



# Resubmittal

Trane U.S. Inc.

**Engineer:** Allied Engineering

**Date:** September 4, 2013

**Prepared For:**  
Riverside Mechanical Inc  
27 Rebecca Way  
Falmouth, ME 04105 U.S.A.

**Job Name:**  
Casco Bay Terminal Building

**Customer P.O. Number:**  
20155-4350-1

**Trane Job Number:**  
A223251

**Specification Section:**  
237313

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

Qty	Product	Tag(s)
1	Trane Blower Coil Air Handler	AHU-1

**Please note:**

- Mechanical contractor to coordinate piping and access location – either left or right side. Determined with the supply air blowing in your face.

***This resubmittal for approval replaces the original dated 7/26/13 returned as “REVIEWED W/ NOTES, Resubmission Required”:***

- ***The unit has been reselected for a LAT of 102°F. There are no physical changes to the unit as previously submitted. Only the performance resulting from a lower water flow.***

***This resubmittal completely replaces the original dated 7-26-13 and is submitted for your approval.***

**Jeff Charette**  
Trane U.S. Inc. dba Trane  
860 Spring Street, Unit 1  
Westbrook, ME 04092  
Phone: (207) 239-3401  
Fax: (207) 828-1511

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

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**Tag Data - BCXC Blower Coil Air Handler (Qty: 1)**

Item	Tag(s)	Qty	Description	Model Number
A1	AHU-1	1	BCHC090	BCHC090E2**A1L06N000000B0100000000000006

**Product Data - BCXC Blower Coil Air Handler**


**Item: A1 Qty: 1 Tag(s): AHU-1**

- Horizontal Configuration
- Unit Size 90
- 208/60/3
- Foil Faced Insulation 1"
- Motor, drive & control box on Same Side as Coil & Drainpan Connection
- Polymer Drainpan - Right Hand Coil & Drainpan Connections
- 2 Row High Capacity Coil
- 2 Horsepower w/ spare belt
- 878-1136 rpm 60 hz
- 2" Pleated MERV 8 Throwaway Filter – 2 SETS
- Control Interface

**Performance Data - BCXC Blower Coil Air Handler**

**BCXC Blower Coil Air Handler**

**Job Information**

		Casco Bay Terminal Building Portland ME (B16)Daniel Broderick	
Tag	AHU-1 test 2	Unit size	90
Model Number	BCHC090E2**A1L06N000000B01	Unit configuration	Horizontal
Quantity	1		

**Unit Information**

Design airflow	3250 cfm	Unit length	50.000 in
Elevation		Unit width	48.000 in
Filter type	2" Pleated MERV 8 TA	Unit height	28.000 in
Accessory section	None	Rigging weight	214.2 lb
Main coil type	None	Installed weight	227.4 lb

**Motor/Electrical Information**

Unit voltage	208/60/3	Min circuit ampacity	7.75 A
Motor power	2 hp	Max fuse size	15.00 A
Actual motor power	1.748 hp	Full load amps	6.20 A
Drives	878-1136 rpm 60 hz	Lock rotor amps	38.50 A
ESP	1.000 in H2O	Outlet velocity	2748 ft/min
TSP	1.431 in H2O		

**Coil Information**

Coil #1	2R High Capacity Preheat		
Coil #2	None		
	<u>Main Cooling</u>	<u>Main Heating</u>	<u>Auxiliary Heating</u>
Total capacity			148.91 MBh
Sensible capacity			
Entering dry bulb			60.00 F
Entering wet bulb			
Leaving dry bulb			102.25 F
Leaving wet bulb			
Fluid type			
Fluid concentration			
Fluid freeze pt			32.00 F
Entering fluid temp	45.00 F		170.00 F
Leaving fluid temp			115.79 F
Fluid flow rate			5.50 gpm
Fluid PD			0.45 ft H2O
Electric heat kW			None
Face velocity			520 ft/min
Coil venting required	Yes		

**Controls Information**

Pre-Packaged Solutions ID		Control type	Control Interface
Control option 2	None	Control option 3	None
Factory mounted control options	None	Outside air mixing box dmp actuator	None

8/29/2013

**Mechanical Specifications - BCXC Blower Coil Air Handler****Item: A1 Qty: 1 Tag(s): AHU-1****BCHC General**

The product line consists of a horizontal air handling unit and mixing box. Air-handling airflow data is certified in accordance with AHRI standard 430. Acoustical data is tested in accordance with AHRI 260. The unit is UL 1995 listed in U. S. and Canada and complies with NFPA 90A. Air handlers consist of a hydronic and/or DX coil, drain pan, and centrifugal fan with motor and drive mounted in a common cabinet. Drive location and coil connections are independent for the same or opposite side location. Air handlers are provided with knockouts in all four corners for installing the unit suspended from the ceiling with threaded rods. Unit and accessories are insulated with 1" 1.5 lb/cu. ft density fiberglass insulation. 1" foil faced insulation is also available. Large motor access panels are provided on both sides of the unit and accessories.

**Casing**

Casings (structural components) are constructed of 18-gauge galvanized steel, insulated with 1" 1.5 lb/cu. ft density fiberglass fire resistant and odorless glass fiber material to provide thermal and acoustical insulation. Fan housing sides are directly attached to the air handler top and bottom panels strengthening the entire unit assembly. Coil access panels are located on both sides of the air handler and allow easy removal of the internal coils and drain pan. Main access panels provide generous access to the fan, motor and drive from both sides of the air handler.

**Foil Faced Insulation**

The interior surface of the unit is acoustically and thermally lined with 1" 2.0 lb/cu. ft R-Value of 4.3 density glass fiber with a foil facing. The insulation is UL listed and meets NFPA-90A, UL 181 and bacteriological C665 standards.

**Fan**

The fans are forward curved, centrifugal blower type equipped with heavy-duty adjustable speed V-belt drives. The fan shaft is supported by heavy-duty, permanently sealed ball bearings. All fans are dynamically balanced. All air handlers have a single fan.

**2" Pleated Throw-Away Merv8 Filter**

The units are equipped with 2" flat pleated media filters with a rated average dust spot efficiency of no less than 35 to 40 percent when tested in accordance with ASHRAE 52.1 atmospheric dust spot method and a Merv8 rating based on ASHRAE Standard 52.2.

**60 Hertz Motor**

A 60 Hertz, 1750 RPM motor has a plus or minus 10% voltage utilization range. The motor is open drip-proof with permanently sealed ball bearings, internal overload protection, and minimum 1.15 service factor and size 56 resilient base frames. The motor is factory installed and wired to the air handler junction box.

**Polymer Drain Pan**

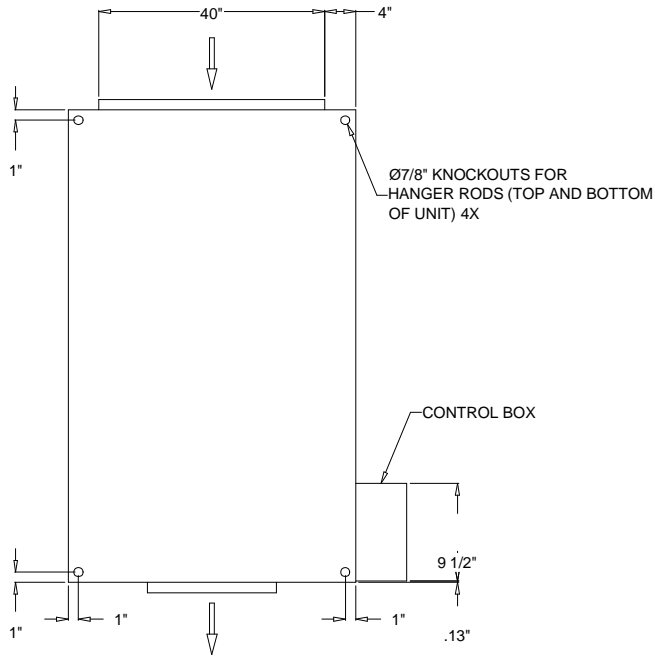
The drain pan is noncorrosive and double-sloped to allow condensate drainage. The drainpan construction is polymer. Coils mount above the drain pan, not in the drain pan - thus allowing the drain pan to be fully inspected and cleaned. The drain pan can also be removed for cleaning. The drain pan connections are unthreaded 3/4" schedule 40 PVC for solvent bonding. The main drain connection is at the lowest point of the drain pan. An auxiliary drain connection is provided on the same side as the main connection.

**Thermostat Control Interface**

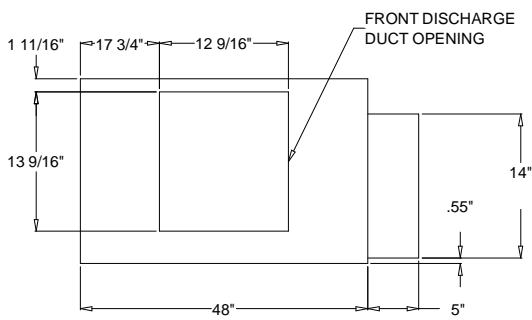
The thermostat control interface is intended to be used with a field supplied low voltage thermostat or controller. The control box contains a line voltage to 24 volt transformer; a one, two, or three-pole fan contactor; and a disconnect switch. The wires from the fan contactor and the low voltage side of the transformer are pulled and terminated on the inside of the two-sided terminal strip. The end devices are mounted and the wires are pulled and terminated on the inside of the two-sided terminal strip. All customer connections other than power are on the outside of the two-sided terminal strips.

**Unit Dimensions - BCXC Blower Coil Air Handler**

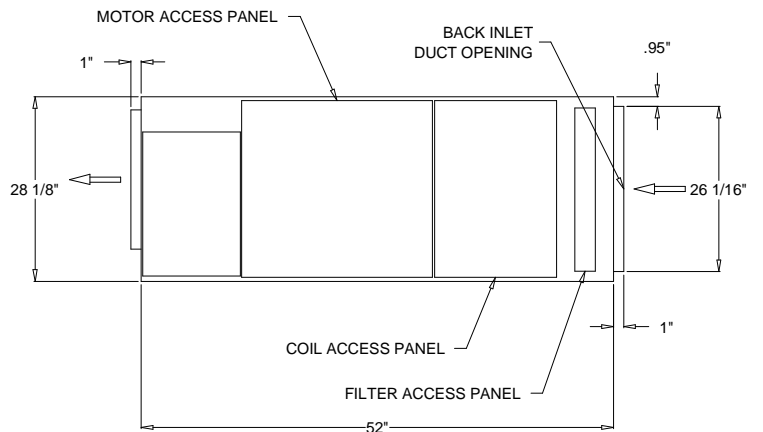
Item: A1 Qty: 1 Tag(s): AHU-1



TOP VIEW



FRONT VIEW

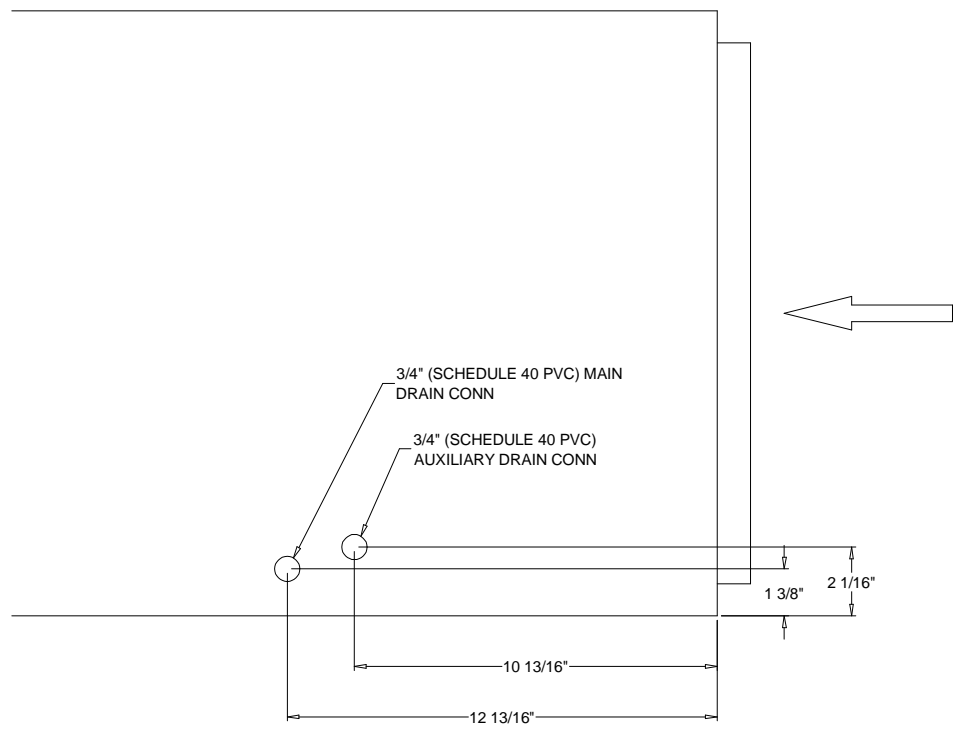


RIGHT VIEW

**NOTES:**

1. ACCESS PANELS ARE LOCATED ON BOTH SIDES OF THE UNIT TO PROVIDE ACCESS TO THE UNIT'S INTERNAL COMPONENTS.
2. CONTROL BOX IS FACTORY MOUNTED ON DRIVE SIDE AND PROVIDED WITH 7/8" DIAMETER KNOCKOUTS FOR FIELD WIRING.
3. ARROWS INDICATE THE DIRECTION OF AIRFLOW.

**Unit Dimensions - BCXC Blower Coil Air Handler**  
Item: A1 Qty: 1 Tag(s): AHU-1



RIGHT VIEW

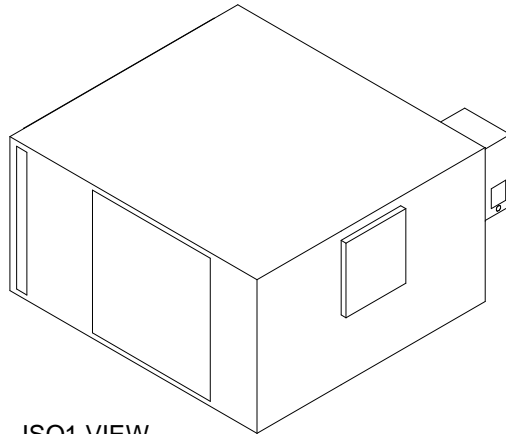
NOTES:

- 1. ALL DIMENSIONS ARE SHOWN FROM THE BOTTOM REAR CORNER OF UNIT.
- 2. STUBOUTS PROTRUDE 2 1/8" FROM EXTERIOR CASING OF UNIT.
- 3. ARROW INDICATES THE DIRECTION OF AIRFLOW.
- 4. DRAIN CONNECTIONS ARE UNTHREADED.

**Unit Dimensions - BCXC Blower Coil Air Handler**  
**Item: A1 Qty: 1 Tag(s): AHU-1**

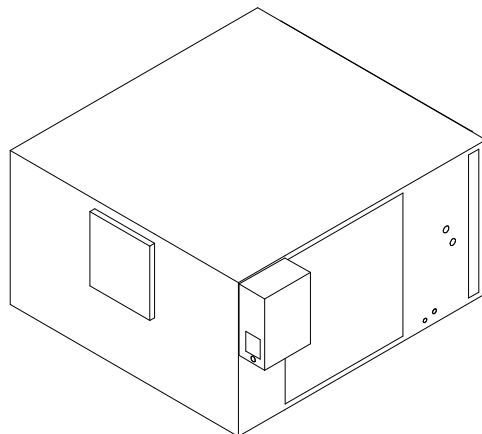
NOTES:

1. WEIGHT OF BASIC UNIT INCLUDES ONLY CABINET, FAN, AVERAGE DRIVE, WIRING AND AVERAGE FILTER.
2. WEIGHT OF STEAM COIL MODULE INCLUDES ONLY CABINET WITH AVERAGE FILTER.
3. BEFORE PREPARING ANY UNIT OR ACCESSORY MODULE FOR LIFTING, ESTIMATE THE APPROXIMATE CENTER OF GRAVITY AND TEST LIFT THE UNIT OR ACCESSORY MODULE TO DETERMINE BALANCE AND STABILITY. USE A PROPER RIGGING METHOD SUCH AS STRAPS, SLINGS OR SPREADER BARS FOR PROTECTION AND SAFETY BEFORE HOISTING THE UNIT OR ACCESSORY MODULE.
4. DO NOT LIFT UNITS OR ACCESSORY MODULES IN WINDY CONDITIONS OR ABOVE INSTALLATION PERSONNEL. FAILURE TO PROPERLY LIFT UNIT OR ACCESSORY MODULE COULD RESULT IN DEATH, SERIOUS INJURY, EQUIPMENT DAMAGE OR PROPERTY-ONLY DAMAGE.
5. DO NOT RIG OR LIFT UNITS OR ACCESSORY MODULES WITH FORK LIFT FORKS.
6. ASSEMBLY OF THE UNIT MUST BE PERFORMED AT THE INSTALLATION SITE. ALWAYS RIG UNITS AND ACCESSORY MODULES AS SHIPPED FROM THE FACTORY.



ISO1 VIEW

UNIT, COIL & ACCESSORY MODULE WEIGHTS																	
BASIC UNIT	COIL 1 DRY	COIL 1 WET	COIL 2 DRY	COIL 2 WET	MOTOR	ELECTRIC HEATER	MIXING BOX	ANGLED FILTER BOX	ANGLED FILTER MIXING BOX								
174.8 lb	39.4 lb	52.6 lb			34.0 lb												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>FILTER ACCESS MODULE</th> <th>STEAM COIL MODULE</th> </tr> <tr> <td></td> <td></td> </tr> </table>		FILTER ACCESS MODULE	STEAM COIL MODULE									<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>STEAM COIL DRY</th> <th>STEAM COIL WET</th> </tr> <tr> <td></td> <td></td> </tr> </table>		STEAM COIL DRY	STEAM COIL WET		
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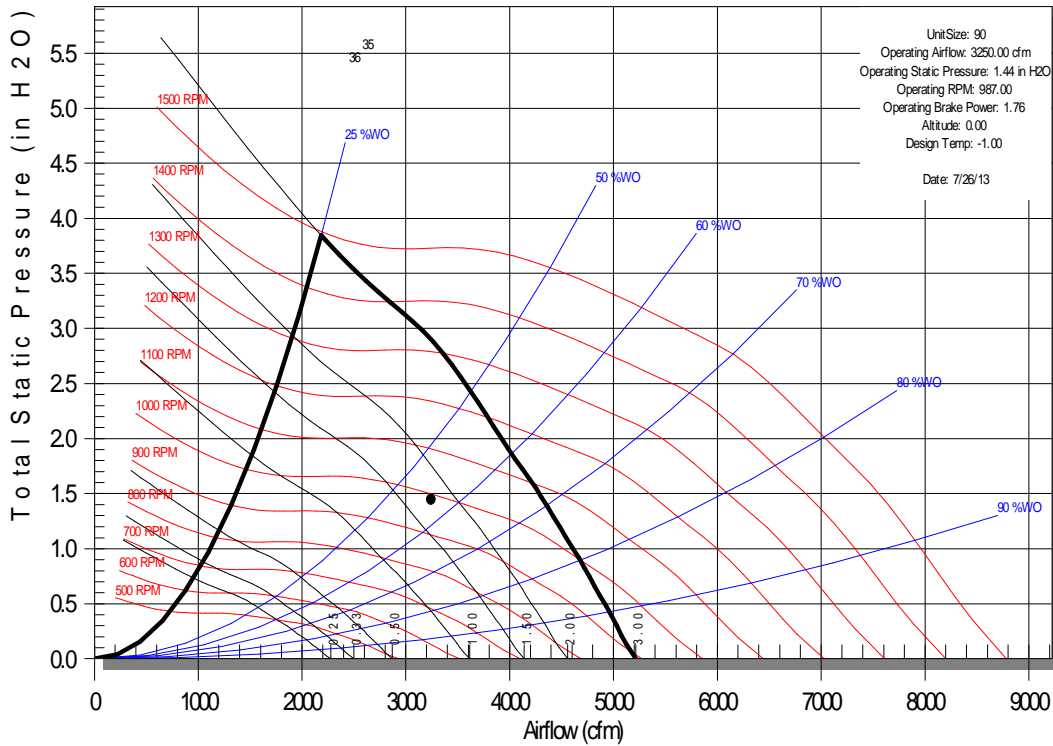


ISO2 VIEW



**Fan Curve - BCXC Blower Coil Air Handler**  
**Item: A1 Qty: 1 Tag(s): AHU-1**

SIZE 90 HORIZONTAL

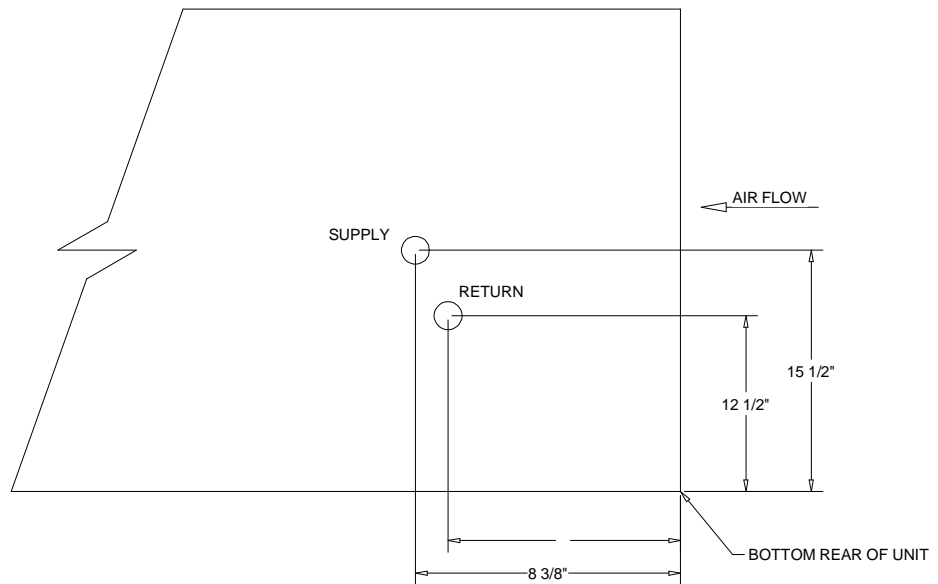


	63-hz	125-hz	250-hz	500-hz	1 kHz	2 kHz	4 kHz	8 kHz
Discharge	84	82	75	77	73	69	67	61
Casing	74	68	63	59	54	45	37	31
Inlet	76	77	64	56	58	54	50	44

**Accessory - BCXC Blower Coil Air Handler**  
**Item: A1 Qty: 1 Tag(s): AHU-1**

**MAIN UNIT COIL CONNECTIONS**

RETURN	1 1/8"
SUPPLY	1 1/8"



**NOTES:**

1. PICTORIAL HEADER STUBOUT LOCATIONS RELATIVE TO EACH OTHER MAY NOT BE ACCURATE.
2. LOCATING DIMENSIONS HAVE A PLUS / MINUS 2" TOLERANCE.
3. FOR UNITS WITH A FILTER ACCESS MODULE, ADD 7 3/16" TO HORIZONTAL DIMENSIONS SHOWN.
4. PIPING CONNECTIONS ARE SPECIFIED AS OUTSIDE DIAMETER (O.D.).

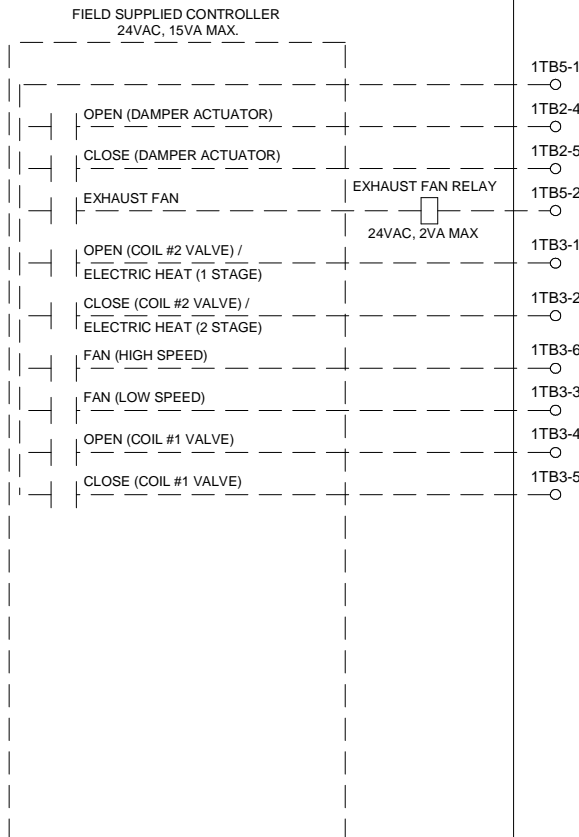
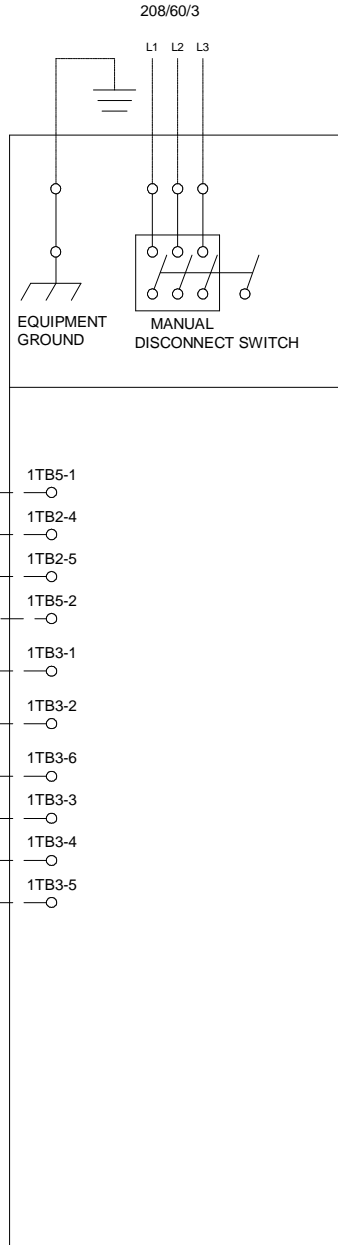
Field Wiring - BCXC Blower Coil Air Handler

Item: A1 Qty: 1 Tag(s): AHU-1

<p><b>⚠ WARNING</b>  <b>HAZARDOUS VOLTAGE!</b>                  DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS AND FOLLOW LOCK OUT AND TAG PROCEDURES BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE. UNITS WITH VARIABLE SPEED DRIVE, REFER TO DRIVE INSTRUCTIONS FOR CAPACITOR DISCHARGE.                  FAILURE TO DO THE ABOVE BEFORE SERVICING COULD RESULT IN DEATH OR SERIOUS INJURY.</p>	<p><b>⚠ AVERTISSEMENT</b>  <b>TENSION DANGEREUSE!</b>                  COUPER TOUTES LES TENSIONS ET OUVRIRE LES SECTIONNEURS À DISTANCE. PUIS 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 REPORTER AUX INSTRUCTIONS DE L'ENTRAÎNEMENT POUR DÉCHARGER LES CONDENSATEURS.                  NE PAS RESPECTER CES MESURES DE PRÉCAUTION PEUT ENTRAÎNER DES BLESSURES GRAVES POUVANT ÊTRE MORTELLES.</p>	<p><b>⚠ ADVERTENCIA</b>  <b>¡VOLTAJE PELIGROSO!</b>                  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 DIRECCIÓN DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.                  EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.</p>
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NOTES:

1. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), STATE AND LOCAL REQUIREMENTS.
2. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS. DASHED LINE ENCLOSURES AND / OR DASHED DEVICE OUTLINES INDICATE COMPONENTS PROVIDED BY THE FIELD. SOLID LINES INDICATE WIRING BY TRANE CO.
3. CONTROL WIRING CONNECTIONS ARE 6-32 SCREW TERMINALS LOCATED ON OUTSIDE OF CONTROL BOX.
4. LINE VOLTAGE CONNECTIONS ARE TO BE SPICED TO WIRES INSIDE OF UNIT CONTROL BOX OR TERMINATED INSIDE OF ELECTRIC HEAT CONTROL BOX ON UNITS WITH ELECTRIC HEATERS.
5. DIAGRAM SHOWS ALL AVAILABLE OPTIONS. DISREGARD OPTIONS NOT SELECTED.
6. IF SINGLE MOTOR, DISREGARD LOW SPEED AND WIRE SINGLE SPEED TO 1TB3-6.



MCA: 7.75 A  
 MFS: 15.00 A

**NOTICE**  
 USE COPPER CONDUCTORS ONLY!  
 UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.  
 FAILURE TO DO THE ABOVE COULD RESULT IN EQUIPMENT DAMAGE.

**AVIS**  
 N'UTILISER QUE DES CONDUCTEURS EN CUIVRE!  
 LES BORNES DE L'UNITÉ NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.  
 FAIRE DÉFAUT À LA PROCÉDURE CI-DESSUS PEUT ENTRAÎNER DES DOMMAGES À L'ÉQUIPEMENT.

**AVISO**  
 ¡UTILICE ÚNICAMENTE CONDUCTORES DE COBRE!  
 LAS TERMINALES DE LA UNIDAD NO ESTÁN DISEÑADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.  
 NO SEGUIR LAS INSTRUCCIONES ANTERIORES PUEDE PROVOCAR DAÑOS EN EL EQUIPO.