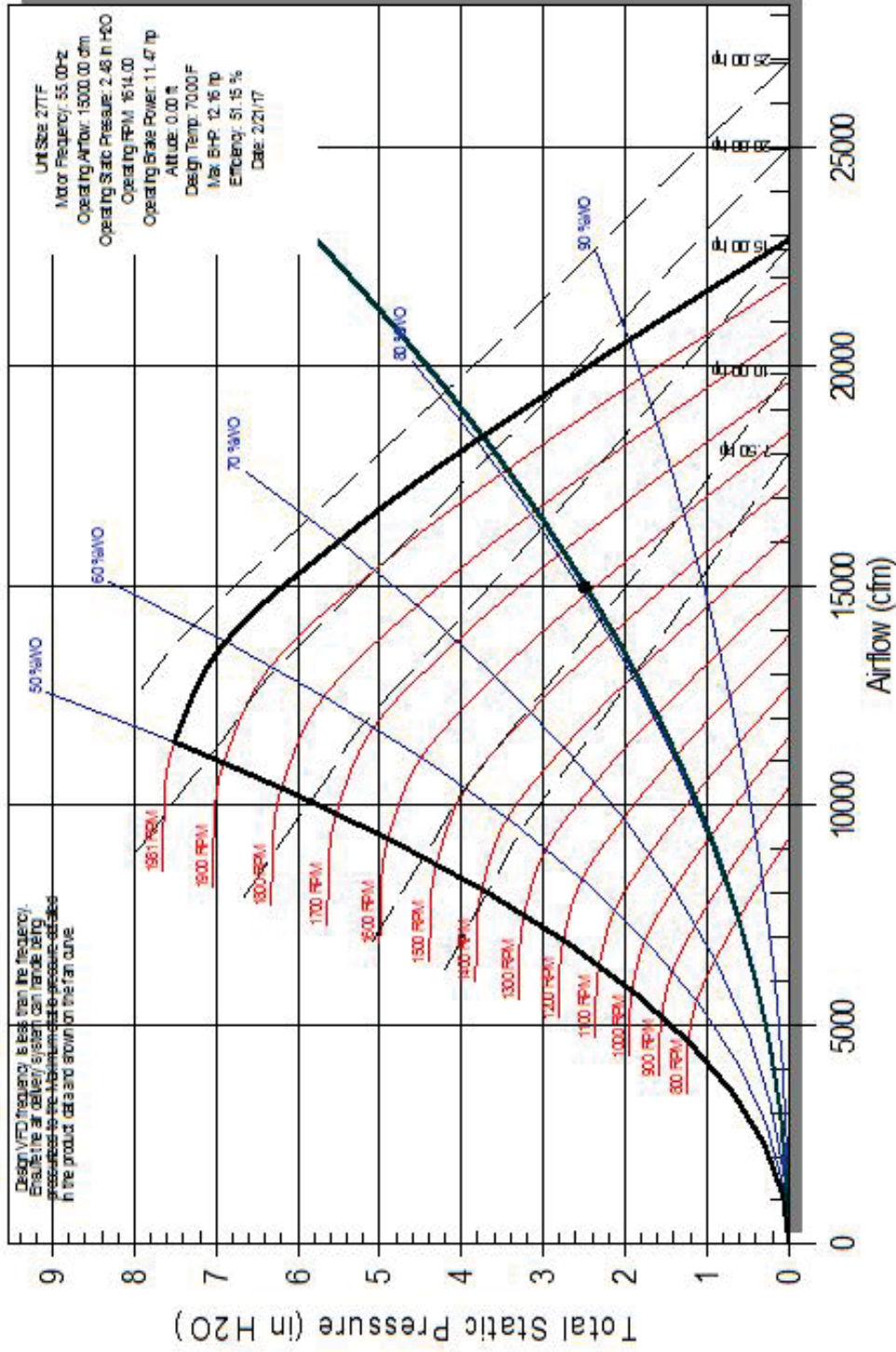




CSAA
Quantity: 1
Tags: AHU_8

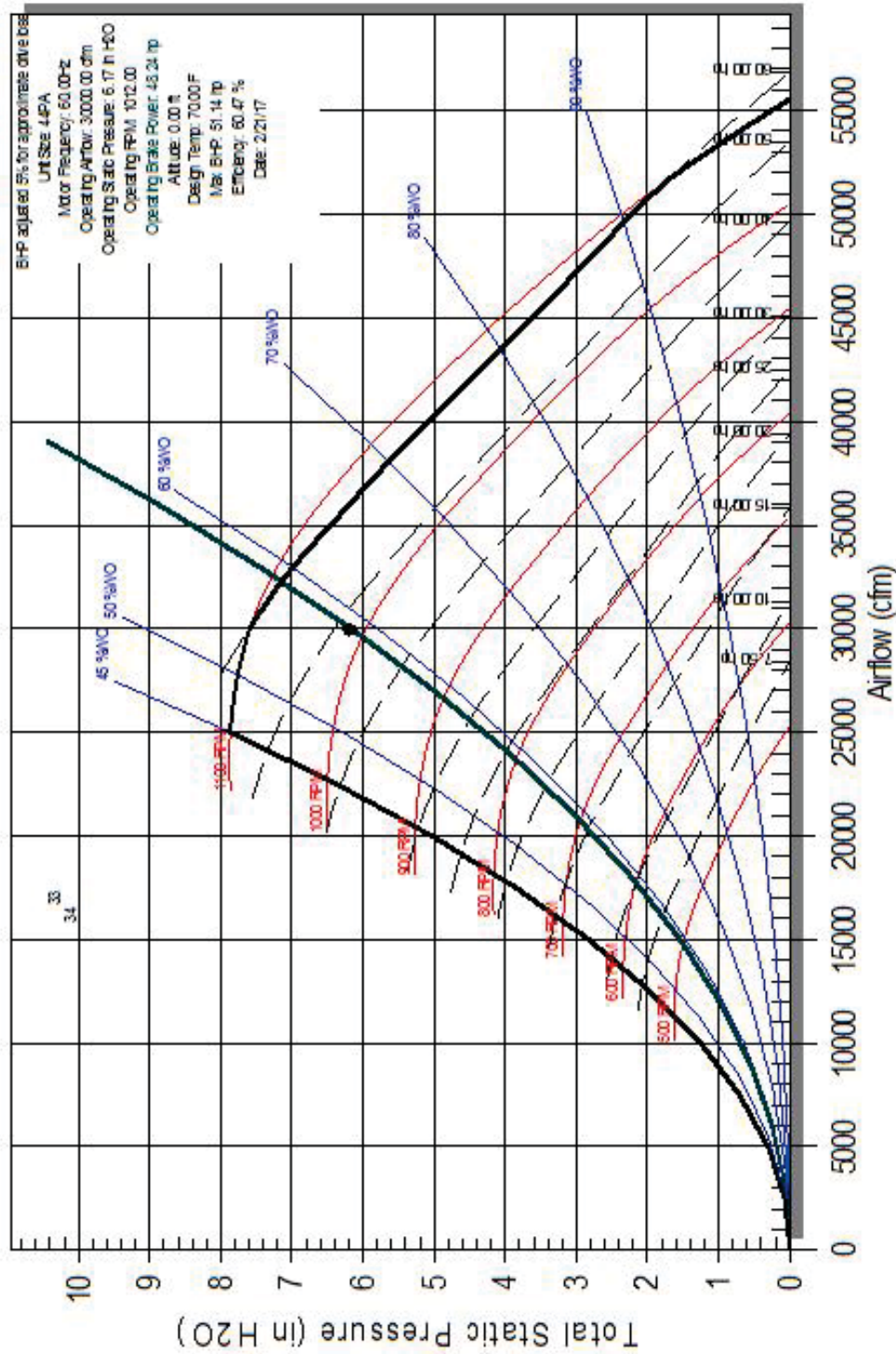
AHU-8 - Return

Size 57 DDP 27 inch AF M Press2x1 array 100% Width 9 blades - Single Fan

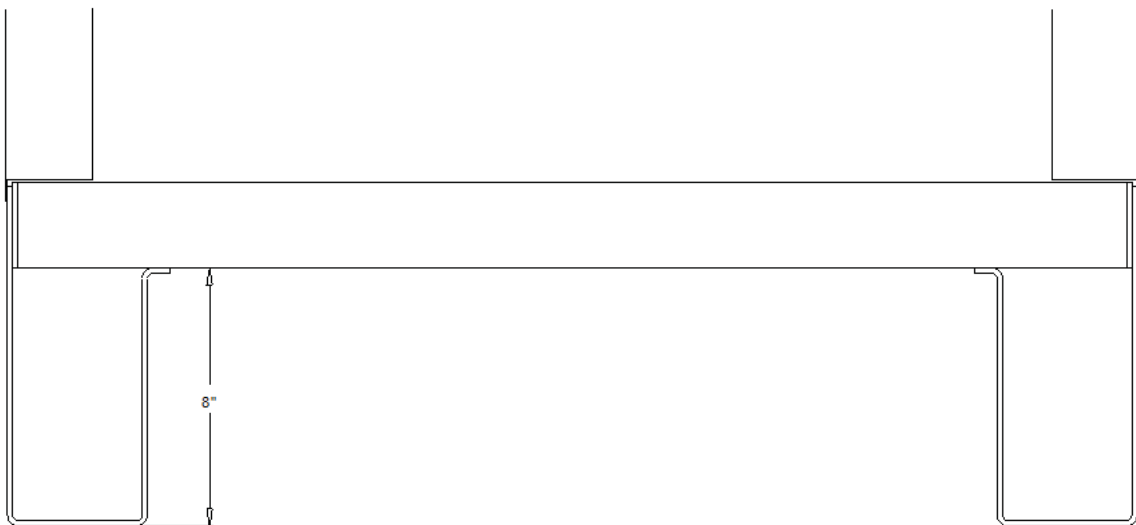


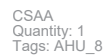


AHU-8 - Supply



Base Detail





Service Clearance for Control Box

Filter mixing box

Gas heat

Access door

Fan

VFD

Coil

UV Lights or TCAC

Note: At a minimum, these clearance dimensions are recommended on one side of the unit for regular service and maintenance. Refer to as-built submittal for locations of items such as filter access doors, coil, piping connections, motor locations, etc. Sufficient clearance must be provided on all sides of unit for removal of panels or section-to-section attachment. Clearance for starters, VFDs, or other high-voltage devices must be provided per NEC requirements.

Component	All Sizes
G (control box HV or LV > 18 pt or UC600 controller)	36
G (control box LV 18 pt or less)	13

Note: At a minimum, these clearance dimensions are recommended on one side of the unit for regular service and maintenance. Refer to as-built submittal for locations of items such as filter access doors, coil, piping connections, motor locations, etc. Sufficient clearance must be provided on all sides of unit for removal of panels or section-to-section attachment. Clearance for starters, VFDs, or other high-voltage devices must be provided per NEC requirements.

Component	3	4	6	8	10	12	14	17	21	21	25	25	30	30	35	35	40	40	40	50	50	57	57	66	80	100	120
A (filter)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58	
B (coil, humidifier)	48	59	59	66	77	82	87	87	95	77	95	77	109	87	115	96	128	96	141	110	141	110	156	156	170	197	
B (staggered coil)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	N/A	67	N/A	76	N/A	80	N/A	88	N/A	96	N/A	96	N/A	105	105	113	129	
C (UV Lights)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	52	56	58		
C (TCAC)	43	59	59	63	75	81	83	83	75	58	75	58	83	83	75	59	83	83	83	83	83	83	83	83	75	83	
D (External Starter, VFD, LV box or Overload box)	61	61	61	61	61	61	61	61	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	
D (Internal Starter or VFD)	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	
E (fan)	48	48	48	48	51	54	58	61	60	51	66	51	66	58	66	60	70	60	77	66	77	66	93	93	101	101	
F (Gas Heat, Ext Vestibule)	N/A	N/A	89	90	108	100	100	105	115	N/A	115	N/A	118	N/A	136	N/A	140	N/A	156	N/A	156	N/A	170	179	180	N/A	
F (Gas Heat Int Vestibule)	N/A	N/A	56	63	74	79	84	84	92	N/A	92	N/A	106	N/A	112	N/A	125	N/A	138	N/A	138	N/A	153	153	167	194	

Component

All Sizes

G (control box HV or LV > 18 pt or UC600 controller)

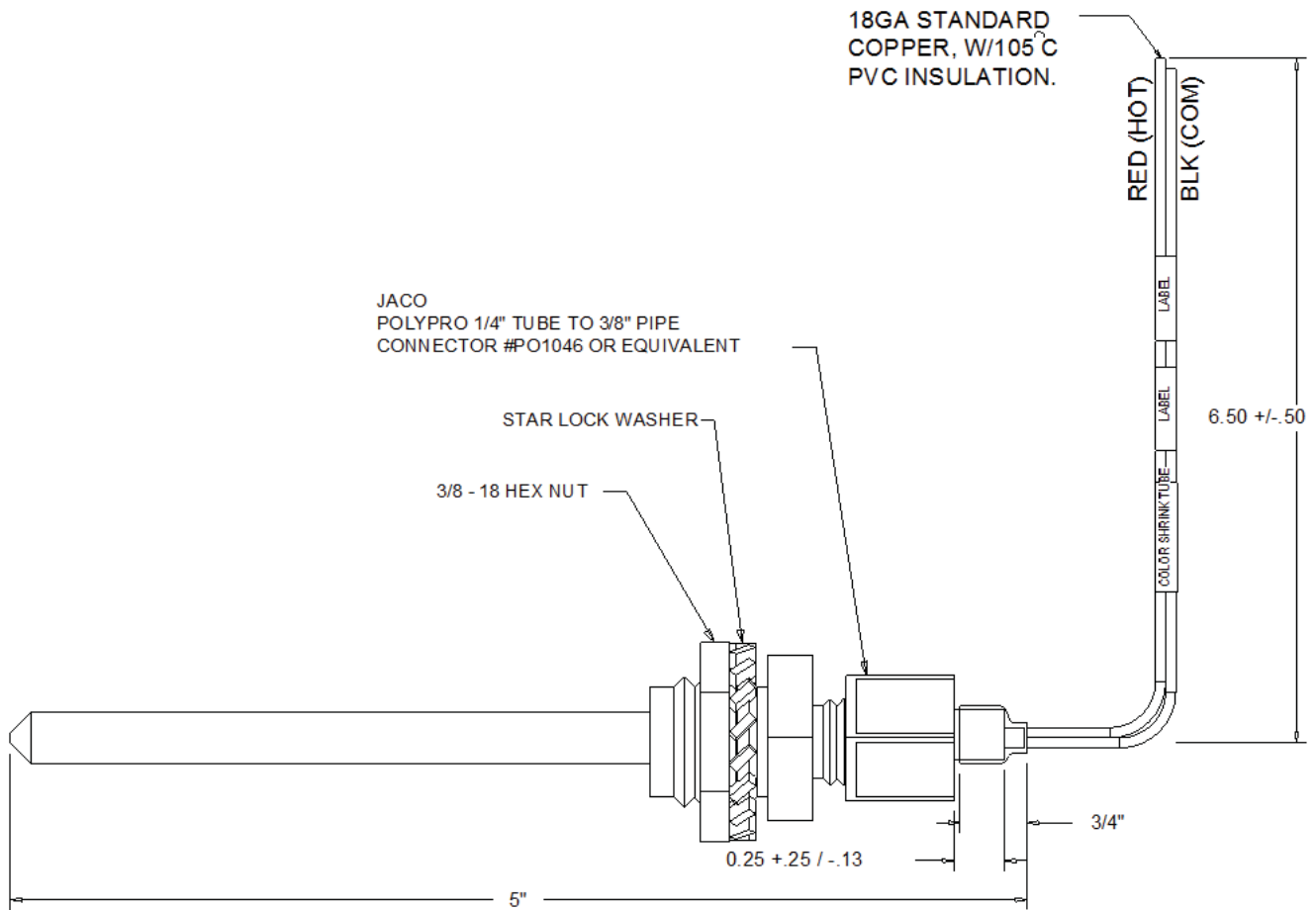
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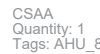
G (control box LV 18 pt or less)

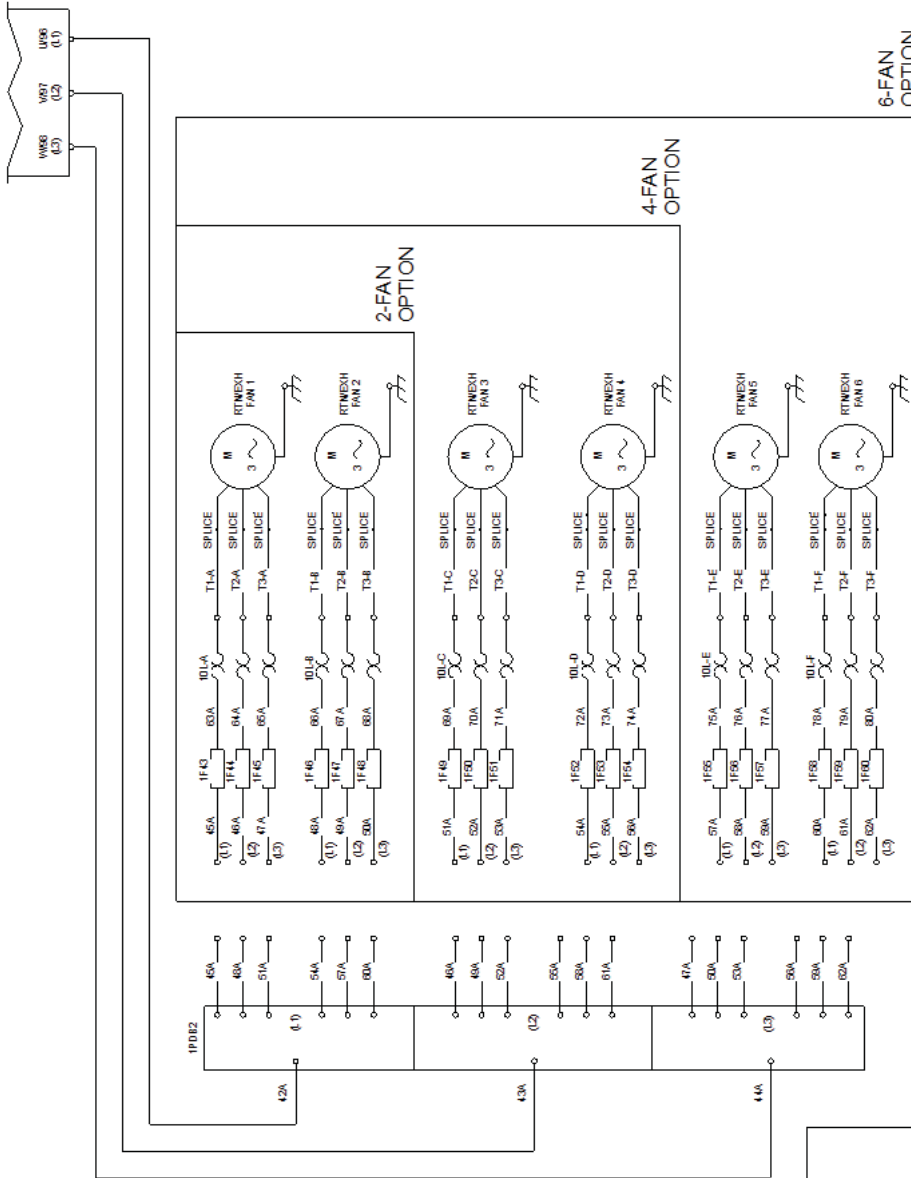
13

Outside Air Sensor

EXT	SENSOR RATING	BETA (0°C TO 50°C)	SHRINK TUBE COLOR	SENSOR
01	10,000 Ω TYPE II	3892°K	YELLOW	THERMISTOR







6-FAN
OPTION

NOTES

1. DASHED LINES INDICATE RECOMMENDED WIRING. IF OTHERS, PHANTOM LINES INDICATE CONTROL OPTION. REF. CONTROL PANEL SCHEMATIC FOR SPECIFIC DETAIL.
2. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) REQUIREMENTS. COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION RATING NOT LESS THAN 600V COPPER CONDUCTORS ONLY.
3. MINIMUM CIRCUIT CAPACITY, MAXIMUM FUSE SIZE AND DISCONNECT SIZE ARE CALCULATED BASED ON THE INVERTER INPUT LINE CURRENTS PER ARTICLE 430.2 OF THE NATIONAL ELECTRICAL CODE.
4. PROGRAM TERMINAL 18 IS RUN.
5. PROGRAM TERMINAL 27 INV. COASTING STOP.
6. CLOSURE TO RUN AUTO MODE OR BYPASS AUTO FOR OPTION VFD OR STARTER.
7. RELAY (S) CONTACTS SILVER-CADMIUM OXIDE, 16 HP GAMP @ 120VAC, 10 HP GAMP @ 240VAC. SEE 24V SCHEMATIC DIAGRAM FOR WIRING. CONNECTING AND ACTUAL QUANTITY OF TRANSFORMER RELAYS.
27. ATTACH GROUND OR EQUIPMENT GROUND.
28. AIRFLOW SWITCH INPUT. REFER TO LOW VOLTAGE SCHEMATIC.

DEVICE DESCRIPTION	LEGEND	DESCRIPTION
140V1	CIRCUIT BREAKER	
140V2	VFD FUSES	
140V3	START/STOP RELAY	
140V4	LOW LIMIT RELAY	
140V5	TERMINAL STRIP CONTROL CIRCUIT	
140V6	VFD CONTROLLER	
140V7	MOTORS (FAN ARRAY)	
140V8	MOTOR LINES (FAN ARRAY)	
140V9	START/STOP RELAY (FAN ARRAY)	
140V10	OVERLOAD RELAYS (FAN ARRAY)	
140V11	POWER DISTRIBUTION BLOCK (FAN ARRAY)	

WARNING

HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER.
FOLLOW LOCK-OUT AND TAG PROCEDURES
BEFORE SERVICING. INSURE THAT ALL
MOTOR CAPACITORS HAVE DISCHARGED
BEFORE SERVICING. REFER TO THE
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
OUVRIER LES SECTIONNERS À DISTANCE.
PUIS SUIVRE LES PROCÉDURES DE
VERIFICATION ET DES ÉTIQUETTES AVANT
SERVICER. ASSURER QUE TOUS LES
LES CONDENSATEURS DES MOTEURS SONT
DESCHARGES. DANS LE CAS D'UNITES
COMPLÉMENTAIRES ENTRAÎNEMENTS À
VITESSE VARIABLE SE REPORTER AUX
INSTRUCTIONS POUR LE DÉMONTAGE POUR
DESCHARGER LES CONDENSATEURS.
NE PAS RESPECTER LES MESURES DE
PRÉCAUTION PEUT ENTRAINER DES
BLESSURES GRAVES POUVANT ÊTRE
MORTELLES.

ADVERTENCIA

¡VOLTAJE PELIGROSO!
DESCONECTE TODA LA ENERGÍA ELÉCTRICA,
INCLUSO LAS DESCONEXIONES REMOVIENDO
Y ETIQUETANDO ANTES DE TRABAJAR.
SIGUIENDO LAS INSTRUCCIONES DE
LOS CAPACITORES DEL MOTOR ANTES
DESCARGANDO EL VOLTAJE ALMACENADO.
PARA LAS UNIDADES CON EJE DE
DIRECCIÓN DE VELOCIDAD VARIABLE,
SE DEBE DESCONECTAR ANTES PARA LA
DESCARGA DEL CONDENSADOR.
SI NO SE REALIZA LO ANTERIORMENTE
INDICADO, PODRÍA OCASIONAR LA MUERTE
O SERIAS LESIONES FÍSICAS.

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'EQUIPEMENT.

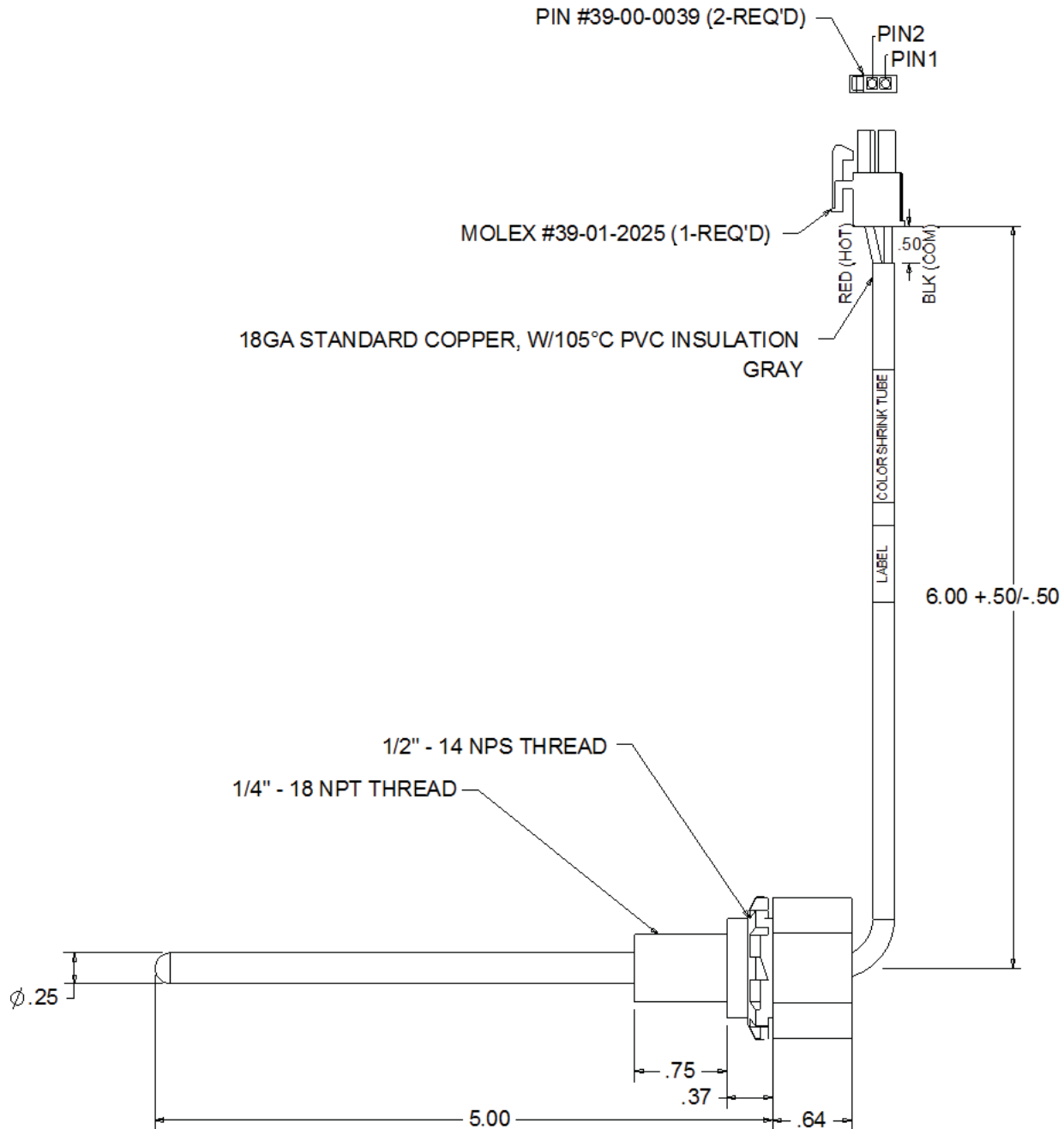
PRECAUCIÓN

¡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.

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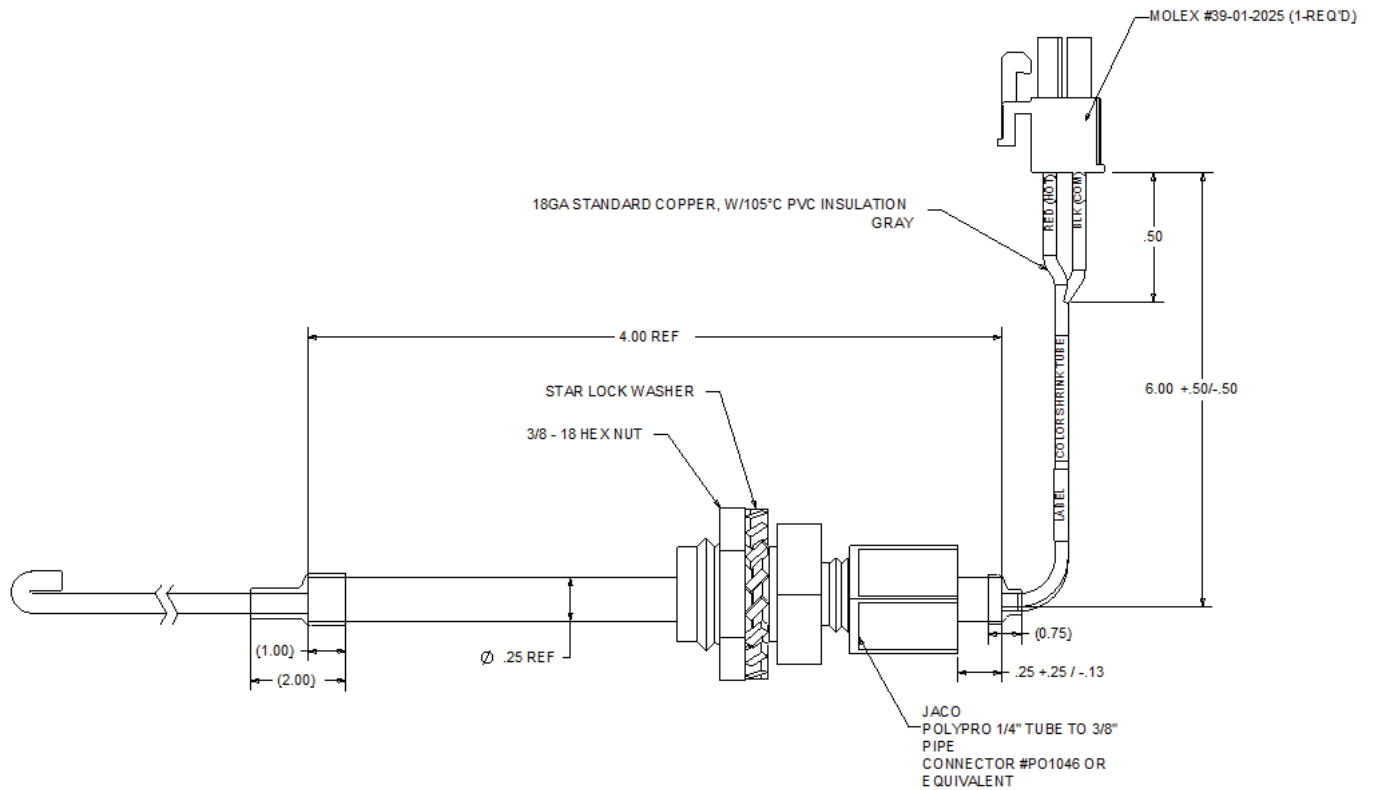
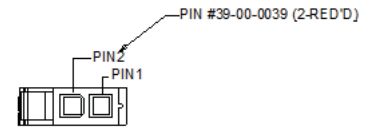
Discharge Temperature Sensor

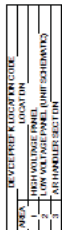
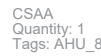
EXT	SENSOR RATING	SHRINK TUBE COLOR	SENSOR
01	10,000 Ω TYPE II	YELLOW	THERMISTOR



Averaging Temperature Sensor

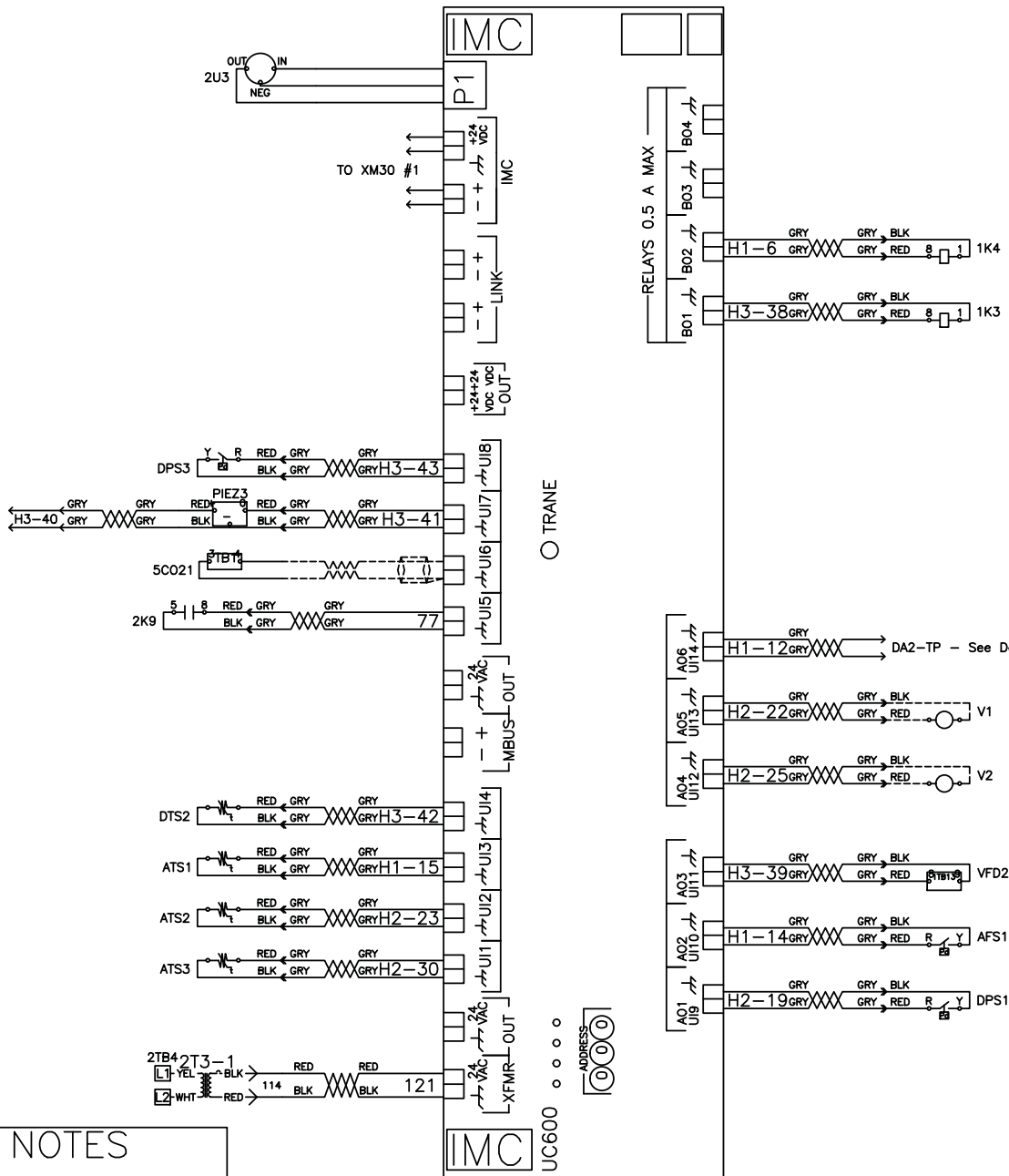
SENSOR ELEMENT	SENSOR RATING	TCR	SHRINK TUBE COLOR
RTD	1,000 Ω PT 385	3850 PPM/K	WHITE





CONTROLLER DETAIL 1 (MOUNTED IN MC05)

DEVICE NAME	DEVICE LOCATION
PREFIX	
1	HIGH VOLTAGE PANEL
2	LOW VOLTAGE PANEL
5	CUSTOMER INSTALLED



NOTES

UNLESS OTHERWISE NOTED, ALL SWITCHES ARE SHOWN AT 25C (77F), AT ATMOSPHERIC PRESSURE, AT 50% RELATIVE HUMIDITY, WITH ALL UTILITIES TURNED OFF, AND AFTER A NORMAL SHUTDOWN HAS OCCURRED.

DASHED LINES INDICATE FIELD WIRING BY OTHERS. SOLID LINES INDICATE WIRING BY TRANE

ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS

COMMUNICATION WIRE MUST BE TRANE PART NO.400-20-28 OR EQUIVALENT-MAXIMUM FOOT AGGREGATE RUN. CAUTION DO NOT RUN POWER IN THE SAME CONDUIT/WIRE BUNDLE WITH COMMUNICATION LINK

CONTROL RELAY(S) CONTACTS: SILVER CADMIUM OXIDE RATED AT 1/HP 5A 120VAC AND 1/3 HP 5A 240VAC

MP OR AH CONTROLLER OUTPUT RELAYS ARE RATED 24V AC/DC, 1A, 24VA PILOT DUTY. EXTERNAL RELAY REQUIRED FOR HIGHER VOLTAGE CIRCUITS

DRAWN BY Unknown	Trane	CSIA-SCHEMATIC
DATE 2/21/2017		UNIT SIZE: 57
SOFTWARE VERSION 1.3.9		UNIT TAG: AHU_8
DRAWING VERSION		

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
UTILISER QUE DES CONDUCTEURS EN COBRE!
LES BORNE DE LA UNITE NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.
FAIRE DÉFAUT A LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES DOMMAGES À L'ÉQUIPEMENT.

PRECAUCIÓN U+00D3N

UTILICE UNICAMENTE CONDUCTORES DE COBRE!
LAS TERMINALES DE LA UNIDAD NO ESTAN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.
NO SEGUIR LAS INSTRUCCIONES ANTERIORES PUEDE PROVOCAR DAÑOS EN EL EQUIPO

WARNING

HAZARDOUS VOLTAGE!
DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG OUT 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 CAN RESULT IN DEATH OR SERIOUS INJURY

AVERTISSEMENT

TENSION DANGEREUSE!
COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS A DISTANCE PLUS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUTS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE VARIABLE, SE RÉFÉRER AUX INSTRUCTIONS DE L'ÉQUIPEMENT 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 INCLUIDO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEGURESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON EJE DE DIRECCION DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR. EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRIA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.

WIRING DETAIL 1

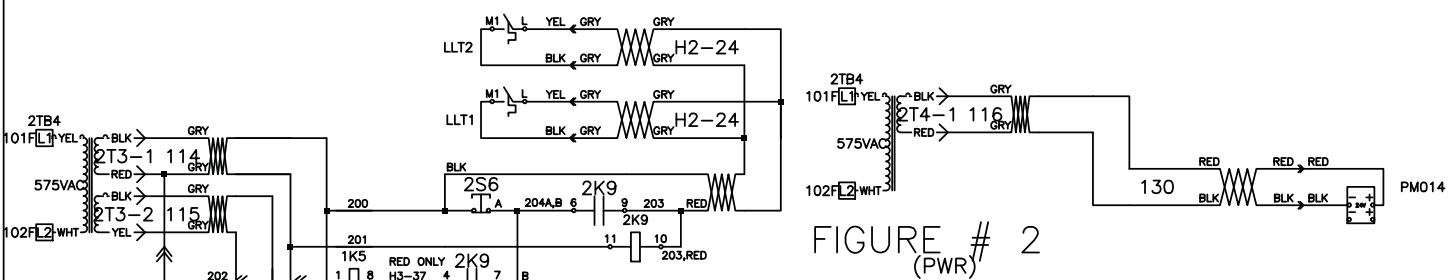
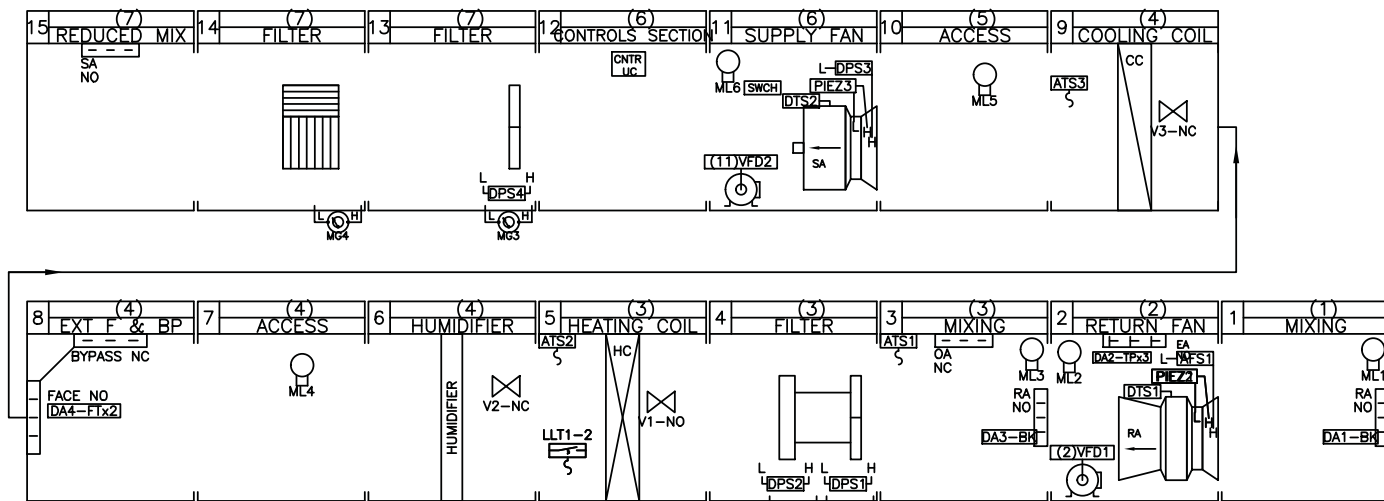


FIGURE # 1
(PWR)

FIGURE # 2
(PWR)

PRELIMINARY

DRAWN BY	Unknown
DATE	2/21/2017
SOFTWARE VERSION	1.3.9
DRAWING VERSION	

Trane

UNIT SIZE: 57

UNIT TYPE: AHU 8

WIRING DETAIL 2

FIGURE # 3

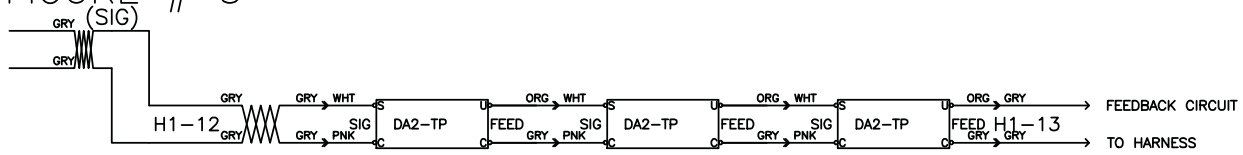
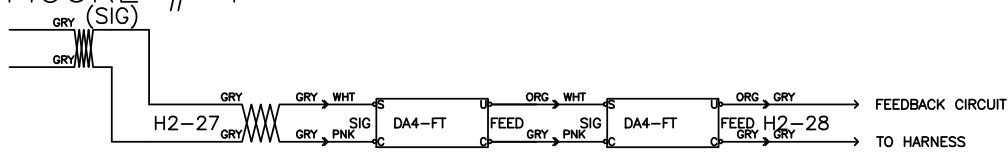


FIGURE # 4

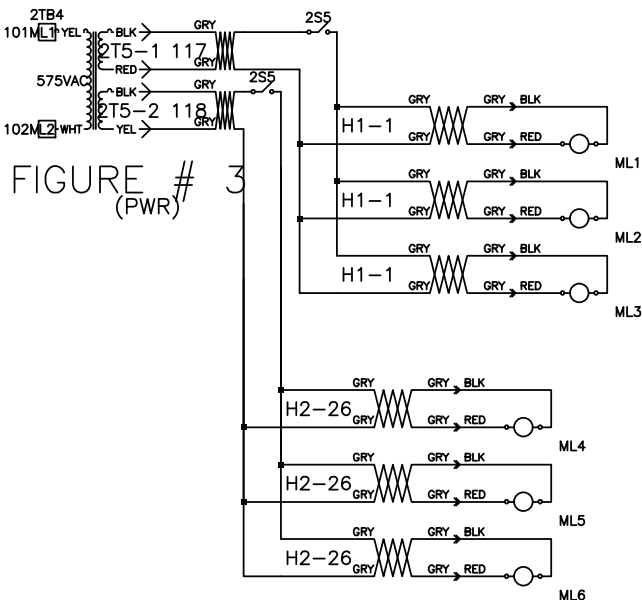


PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHEMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_8

MARINE LIGHT BOX

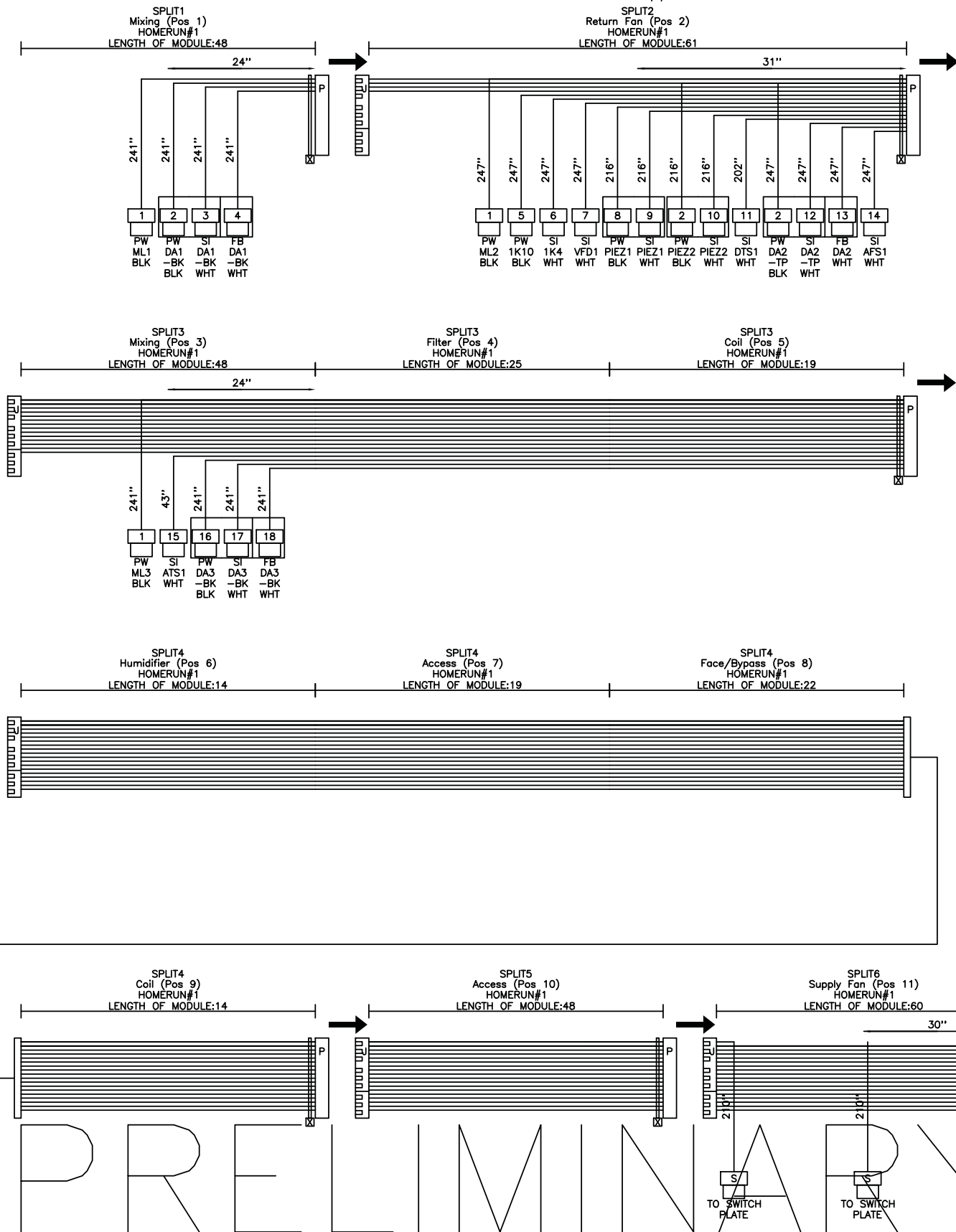
(SEPARATE BOX)



PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_8

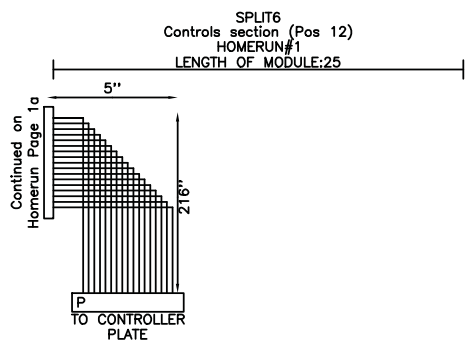
RACEWAY HOMERUN #1a DETAIL



DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

P=Connector with male terminals
J=Connector with female terminals
→ Or ← indicates direction of airflow

RACEWAY HOMERUN #1b DETAIL

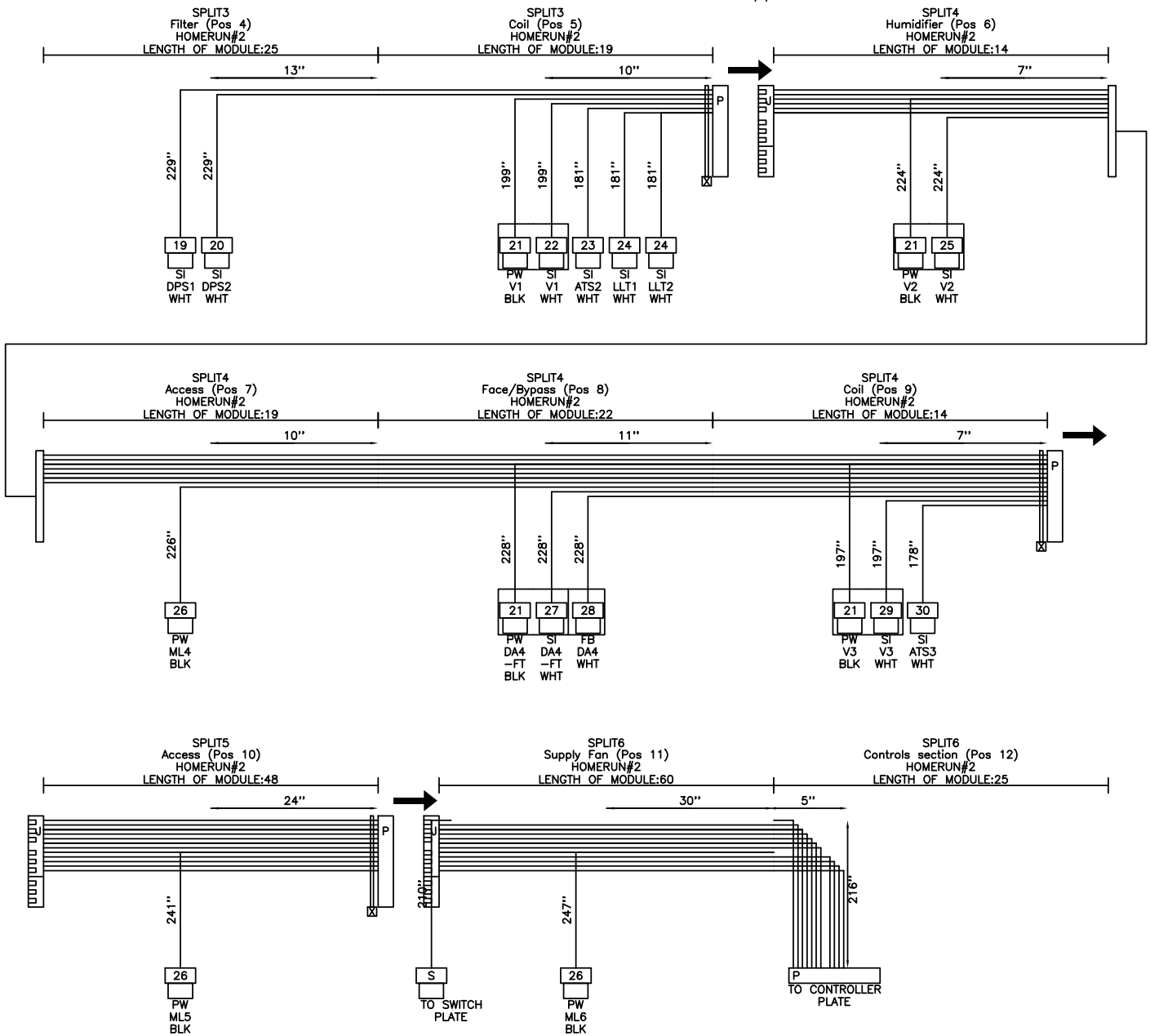


PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

→Or← indicates direction of airflow

RACEWAY HOMERUN #2 DETAIL

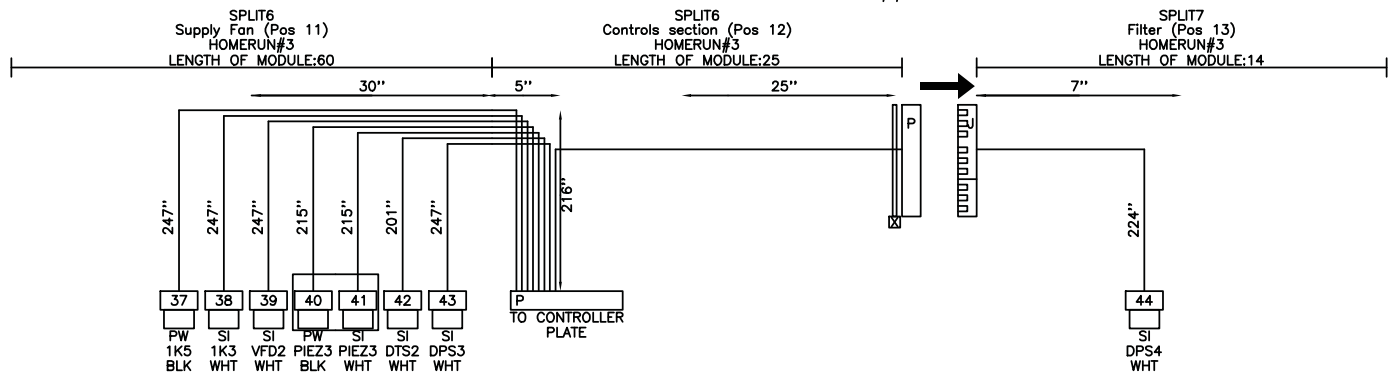


PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

P=Connector with male terminals
J=Connector with female terminals
→ Or ← indicates direction of airflow

RACEWAY HOMERUN #3 DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DRAWING VERSION		

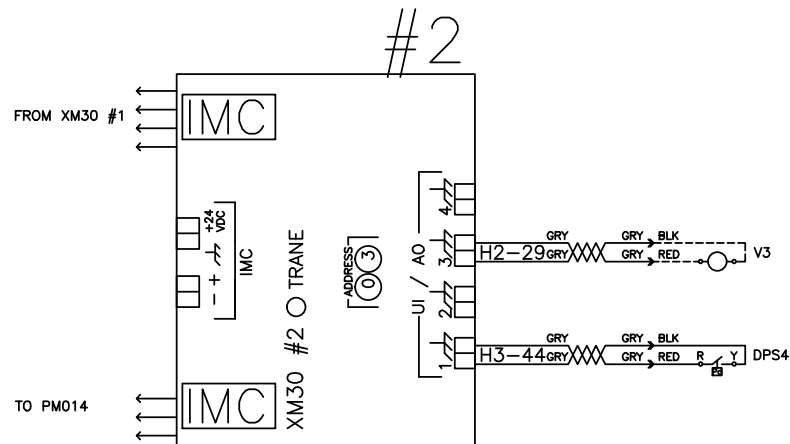
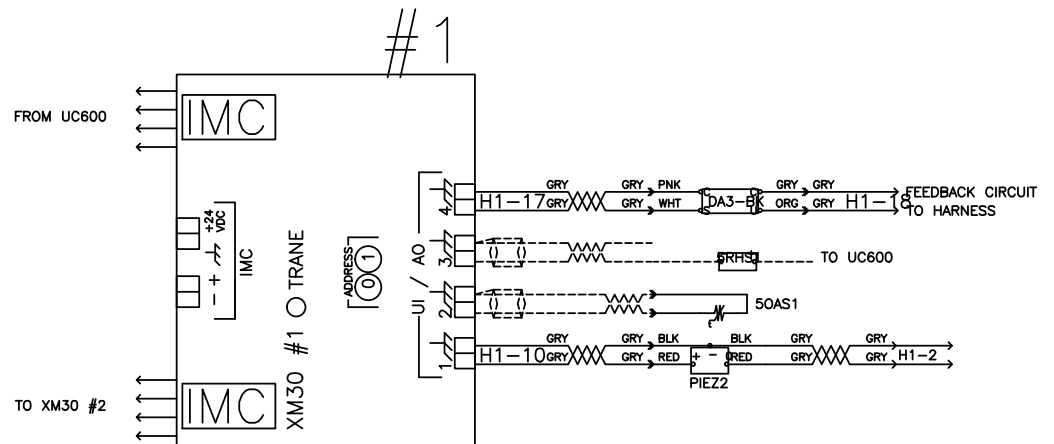
P=Connector with male terminals
 J=Connector with female terminals
 → Or ← indicates direction of airflow

RACEWAY HV HOMERUN #1 DETAIL



DRAWN BY Unknown	Trane	CSIA—SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.3		
DRAWING VERSION		

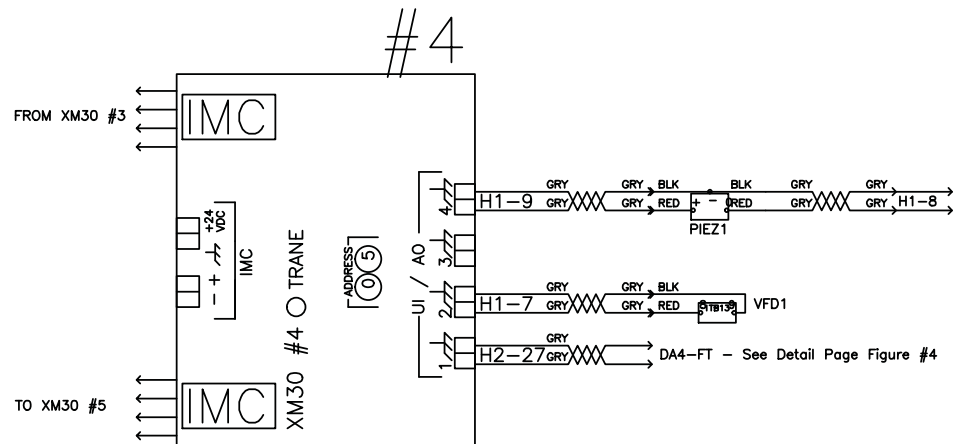
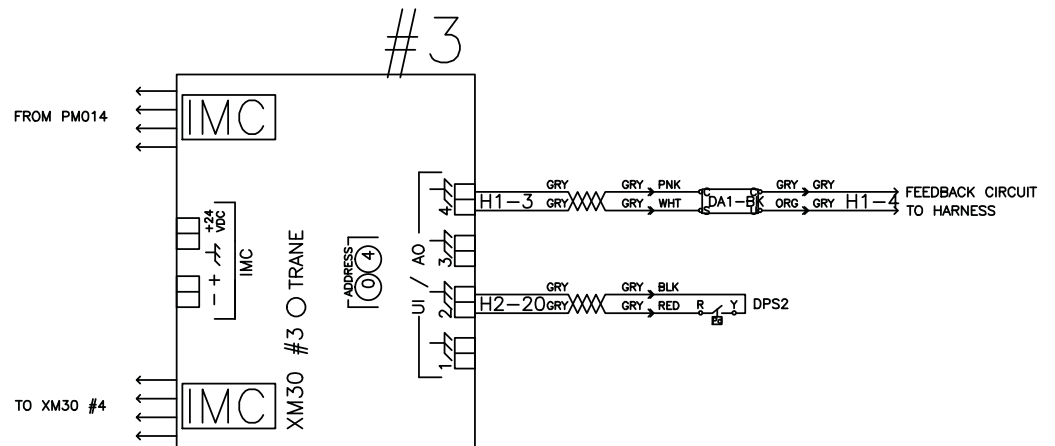
XM30 EXPANSION CARD DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

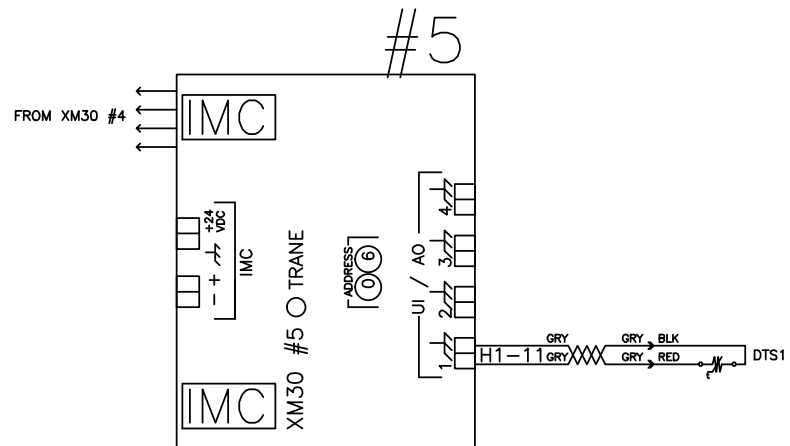
XM30 EXPANSION CARD DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	CSIA—SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

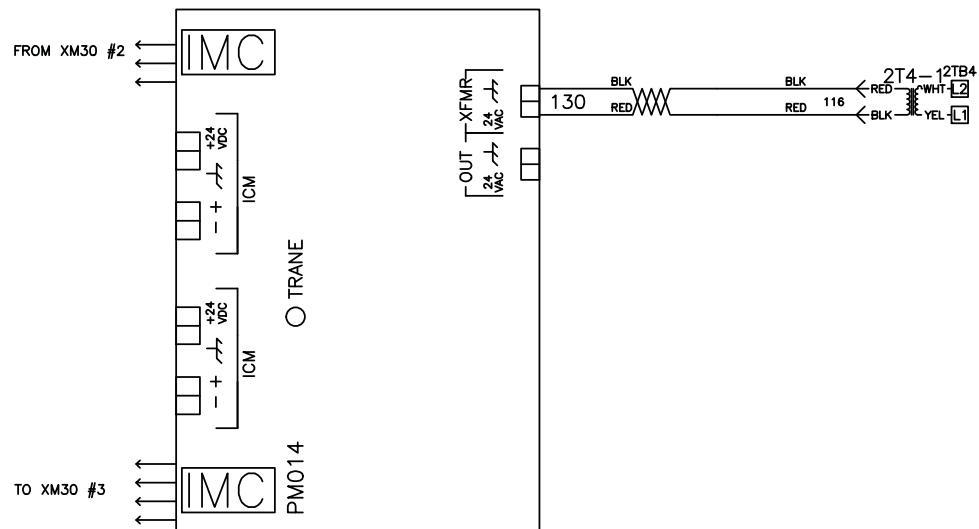
XM30 EXPANSION CARD DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHEMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_8

PM014 POWER SUPPLY DETAIL



PRELIMINARY

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_8

LEGEND DETAIL 1

POS#	DESCRIPTION	PT	LABEL	PWR HR-WIRE	SIGNAL HR-WIRE	XFMR	POWER VA
0	150VA TRANSFORMER		2T3				
0	150VA TRANSFORMER		2T4				
0	150VA TRANSFORMER		2T5				
0	Differential Press. Transmitter	P1	2U3				
0	UC600 Controller		UC	121		2T3-126	
0	Outside Air Sensor (S/W) (10K Type 2)	UI16	5OAS1				
0	Carbon Dioxide Sensor (S/W)	UI6	5CO21			2T3-11	
0	Relative Humidity Sensor (S/W RHO 3%)	UI17	5RHS1				
0	XM30 Expansion module		XM30-1				
0	XM30 Expansion module		XM30-2				
0	XM30 Expansion module		XM30-3				
0	XM30 Expansion module		XM30-4				
0	XM30 Expansion module		XM30-5				
0	PM014 Power supply		PM014	130		2T4-175	
1	Marine Light		ML1	H1-1		2T5-122	
1	Back Damper Actuator	AO18	DA1-BK	H1-2	H1-3	2T3-110	
2	Marine Light		ML2	H1-1		2T5-122	
2	Return/Exhaust Fan Low Limit Circuit Relay		1K10	H1-5		2T3-11	
2	Return/Exhaust Fan S/S	BO2	1K4		H1-6		
2	Return/Exhaust Fan Speed	AO20	VFD1		H1-7		
2	Flow meter	UI30	PIEZ1	H1-8	H1-9	2T3-12	
2	Flow meter	UI15	PIEZ2	H1-2	H1-10	2T3-12	
2	Discharge Air Sensor (10K Type 2)	UI31	DTS1		H1-11		
2	Fan Damper Actuator	AO6	DA2-TP	H1-2	H1-12	2T3-130	
2	Air Flow Switch	UI10	AFS1		H1-14		
3	Marine Light		ML3	H1-1		2T5-122	
3	Averaging Temperature Sensor (1K PT)	UI3	ATS1		H1-15		
3	Back Damper Actuator	AO10	DA3-BK	H1-16	H1-17	2T3-210	
4	Dirty Filter Switch	UI9	DPS1		H2-19		
4	Dirty Filter Switch	UI24	DPS2		H2-20		
4	Minihelic Gauge		MG1				
4	Minihelic Gauge		MG2				
5	VLV 2 NPT 46cv 2W wtr NO (S/D)	AO5	V1	H2-21	H2-22	2T3-210	
5	Averaging Temperature Sensor (1K PT)	UI2	ATS2		H2-23		
5	Low Limit (Leaving)		LLT1		H2-24	2T3-2	
5	Low Limit (Leaving)		LLT2		H2-24	2T3-2	
6	Valve Control	AO4	V2	H2-21	H2-25	2T3-210	
6	High limit sensor		HLT1				
7	Marine Light		ML4	H2-26		2T5-222	
8	Damper Actuator	AO19	DA4-FT	H2-21	H2-27	2T3-220	
9	VLV 4 FL 170cv 2W wtr NC (S/D)	AO13	V3	H2-21	H2-29	2T3-27	
9	Averaging Temperature Sensor (1K PT)	UI1	ATS3		H2-30		
10	Marine Light		ML5	H2-26		2T5-222	
11	Marine Light		ML6	H2-26		2T5-222	
11	Supply Fan Low Limit Circuit Relay		1K5	H3-37		2T3-21	
11	Supply Fan S/S	BO1	1K3		H3-38		
11	Supply Fan Speed	AO3	VFD2		H3-39		
11	Flow meter	UI7	PIEZ3	H3-40	H3-41	2T3-22	
11	Discharge Air Sensor (10K Type 2)	UI4	DTS2		H3-42		
11	Air Flow Switch	UI8	DPS3		H3-43		

PRELIMINARY

CONTINUED ON LEGEND PAGE 2

DRAWN BY Unknown	Trane	
DATE 2/21/2017		CSIA-SCHEMATIC
SOFTWARE VERSION 1.3.9		UNIT SIZE: 57
DRAWING VERSION		UNIT TAG: AHU_8

LEGEND DETAIL 2

CONTINUED FROM LEGEND PAGE 1

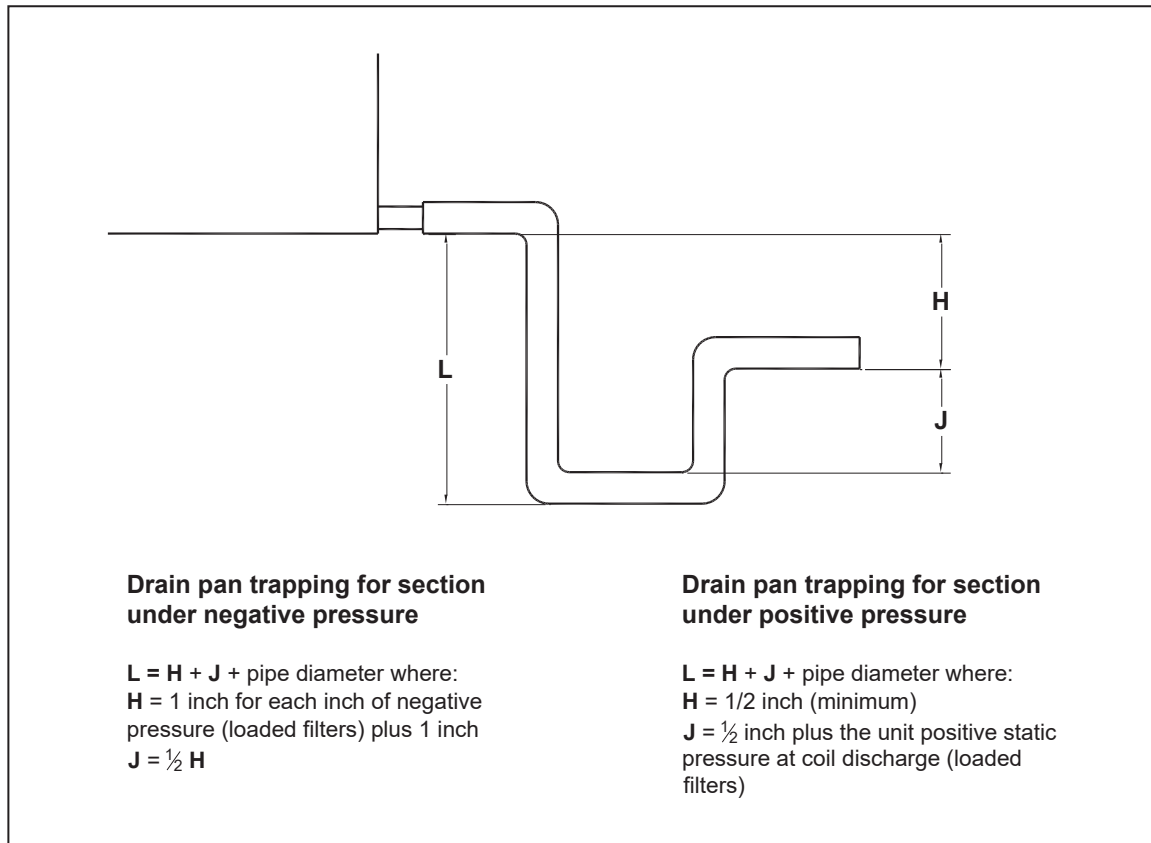
POS#	DESCRIPTION	PT	LABEL	PWR HR-WIRE	SIGNAL HR-WIRE	XFMR	POWER VA
12	Low Limit Reset Circuit Relay	UI5	2K9		77	2T3-22	
13	Dirty Filter Switch	UI19	DPS4		H3-44		
13	Minihelic Gauge		MG3				
14	Minihelic Gauge		MG4				

PRELIMINARY

DRAWN BY Unknown	Trane	CSIA-SCHEMATIC UNIT SIZE: 57 UNIT TAG: AHU_8
DATE 2/21/2017		
SOFTWARE VERSION 1.3.9		
DRAWING VERSION		

Accessory - Performance Climate Changer**Coil Valve Schedule****Item: A1, A2 Qty: 2 Tag(s): AHU-7, AHU-8**

Unit Tag(s)	Coil Type	Valve Style	Valve Type	Valve Position	Size
AHU-7, AHU-8	Heating coil [5]	Ball coil valve	Valve jack/ electronic (2-way)	Normally open	2in. NPT 46.0CV 200 psig valve - direct ship to jobsite by vendor
	Cooling coil [9]	Globe coil valve	Valve jack/ electronic (2-way)	Normally closed	4in. Flanged 170.0CV 150 psig valve - direct ship to jobsite by vendor

Accessory - Performance Climate Changer**Trap Schedule****Item: A1, A2 Qty: 2 Tag(s): AHU-7, AHU-8**

Unit Tag(s)	Unit Size	Entering Ext. Static Pressure (in H ₂ O)	Discharge Ext. Static Pressure (in H ₂ O)	Drain pan Section Location	Recommended Trap Dimensions ¹			Selected Baseraill Height (in) ¹
					H (in)	J (in)	L (in)	
AHU-7 ² , AHU-8 ²	Unit size 57	0.875	0.875	Coil section [9]	4.255	2.128	7.633	8.000

¹ To ensure proper condensate trapping the field installed housekeeping pad height is the responsibility of the contractor.

² The external static pressure used for fan selection was assumed to be divided 50% to entering duct external static pressure and 50% discharge external static pressure.

Accessory - Performance Climate Changer**Filter Schedule****Item: A1, A2 Qty: 2 Tag(s): AHU-7, AHU-8**

Unit Tag(s)	Unit Size	Filter Location	Filter Arrangement	Filter Depth	Filter Type	MERV Rating	Filter Quantity	Filter Size
AHU-7	Unit size 57	Filter section [4]	Short Bag/Cartridge filter	Bag/cartridge filter frame	Customer supplied 2" prefilter		15	24in.x24in.
					Customer supplied	Customer supplied	15	24in.x24in.
		Filter section [13]	Flat filter	2in. filter frame	No prefilter		-	-
					Customer supplied	Customer supplied	1	16in.x20in.
							4	16in.x25in.
							3	20in.x20in.
		Filter section [14]	HEPA filter	HEPA filter frame			12	20in.x25in.
					No prefilter		-	-
Customer supplied	Customer supplied				3	24in.x24in.		
				9	24in.x30in.			
AHU-8	Unit size 57	Filter section [4]	Short Bag/Cartridge filter	Bag/cartridge filter frame	Customer supplied 2" prefilter		15	24in.x24in.
					Customer supplied	Customer supplied	15	24in.x24in.
		Filter section [13]	Flat filter	2in. filter frame	No prefilter		-	-
					Customer supplied	Customer supplied	1	16in.x20in.
							4	16in.x25in.
							3	20in.x20in.
		Filter section [14]	HEPA filter	HEPA filter frame			12	20in.x25in.
					No prefilter		-	-
Customer supplied	Customer supplied				3	24in.x24in.		
				9	24in.x30in.			

unit shall be supplied with filter frames only.
pre-filter shall be suitable for Camfil model 30/30 MERV 8, 2"
final filter shall be suitable for Camfil model Durafil 2V
HEPA filter rack shall be suitable for Camfil Astrocel I HCX
Delete 2" prefilter section 13 in both AHU-7&8

Field Wiring - Performance Climate Changer**MCA MOP Schedule****Item: A1, A2 Qty: 2 Tag(s): AHU-7, AHU-8**

Unit Tag(s)	Circuit	Circuit Description	Voltage/Phase/Hz	MCA (A)	MOP (A)
AHU-7, AHU-8	1	Single point power	575/3/60	100.21	150.00

Tag Data - End Devices and Sensors (Qty: 8)

Item	Tag(s)	Qty	Description
B1	AHU-7 HEPA, AHU-8 HEPA	2	Differential Pressure Switch
B2	AHU-7 Return, AHU-7 Supply, AHU-8 Return, AHU-8 Supply	4	Duct Static Pressure Sensor
B3	AHU-7 DAH, AHU-8 DAH	2	Duct Humidity Sensors

Product Data - End Devices and Sensors**Item: B1 Qty: 2 Tag(s): AHU-7 HEPA, AHU-8 HEPA**

1 4190-6006 Air Differential Press. Switch

Item: B2 Qty: 4 Tag(s): AHU-7 Return, AHU-7 Supply, AHU-8 Return, AHU-8 Supply

1 4190-5051 Duct Static Press Sens Select (Fld)

Item: B3 Qty: 2 Tag(s): AHU-7 DAH, AHU-8 DAH

1 41907020 4-20mA 3% Duct Humidity Sens (Fld)

Unit Dimensions - End Devices and Sensors

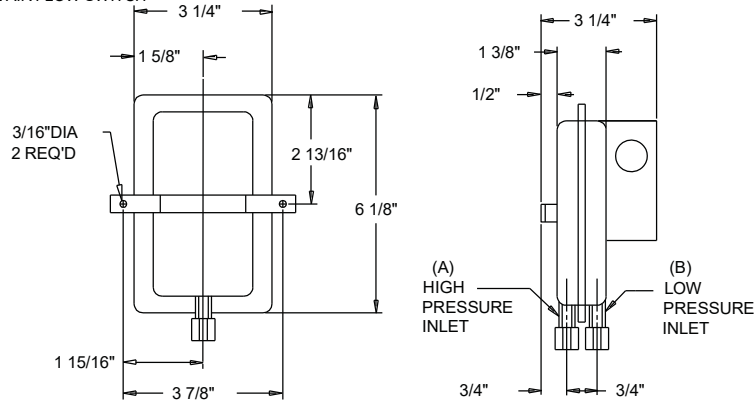
Item: B1 Qty: 2 Tag(s): AHU-7 HEPA, AHU-8 HEPA

ACCESSORY

4190-6006

TYPE OF ACCESSORY

DIFFERENTIAL PRESSURE AIR FLOW SWITCH



SPECIFICATIONS:

MECHANICAL

SETPOINT RANGE
MOUNTING POSITION
MAXIMUM PRESSURE
OPERATING TEMPERATURE

0.05 +/- .02" WC TO 12.0" WC [12.5 +/- 5.0 Pa TO 2990 Pa]
DIAPHRAGM IN ANY VERTICAL PLANE
1/2 PSI (14") [3448 Pa.]
-40.0 F to 180.0 F

ELECTRICAL

CONTACT
ELECTRICAL CONNECTION
ELECTRICAL RATING

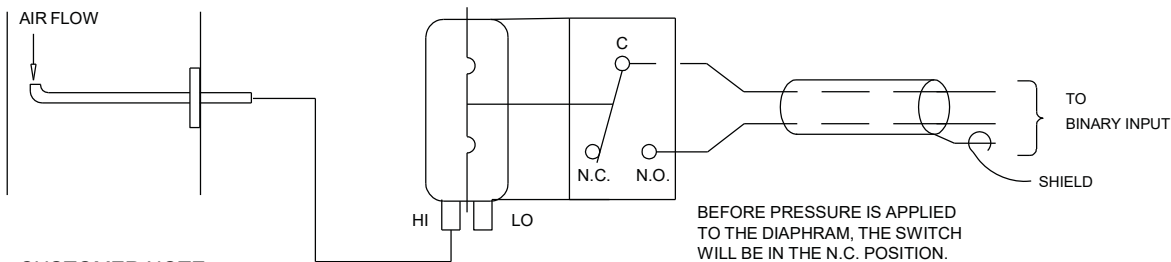
SPDT
SCREW TERMINALS
300 VA PILOT DUTY AT 115 TO 277 VAC
15 AMPS NON-INDUCTIVE 277 VAC, 60 HZ.
UL

AGENCY APPROVAL

MOUNTING NOTES:

1. SELECT A MOUNTING LOCATION FOR THE AIR FLOW SWITCH WHICH IS FREE FROM VIBRATION.
2. AVOID MOUNTING THE AIR FLOW SWITCH WITH THE SAMPLE LINE CONNECTIONS IN THE "UP" POSITION.
3. AIR FLOW SWITCH IS DESIGNED TO ACCEPT SAMPLE LINES OF 1/4" TUBING BY MEANS OF FERRULE AND NUT COMPRESSION TYPE CONNECTORS.
4. SELECT A MOUNTING LOCATION FOR THE SAMPLING PROBE DOWNSTREAM FROM TURBULENT AREAS. AVOID POSITIONS NEAR ELBOWS, OBSTRUCTIONS OR LARGE CHANGES IN DUCT AREA.
5. MOUNT PROBE TO FLAT DUCT SURFACE WITH #10 HARDWARE.

CUSTOMER CONNECTIONS



CUSTOMER NOTE:

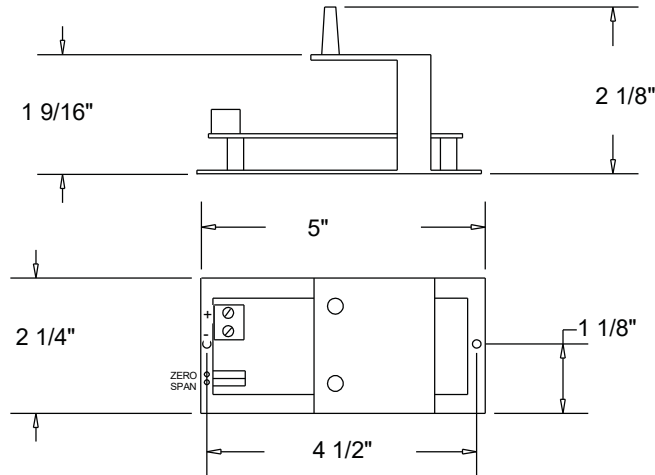
1. COMPONENTS AND WIRING SHOWN DASHED ARE FURNISHED AND INSTALLED BY CUSTOMER.
2. ALL CUSTOMER WIRING MUST BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODES AND LOCAL CODES.
3. BINARY INPUT WIRING MUST BE 18 GA. SHIELDED TWISTED PAIR (TRANE BASD WIRE #400-20-28, Q-4166 OR EQUIVALENT.) SHIELD MUST BE CUT BACK AND TAPED AT SWITCH.

<p>⚠ WARNING</p> <p>HAZARDOUS VOLTAGE! DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.</p>	<p>⚠ AVERTISSEMENT</p> <p>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.</p>	<p>⚠ CAUTION</p> <p>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.</p>
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Unit Dimensions - End Devices and Sensors**Item: B2 Qty: 4 Tag(s): AHU-7 Return, AHU-7 Supply, AHU-8 Return, AHU-8 Supply**

ACCESSORY
4190-5051

TYPE OF ACCESSORY
0 TO 5" W.C. SELECTABLE DUCT STATIC PRESSURE

**SPECIFICATIONS**

SENSING ELEMENT
PRESSURE MEDIA
PRESSURE RANGE

SOLID STATE GLASS-ON-SILICON CAPACITANCE SENSOR
DRY AIR OR INERT GASES
0 TO 5/0 TO 2.5/0 TO 1.25/-2.5 TO 2.5/-1.25 TO 1.25/- .625 TO .625

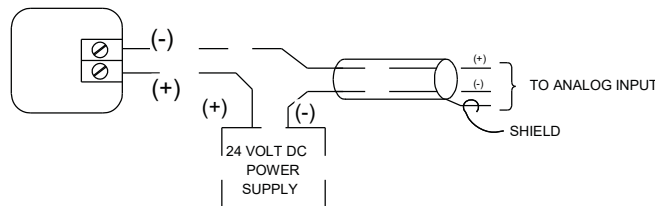
PRESSURE CONNECTIONS
MOUNTING POSITION
COMPENSATED TEMPERATURE RANGE
OPERATING TEMPERATURE
ACCURACY
LINEARITY

3/16" O.D. BARBED BRASS PRESSURE FITTING FOR 1/4" PUSH-ON TUBING
ANY
25.0 F to 150.0 F
0.0 F to 175.0 F
+/- .1%
+/- .1%

ELECTRICAL
WIRING CONNECTION
OUTPUT CHARACTERISTIC
VOLTAGE SOURCE



TERMINAL SCREW
4 TO 20 MA
12-40 VDC

CUSTOMER CONNECTIONS:**CUSTOMER NOTES:**

- COMPONENTS AND WIRING SHOWN DASHED ARE FURNISHED AND INSTALLED BY CUSTOMER.
- ALL CUSTOMER WIRING MUST BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODES AND LOCAL CODES.
- ANALOG INPUT WIRING MUST BE 18 GA. SHIELDED TWISTED PAIR (TRANE BASD WIRE #400-20-28, Q-4166 OR EQUIVALENT.) SHIELD MUST BE CUT BACK AND TAPED AT SENSOR.
- SENSOR REQUIRES A 24 VOLT DC POWER SUPPLY CAPABLE OF PROVIDING 20 MA.
- USE SCM-22 (3350-8022) WHEN USED WITH TRACER 100 OR TRS.

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.

ADVERTISSEMENT

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 ENTRAÎNER 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.

TOP

Unit Dimensions - End Devices and Sensors**Item: B3 Qty: 2 Tag(s): AHU-7 DAH, AHU-8 DAH**

ACCESSORY
4190-7020

TYPE OF ACCESSORY
3% DUCT RELATIVE HUMIDITY AND TEMPERATURE SENSOR

SPECIFICATIONS:**PACKAGE****MOUNTING****WIRING CONNECTION****SENSOR****HUMIDITY RANGE****HUMIDITY ACCURACY****OPERATING TEMPERATURE****SENSING ELEMENT****OUTPUT CHARACTERISTIC****SUPPLY VOLTAGE (VDC)****DRIFT RATE****DUCT****TWO POSITION TERMINAL BLOCK**

0 to 99% R.H. RANGE

+/-3% R.H. OVER 20-95% R.H. AT 77.0 F

-20.0 F to 140.0 F

RESISTIVE POLYMER

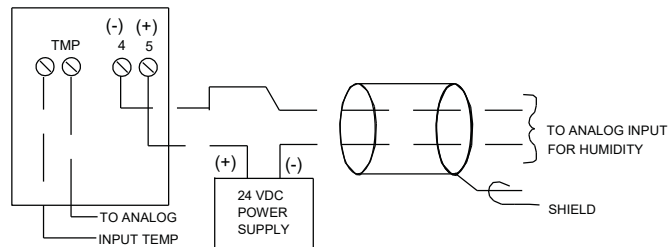
4 TO 20 MA FOR 0-100% R.H.

18-36

LESS THAN 1%/YEAR

MOUNTING NOTES:

1. PLACE THE DUCT HUMIDITY SENSOR IN AN AREA OF THE DUCT WITH GOOD AIR FLOW.
2. MOUNT THE SENSOR SO THE 9" PROBE IS LOCATED IN THE CENTER OF THE DUCT.
3. THE TRANSMITTER SHOULD BE MOUNTED AWAY FROM FANS, CORNERS, HEATING AND COOLING COILS, SPARGING VALVES AND OTHER EQUIPMENT THAT WILL AFFECT THE RELATIVE HUMIDITY MEASUREMENT.

CUSTOMER CONNECTIONS:**CUSTOMER NOTES:**

1. COMPONENTS AND WIRING SHOWN DASHED ARE FURNISHED AND INSTALLED BY CUSTOMER.
2. ALL CUSTOMER WIRING MUST BE IN ACCORDANCE WITH NATIONAL ELECTRIC CODES AND LOCAL CODES.
3. ANALOG INPUT WIRING MUST BE 18 GA. SHIELDED TWISTED PAIR (TRANE BASD WIRE #400-20-28, Q-4166 OR EQUIVALENT) OR APPROVED 22 GA. WIRE. SHIELD MUST BE CUT BACK AND TAPED AT SENSOR.

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

Item	Tag(s)	Qty	Description	Model Number
A1	AHU-7	1	Performance Climate Changer (CSAA)	CSAA057UA
A2	AHU-8	1	Performance Climate Changer (CSAA)	CSAA057UA

Field Installed Option Description	Part/Ordering Number
3% outdoor humid. sensor-ships with unit	
Outside air sensor - ships with unit	
Duct mounted CO2 sensor-ships with unit	
2in. NPT 46.0CV 200 psig valve - direct ship to jobsite by vendor	
Duct humidity sensor-ships with unit	
High limit humid. sensor-ships with unit	
4in. Flanged 170.0CV 150 psig valve - direct ship to jobsite by vendor	

Product Family - End Devices and Sensors

Item	Tag(s)	Qty	Description	Model Number
B2	AHU-7 Return, AHU-7 Supply, AHU-8 Return, AHU-8 Supply	4	Duct Static Pressure Sensor	

Field Installed Option Description	Part/Ordering Number
4190-5051 Duct Static Press Sens Select	4190-5051

Item	Tag(s)	Qty	Description	Model Number
B3	AHU-7 DAH, AHU-8 DAH	2	Duct Humidity Sensors	

Field Installed Option Description	Part/Ordering Number
41907020 4-20mA 3% Duct Humidity Sens	41907020