Jacobs | TITAN TECHNOLOGIES

OCSD Construction Program VI

Jacobs|Titan, A Joint Venture
School District of Okaloosa County Program Office
4008 Legendary Drive, Suite 600, Destin, FL 32541
850.897.8125

ADDENDUM No. 01

MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT

MARCH 27, 2025

ARCHITECT – H2Engineering

NOTE: ***NEW BID TIME***
The bid date and time for this project is Thursday, April 9th, 2026 at 3:00 P.M. CST.

A) Project Drawings

1. No Change

B) Project Specifications

1. **REPLACE**: original 00010 - INVITATION TO BID specifications section with new attached 00010 - INVITATION TO BID specifications section.

2. **REPLACE**: original 00100 – INSTRUCTIONS TO BIDDERS specifications section with new attached 000100 - INSTRUCTIONS TO BIDDERS specifications section.

C) Project General Notes

1. **ADD**: Pre-Bid Meeting Minutes

2. **ADD**: Pre-Bid Meeting Sign-In Sheet

3. **REPLACE:** original ATTACHMENT F- MILESTONE SCHEDULE with new attached ATTACHMENT F- MILESTONE SCHEDULE.

D) Project Questions

1. **REF:** Contract Documents - Attachment K
   Question: Confirm substantial completion date for project listed in Annex F. The current substantial completion date would be after students return to school.
   Answer: See revised Attachment F: Milestone Schedule. The new substantial completion date is 7 August 2026.

2. **REF:** Division 1 / Sheet M2.1AB and Sheet M2.1CD
   Question: Are bids acceptable through email?
   Answer: Yes, bids are acceptable through email, see updated specification section 00100 Instructions to Bidders.

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3. **REF:** Division 1 / Sheet M2.1AB and Sheet M2.1CD
   Question: Will classroom areas under VAV's be cleared out by the school prior to work commencement?
   Answer: Yes, JT will coordinate with the school to move desks and furniture out from underneath the location of VAV's.

4. **REF:** Division 7 / Sheet M1.0
   Question: Confirmation that the demo and roof patch will be handled by Tremco including the lightweight deck and that the mechanical contractor will only be responsible for the new roof curbs.
   Answer: General Contractor is responsible for the removal of the old curb and placement of the new curb. Tremco will be responsible for any enlargement or closure of the opening and flashing related to the new curb.

5. **REF:** Division 7 / Sheet M1.0
   Question: Confirm that J\T will provide roofing scope for RTU 13 & 14 to include roofing removal, light weight repair and flashing for a complete roof application.
   Answer: Roofing scope will be handled through separate contract with Tremco, GC will be responsible for coordination of Tremco scope of work.

6. **REF:** Division 23 / Sheet M0.1
   Question: Confirm that the curbs for RTU-13 and RTU-14 will be provided by the owner.
   Answer: Yes, RTU-13 and RTU-14, in addition to the two (2) wind rated roof curbs for each of these units, will be provided by owner. Any unloading, handling, and installation of this equipment will be handled by the GC.

7. **REF:** Contract Documents Attachment A – Scope of Work
   Question: Please provide Trane Submittals for the RTU's and Chiller.
   Answer: Please see Attachment A- Trane RTU submittal and Attachment B- Trane Chiller 1 submittal.

8. **REF:** Sheet IC0.1
   Question: Reference IC0.1 Commissioning. Confirm that J\T will provide the commissioning agent by separate contract.
   Answer: Yes, commissioning will be provided by Trane and approved by H2Engineering.

9. **REF:** Sheet M0.1
   Question: Reference Sheet M0.1 Delegated Design Calculation requirements. Advise.
   Answer: This is being handled by H2Engineering.

10. **REF:** Sheets E0.1 through E2.2
    Question: Confirm that J\T will provide fire alarm scope through separate contract with Ivanco.
    Answer: Yes, an allowance will be provided for Ivanco's scope of work once received and pushed out in separate addendum.

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11. **REF:** Division 25
    Question: Reference Division 25 and the Instrument Control Drainage. Advise if the control system will be provided by an allowance or by separate contract.
    Answer: Control system will be provided from Trane. We will issue an allowance if one is needed for this.

12. **REF:** Sheet M2.1AB and M2.1CD
    Question: Acoustical ceiling repair/replacement clarifications (whole room replacement? reusing tiles?
    Answer: Re-use existing tiles. Any damaged tile should be replaced to match existing.

13. **REF:** Sheets M2.2, IC1.2 and E2.2
    Question: Reference Sheets M2.2, IC1.2 and E2.2. Provide information regarding VFDs for CHwp-1, CHWP-2, CWP-1 and CWP-2. If required, these should be provided by the allowances to be compatible with the DDC system.
    Answer: To be provided in later addendum.

14. **REF:** Division 9
    Question: Reference Section 099113.1 and 099123.1 Painting. Provide detailed scope. Advise if new pipe only, existing CW, Chiller 2, condensate, color, schedule, etc.
    Answer: To be provided in later addendum.

END OF ADDENDUM No. 01

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SECTION 00010

INVITATION TO BID

SCHOOL BOARD of OKALOOSA COUNTY

Max Bruner Jr. Middle School Chiller and RTU Replacement

General Contracting Package

Sealed bids are requested from Pre-Qualified construction firms for the **General Contracting Package** required for the construction of:

Max Bruner Jr. Middle School Chiller and RTU Replacement, as described in the contract documents.

Bid Proposals will be received by Jacobs|Titan, A Joint Venture as Total Program Manager (TPM) for the School District of Okaloosa County, Florida, at 4008 Legendary Drive, Suite 600, Destin, FL 32541 until **3:00 p.m., Local Time on Thursday, April 09, 2026.** Bid proposals will then be privately opened, with only bidding contractors present, and bid results will be published immediately after award of Contract.

Bids will only be accepted from the following Pre-Qualified firms:

Whitesell-Green, Inc.
P.O. Box 2849
Pensacola, FL 32513
Phone: 850.434.5311
Fax: 850.434.5315

Speegle Construction, Inc.
210 C Government Avenue
Niceville, FL 32578
Phone: 850.729.2484
Fax: 850.729.1993

A.E. New, Jr., Inc.
460 Van Pelt Lane
Pensacola, FL 32505
Phone: 850.472.1001
Fax: 850.472.1004

Lord & Son Construction, Inc.
P.O. Box 1808
Fort Walton Beach, FL 32549
Phone: 850.863.5158
Fax: 850.862.4904

Culpepper Construction
1538 Metropolitan Boulevard
Tallahassee, FL 32308
Phone: 850.224.3146

Morette Company
2503 N. 12th Avenue
Pensacola, FL 32503
Phone: 850.432.4084

Childers Construction Co.
3472 Weems Road, Unit 1
Tallahassee, FL 32317
Phone: 850.222.2281

Greenhut Construction Company, Inc.
23 S. A Street
Pensacola, FL 32502
Phone: 850.466.5421

Wharton-Smith, Inc.
49 E. Chase Street
Pensacola, FL 32502
Phone: 850-328-4350

RAM General Contracting & Development, Inc.
301 W. Platt Street, Suite 411
Tampa, FL 33606
Phone: 850-904-9830

Other General Contractors that would like to be considered for pre-qualification on the TPM Program shall contact Dustin Merritt (Jacobs/Titan) at 850-685-9146 to request a Pre-Qualification Package.

Bidders must be authorized to do business in the State of Florida and in Okaloosa County and must possess all required construction licenses, in accordance with applicable State and local laws, rules, and regulations.

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Pre-Qualified Bidders will be provided access to the bid documents via DropBox. The DropBox link will be emailed to each pre-qualified bidder. The Contract Documents will also be available for download via Procore. A Procore invitation will be emailed to each pre-qualified bidder.

A non-mandatory Pre-Bid Conference will be held on Thursday, March 26, 2026 at 3:00 p.m. starting at the Max Bruner Jr. Middle School located at 322 Holmes Blvd NW, Fort Walton Beach, FL 32548. All visitors will meet at the Front Office and a site walk through of the project will immediately follow. All bidders, subcontractors/sub-subcontractors and vendors are invited and encouraged to attend.

The successful Bidder will be required to furnish a Performance Bond and Payment Bond, each for the amount of the Contract by a qualified surety doing business in the State of Florida; and certificates of Insurance. Each Bid Proposal must be accompanied by a Bid Bond in the amount of five percent (5%) of the bid amount.

The successful Bidder will be required to Contract directly with Jacobs|Titan, the Total Program Manager (TPM), for all services included in this solicitation on the Contract form, included in the Contract Documents.

Bidder will be required to provide a written Project Safety Program to TPM. This Project Safety Program will be equal to/or greater than the Jacobs|Titan Safety Program included in the bid documents.

Jacobs|Titan reserves the right to waive any informalities or irregularities in any Bid and to reject any or all Bid Proposals.

Bid Proposals shall remain in effect for sixty (60) days after opening of bids.

Dustin Merritt,
Deputy Program Manager/Construction Manager
Jacobs|Titan
4008 Legendary Drive, Suite 600,
Destin, FL 32541

End of Invitation to Bid

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SECTION 00100

INSTRUCTIONS TO BIDDERS

SCHOOL BOARD of OKALOOSA COUNTY
MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT

General Contracting Package

1.1 RECEIPT AND OPENING OF BIDS

A. Jacobs|Titan, A Joint Venture, as Total Program Manager for the School Board of Okaloosa County, Florida, invites sealed Bid Proposals from Pre-Qualified general contracting firms for the construction project titled:

SCHOOL BOARD of OKALOOSA COUNTY, MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT, as described in the contract documents.

B. Bids will only be accepted from the following Pre-Qualified firms:

Whitesell-Green, Inc.
P.O. Box 2849
Pensacola, FL 32513
Phone: 850.434.5311
Fax: 850.434.5315

Speegle Construction, Inc.
210 C Government Avenue
Niceville, FL 32578
Phone: 850.729.2484
Fax: 850.729.1993

A.E. New, Jr., Inc.
460 Van Pelt Lane
Pensacola, FL 32505
Phone: 850.472.1001
Fax: 850.472.1004

Lord & Son Construction, Inc.
P.O. Box 1808
Fort Walton Beach, FL 32549
Phone: 850.863.5158
Fax: 850.862.4904

Culpepper Construction
1538 Metropolitan Boulevard
Tallahassee, FL 32308
Phone: 850.224.3146

Morette Company
2503 N. 12th Avenue
Pensacola, FL 32503
Phone: 850.432.4084

Childers Construction Co.
3472 Weems Road, Unit 1
Tallahassee, FL 32317
Phone: 850.222.2281

Greenhut Construction Company, Inc.
23 S. A Street
Pensacola, FL 32502
Phone: 850.466.5421

Wharton-Smith, Inc.
49 E. Chase Street
Pensacola, FL 32502
Phone: 850-328-4350

RAM General Contracting & Development, Inc.
301 W. Platt Street, Suite 411
Tampa, FL 33606
Phone: 850-904-9830

Other General Contractors that would like to be considered for pre-qualification on the TPM Program shall contact Dustin Merritt (Jacobs/Titan) at 850-685-9146 to request a Pre-Qualification Package.

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C. Bid Proposals will be received physically at 4008 Legendary Drive, Suite 600, Destin, FL 32541 or through email at dustin.merritt@jacobs.com and loganamartin@titantechnologies.com until 3:00 p.m., local time, on Thursday, April 9, 2026 for the School Board Of Okaloosa County, Max Bruner Jr. Middle School Chiller and RTU Replacement. No Bid Proposals will be received after the date and time set forth above.

D. Bids will be privately opened by TPM with only the Bidders present; bid results to be published immediately after award of Contract.

E. Bid Proposals must be sealed with bidder's name on the outside of the envelope and designated as follows:

Jacobs|Titan, Total Program Manager
School Board of Okaloosa County Program
Office 4008 Legendary Drive, Suite 600
Destin, FL 32541
Attention: Program Manager

SCHOOL BOARD of OKALOOSA COUNTY, MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT

General Contracting Package
(BIDDER NAME, ADDRESS AND PHONE NUMBER)

F. Any bid may be withdrawn by written request prior to the time scheduled above for the receipt of such Bids or authorized postponement thereof. No Bid may be withdrawn for a period of sixty (60) calendar days after opening of Bids. No telephone, telegraphic, or facsimile Bids, change in Bid or withdrawal of Bid will be received or recognized. No modifications of any Bid will be considered unless in writing, sealed and received by Jacobs|Titan prior to the time established for the receipt of such Bid. Bid security shall be in an amount sufficient for the bid as modified or resubmitted.

1.2 METHOD OF BIDDING

A. Bid Proposals shall be received for all Work shown or indicated in the Contract Documents from those construction firms on the Pre-Qualified Bidders list.

B. The Work includes the Project Manual, the Contract for Construction Services, Specifications, and related Drawings.

C. Bidders are required to bid on the entire Project, including all Alternates.

1.3 AVAILABILITY OF CONTRACT DOCUMENTS

A. Pre-Qualified Bidders will be provided access to the bid documents via Dropbox and/or email . The Drobox link will be emailed to each Pre-Qualified Bidder.

B. The Contract Documents will also be available for download via Procore. A Procore Invitation will be sent to all Pre-Qualified Bidders via email.

1.4 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

A. Each Bidder shall be held to have examined the site of the proposed Work and shall fully acquaint themselves with the conditions and limitations as they exist, including those of labor and progress of work to date, if any, and shall also thoroughly examine the Contract Documents and compared them with existing conditions. Each Bidder will be familiar with weather conditions of the project area. Failure of any Bidder to visit the site and acquaint themselves with the Contract Documents shall in

no way relieve Bidder from any obligations with respect to their bid.

B. No consideration will be granted for any alleged misunderstanding of the material, article or piece of equipment to be furnished work to be done; it being understood that the tender of a Bid Proposal carries with it the agreement to all items and conditions referred to herein or indicated in the Contract Documents.

C. A non-mandatory Pre-Bid Conference will be held on Thursday, March 26, 2026, at 3:00 p.m. at the project site, 322 Holmes Blvd NW, Fort Walton Beach, FL 32548. A site walk through of the project location(s) will immediately follow. All Bidders, subcontractors/sub-subcontractors and vendors are invited and encouraged to attend.

D. Unless otherwise indicated by the TPM, additional site visits of existing School Facilities will be by appointment only, which will be made at the Pre-Bid Meeting or by contacting **Dustin Merritt** at dustin.merritt@jacobs.com.

1.5 ADDENDA AND INTERPRETATIONS

A. No interpretations of the meaning of the Drawings, Specifications, or other documents will be made to any Bidder verbally. Every request for such interpretation shall be sent via email to **Logan Martin (logana.martin@titantechnologies.com)** with **Dustin Merritt (dustin.merritt@jacobs.com)** being CC'ed. To be given consideration, requests for interpretation must be received at least five (5) calendar days prior to the date fixed for the opening of Bids. Questions shall reference project, drawing and/or specification number and shall include the name of the firm, contact, telephone number and address.

B Bidders are required to notify TPM if there are any errors, ambiguity or inconsistency, which they may discover upon reviewing the Contract Documents or the site and local conditions. Any and all interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be sent to all persons on record as having received a complete set of Contract Documents at the respective addresses furnished for such purpose. Such Addenda will be mailed or otherwise sent by courier or electronic means no later than 48 hours prior to time set for opening of bids. Failure of Bidder to receive any Addendum or interpretation shall not relieve such Bidder from any obligation under his Bid as submitted.

C All Addenda so issued shall become part of the Bidding and Contract Documents.

D. Each bidder shall acknowledge that they have received all addenda issued prior to submitting their bid.

1.6 SUBSTITUTIONS DURING BIDDING

A. Requests for changes proposed by the bidder in products, material, equipment, fixture, form, and methods of construction required by the Contract Documents, or shown by name, make, or catalog number, shall be made in writing to the TPM by the close of business on the day of the Pre-Bid Meeting. Such requests shall be accompanied by the following data supporting the claim to equality:

1. Identify the product, fabrication or installation method to be replaced. Include related Specification Section and Drawing numbers.
2. Product Data, including drawings and descriptions of products, fabrication and installation procedures.
3. Samples, where applicable or required.
4. A detailed comparison of significant quantities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.

5. Coordination information, including a list of changes of modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.

6. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

7. Cost information, including a proposal of a net change, if any.

8. Indicate the effect of the proposed substitution on overall Contract Time.

B. Approval by the TPM, if given, will be made by addendum issued through the TPM. Said approval will indicate that the additional article, device, product, material, fixture, form or type of construction is approved for use insofar as the requirements of this project are concerned.

C. No substitutions are allowed under the base bid unless approved by addendum.

D. If approved, all modifications necessary as a result of the use of an approved substitute shall be paid by the bidder proposing the substitution.

E. TPM's decision as to acceptance or non-acceptance of a substitution shall be final. Under no circumstances will the TPM be required to prove that a product proposed for substitution is or is not of equal quality to the product specified.

1.7 ALTERNATES

A. The bidder must bid on all Alternates contained in the Bid Documents. The bidder shall list a value for each Alternate listed on the Bid Proposal Form. Each Alternate value shall include all work required for its complete execution of work, including all supervision, overhead, profit and bond costs. Accepted Alternates will be fully considered in awarding a contract.

B. In its sole discretion, TPM reserves the right to accept or reject any or all Alternates and to award the Contract to the lowest eligible responsible Bidder based on the Base Bid and the Alternates that are accepted at that time.

C. TPM shall be allowed a period of one hundred twenty (120) calendar days after Award of Contract to exercise the right to accept or reject any or all alternates submitted on the bid proposal.

D. Bids are considered irregular and may be rejected if alternates contained in the bid proposal are obviously unbalanced either in excess of, or below, reasonable cost analysis values as determined at the sole discretion of the TPM.

1.8 BID SECURITY AND BONDS

A. Each Bid Proposal must be accompanied by security in the form of a Bid Bond duly executed by the Bidder as Principal and having as surety thereon, a company authorized to execute such bond in the State of Florida and which company is satisfactory to Jacobs|Titan. The amount of such Bid Security shall be five percent (5%) of the amount bid. An attorney-in-fact who signs a Bid Bond must file with the Bond a certified and effectively dated copy of his power of attorney. The Bid Security shall be made in favor of Jacobs|Titan, A Joint Venture and shall become its property in the event the Bidder fails, within seven (7) days after receipt of Notice of Award for the amount of the Bid Proposal, to both execute said agreement, deliver the Performance Bond, Payment Bond, and the proper Certificate of Insurance. The premiums for said Bonds shall be the responsibility of the Bidder and are included in the Contract Price. The Bid Bond must be submitted on the form attached hereto. The Performance Bond and Payment Bond are to be in the format required under

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Florida Statutes 255.05 and be executed by such sureties as are acceptable to TPM and are licensed to do business in the State of Florida.

B. The surety company must have an A. M. Best rating of "A" or be listed as a company approved by the Federal Register of the U. S. Department of Treasury for "Surety Companies Acceptable on Federal Bonds" and be certified to issue the total amount of the bond on any one risk. For Bids less than $500,000.00, bonds from a surety company meeting Section 287.0935 of the Florida Statutes are acceptable.

C. Bid Bonds will be returned to successful bidders after a contract agreement has been executed, and acceptance of required bonds and insurance is made. The Bid Bonds of bidders not under consideration for award of contract will be returned by the TPM in a timely manner. The bid security of the lowest two bidders may be retained for a period not to exceed sixty (60) days after date for receipt of bids, or until a contract is awarded.

D. Every Bid Proposal Form that is **not** accompanied by a Bid Bond will be **rejected.**

1.9 SUBMISSION OF BIDS AND BID PROPOSAL FORMS

A. Each Bid Proposal shall be submitted on the Bid Proposal Form bound in the Contract Documents. The Bid Proposal Form may be copied from the one bound in the Contract Documents. All blank spaces shall be filled in ink or typewritten, in words and figures, in figures only where no space is provided for words and signed by a legally authorized representative of the Bidder that can bind the Bidder to the Contract. If Bids are submitted by an agent, provide satisfactory evidence of agency authority. Bids on a form not completely filled in, or which is not complete, or which is conditional, qualified, or obscure, or which contains any addition not called for, may be considered non-responsive and rejected.

B. The Bid Proposal Form, including the Bid Bond and the Public Entity Crime Form shall be enclosed in a sealed envelope with the following plainly marked on the outside:

Jacobs|Titan
Total Program Manager
School Board of Okaloosa County Program Office
4008 Legendary Drive, Suite 600,
Destin, FL 32541
Attention: Program Manager

SCHOOL BOARD of OKALOOSA COUNTY, MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT

General Contracting Package
(BIDDER NAME, ADDRESS AND PHONE NUMBER)

If the bid is mailed, the Bidder shall enclose his sealed bid in an outer envelope, addressed as follows:

From: Bidder's Name and Business
Address

To: Jacobs|Titan
Total Program Manager
School Board of Okaloosa County Program
Office 4008 Legendary Drive, Suite 600,
Destin, FL 32541

Attention: Program Manager
SEALED BID ENCLOSED

C. All Bidders are cautioned to allow ample time for the transmission of Bids. Bids received after the specified time will not be accepted or recognized. The time of receipt will determine the acceptability of mailed Bids, regardless of postmark.

D. Jacobs|Titan will not be responsible for premature opening of bid envelopes not properly addressed and marked.

E. Any expense or costs incurred by the Bidder in the preparation of his Bid Proposal will be at the sole cost and expense of the Bidder.

F. The Bid Proposal form will not be considered a Contract Document.

G. With the submission of their Bid, the bidder represents that they have read and acknowledge that the Project Schedule is acceptable.

H. Oral, telephone, facsimile, or telegraphic bids are invalid and will not be considered.

I. The Bid is to be based solely on the labor, materials, systems and equipment necessary to complete the Work described by the Contract Documents.

1.10 RIGHT TO ACCEPT AND REJECT BIDS

A. The TPM reserves the right to waive any informalities and irregularities in any Bid or to reject any or all Bid Proposals.

1.11 METHOD OF AWARD AND EXECUTION OF CONTRACT

A. It is the intent of the TPM to award a Contract to the lowest responsible and responsive bidder from the list of Pre-Qualified Bidders provided the Bid has been submitted in accordance with the requirements of the Contract Documents and does not exceed the funds available. The Bidder shall receive a Notice of Award for signature and the date this Document is received by the Bidder will be considered the beginning of the Contract time.

B. The Bidder is required to return a signed and dated copy of the Notice of Award to the TPM. If the Contractor fails to furnish Contractor's Performance Bond, Public Payment Bond, and Certificate of Insurance within seven (7) calendar days from the date of the Notice of Award and concurrent with the execution of the Contract, TPM will be entitled to consider all the Bidder's rights arising out of TPM acceptance of the Bidder's Bid as abandoned and as a forfeiture of the Bidder's Bid Bond. TPM will be entitled to such other rights as may be granted by Law.

C. The Bidder who is selected shall execute a Contract with Jacobs|Titan within seven (7) calendar days after receipt of Notice of Award. Upon receipt by TPM of executed Contract and the required bonds, the Contractor shall be issued a Notice to Proceed with the Contract Work.

D. The term "Contractor" referred to throughout the Contract Documents means the construction firm that enters in a Contract with Jacobs|Titan, the Total Program Manager (TPM).

E. The form of Contract that will be used is the Contract for Construction Services included in the Bid Documents.

F. Bidder who is selected shall also provide evidence of other insurance required under the Contract Documents prior to starting any work on the project.

G. The Bidder agrees to commence administrative and submittal work under this Contract immediately upon Notice of Award and to substantially complete the Work by the date specified in the Contract. The time period allotted for the Work (Contract Time) begins on the date that the successful Bidder receives the "Notice of Award".

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H. The sequence of construction and Milestone Dates for major work items are listed in Attachment F to the Contract for Construction Services. The Contractor shall be familiar with Article 5, Paragraph 5.3.1 of the Contract with respect to weather and shall plan accordingly.

I. The successful Bidder will supply a complete list of subcontractors to TPM within three (3) days after the Bid opening. Major subcontractors must be identified on 00300 Bid Form and submitted with the bid.

J. The successful Bidder will execute attachments C, D and E within seven (7) days after the Notice of Award.

K. Time is of the essence in the Work to be provided under this Contract. **After the successful Bidder receives a "Notice to Award", the time allotted for the Work begins.** The Bidder agrees to substantially complete the Work on or before the date scheduled for Substantial Completion.

L. The schedule requirements are detailed in Division 1, section 01315.

1.12 SUPERVISION

A Each Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during the progress of his Work. The superintendent shall be satisfactory to the Owner and Jacobs|Titan, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor. The listed staff will not be replaced or substituted without TPM approval of replaced or substituted staff.

B. Safety Representative: The Contractor shall employ a competent trained safety representative who shall be in attendance at the Project site a minimum of one (1) hour per workday, whenever work is in progress. The contractor's safety representative shall ensure that Contractor's safety program is being fully implemented and meets all requirements of the contract documents. The qualifications of the Contractors safety representative must be acceptable to the TPM.

1.13 SCHEDULE OF VALUES

A. In the preparation of the Bid Proposal, the Bidder should be aware of the requirement that each successful Bidder shall submit his Schedule of Values in a form as required by the TPM.

1.14 COMPLIANCE WITH LAWS

A. The Bidder is required to be familiar with all Federal, State and Local laws, ordinances, rules and regulations that in any manner affect the Work.

B. Contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of his Work and shall furnish a copy of said permits, licenses and inspection reports to the TPM.

C. Bidders must be authorized to do business in the State of Florida and in Okaloosa County and must possess all required construction licenses in accordance with applicable State and local laws, rules, and regulations.

End of Instructions to Bidders

Jacobs/Titan, A Joint Venture
School District of Okaloosa County Program Office
4008 Legendary Drive, Suite 600, Destin, FL 32541
Phone 850.897.8125

PRE-BID MEETING
March 26, 2026

MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT
CONTRACTING PACKAGE

1.1 RECEIPT AND OPENING OF BIDS

A. Jacobs/Titan, a Joint Venture, as Total Program Manager for the School District of Okaloosa County, Florida, invites sealed Bid Proposals from Pre-Qualified Roofing Contracting Firms for the construction project titled:

MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT

located at:

- **322 Holmes Boulevard, Fort Walton Beach, FL 32548**

B. Bid Proposals will be received by Jacobs/Titan, A Joint Venture, as Total Program Manager (TPM) for the School District of Okaloosa County, Florida, at 4008 Legendary Drive, Suite 600, Destin, FL 32541 at **3:00 p.m., Local Time on Thursday, April 9th, 2026.** Electronically submitted bids are acceptable through email, but they must be emailed by bid time of 3:00 p.m., Local Time to Dustin Merritt (dustin.merritt@jacobs.com) and Logan Martin (logana.martin@titantechnologies.com) with a read receipt and delivery receipt. Within 24 hours, a hard copy of the bid package must be overnighted.

C. Bids will be privately opened with only the Bidders present, with bid results to be published immediately after award of Contract.

D. Bid Proposals must be sealed with bidder's name on the outside of the envelope and designated as follows:

Jacobs|Titan, Total Program Manager
School District of Okaloosa County Program Office
4008 Legendary Drive, Suite 600
Destin, FL 32541
Attention: Program Manager
Max Bruner Jr. Middle School Chiller and RTU Replacement Project
Contracting Package
(BIDDER NAME, ADDRESS AND PHONE NUMBER)

E. Any bid may be withdrawn by written request prior to the time scheduled above for the receipt of such Bids or authorized postponement thereof. No Bid may be withdrawn for a period of sixty (60) calendar days after opening of Bids. While Bids are acceptable through email at dustin.merritt@jacobs.com and logana.martin@titantechnologies.com, no telephone, telegraphic, or facsimile Bids, change in Bid or withdrawal of Bid will be received or recognized. No modifications of any Bid will be considered unless in writing, sealed and received by Jacobs/Titan prior to the time established for the receipt of such Bid. Bid security shall be in an amount sufficient for the bid as modified or resubmitted.

1.2 METHOD OF BIDDING

A. Bid Proposals shall be received for all Work shown or indicated in the Contract Documents from those construction firms on the Pre-Qualified Bidders list.

B. The Work includes the Project Manual, the Contract for Construction Services, Supplemental General Conditions, Specifications, and related Drawings.

C. Bidders are required to bid on the entire Project including all Alternates.

1.3 AVAILABILITY OF CONTRACT DOCUMENTS

A. Pre-Qualified Bidders submitting prime bids may obtain additional sets of Contract Documents by emailing their request to Dustin Merritt (Dustin.merritt@jacobs.com) or Logan Martin (logana.martin@titantechnologies.com).

1.4 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

A. Each Bidder shall be held to have examined the site of the proposed Work and shall fully acquaint themselves with the conditions and limitations as they exist, including those of labor and progress of work to date, if any, and shall also thoroughly examine the Contract Documents and compared them with existing conditions. Each Bidder will be familiar with weather conditions of the project area. Failure of any Bidder to visit the site and acquaint themselves with the Contract Documents shall in no way relieve Bidder from any obligations with respect to their bid.

B. No consideration will be granted for any alleged misunderstanding of the material, article or piece of equipment to be furnished work to be done; it being understood that the tender of a Bid Proposal carries with it the agreement to all items and conditions referred to herein or indicated in the Contract Documents.

C. Additional site visits of existing School Facilities will be by appointment only, which will be made at the Pre-Bid Meeting or by contacting **Dustin Merritt** at (850-685-9146) or dustin.merritt@jacobs.com. Appointments will only be granted after School hours.

1.5 ADDENDA AND INTERPRETATIONS

A. No interpretations of the meaning of the Drawings, Specifications, or other documents will be made to any Bidder verbally. Every request for such interpretation shall be in email, addressed to **Dustin Merritt**, (dustin.merritt@jacobs.com) and **Logan Martin**, (logana.martin@titantechnologies.com), and to be given consideration, must be received by close of business September 15th, 2025. Questions shall reference project, drawing and/or specification number and shall include the name of the firm, contact, telephone number and address.

B. Bidders are required to notify TPM if there are any errors, ambiguity or inconsistency, which they may discover upon reviewing the Contract Documents or the site and local conditions. Any and all interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be sent to all people on record as having received a complete set of Contract Documents at the respective addresses furnished for such purpose. Such Addenda will be mailed or otherwise sent by courier or electronic means not later than forty-eight (48) hours prior to time set for opening of bids. Failure of Bidder to receive any Addendum or interpretation shall not relieve such Bidder from any obligation under his Bid as submitted.

C. All Addenda so issued shall become part of the Bidding and Contract Documents.

D. Each bidder shall determine that they have received all addenda issued prior to submitting their bid.

1.6 SUBSTITUTIONS DURING BIDDING

A. Requests for changes proposed by the bidder in products, material, equipment, fixture, form, and methods of construction required by the Contract Documents, or shown by name, make, or catalog number, shall be made in writing to the TPM by the close of business on the day of the Pre-Bid Meeting. Such requests shall be accompanied by the following data supporting the claim to equality:

1. Identify the product, or the fabrication or installation method to be replaced. Include related Specification Section and Drawing numbers.
2. Product Data, including drawings and descriptions of products, fabrication and installation procedures.
3. Samples, where applicable or required.
4. A detailed comparison of significant quantities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.
5. Coordination information, including a list of changes of modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will become necessary to accommodate the proposed substitution.
6. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.
7. Cost information, including a proposal of a net change, if any.
8. Indicate the effect of the proposed substitution on overall Contract Time.

B. Approval by the TPM, if given, will be made by addendum issued through the TPM. Said approval will indicate that the additional article, device, product, material, fixture, form or type of construction is approved for use insofar as the requirements of this project are concerned.

C. No substitutions are allowed under the base bid unless approved by addendum.

D. If approved, all modifications necessary as a result of the use of an approved substitute shall be paid by the bidder proposing the substitution.

E. TPM's decision as to acceptance or non-acceptance of a substitution shall be final. Under no circumstances will the TPM be required to prove that a product proposed for substitution is or is not equal quality to the product specified.

1.7 ALTERNATES

A. The bidder must bid on all Alternates contained in the Bid Documents. The bidder shall list a value for each Alternate listed on the Bid Proposal Form. The Alternates value will include all work required for their complete execution of work, overhead, profit and bond costs. They will be fully considered in awarding a contract.

B. TPM reserves the right to select or reject the Alternates and to award the Contract to the lowest eligible responsible Bidder based on the Base Bid and the Alternates that are selected.

C. TPM shall be allowed a period of one hundred twenty (120) calendar days after Award of Contract to exercise the right to accept or reject any or all alternates submitted on the bid proposal.

D. Bids are considered irregular and may be rejected if alternates contained in the bid proposal are obviously unbalanced either in-excess of, or below, reasonable cost analysis values as determined at the sole discretion of the TPM.

1.8 BID SECURITY AND BONDS

A. Each Bid Proposal must be accompanied by security in the form of a Bid Bond duly executed by the Bidder as Principal and having as surety thereon, a company authorized to execute such bond in the State of Florida and which company is satisfactory to Jacobs/Titan. The amount of such Bid Security shall be five percent (5%) of the amount bid. An attorney-in-fact who signs a Bid Bond must file with the Bond a certified and effectively dated copy of his power of attorney. The Bid Security shall be made in favor of Jacobs/Titan, A Joint Venture and shall become its property in the event that the Bidder fails, within seven (7) days after receipt of Notice of Award for the amount of the Bid Proposal, to both execute said agreement, deliver the Performance Bond and the Payment Bond, and the proper Certificate of Insurance. The premiums for said Bonds shall be the responsibility of the Bidder and are included in the Contract Price. The Bid Bond must be submitted on the form attached hereto. The Performance Bond and Payment Bond are to be in the format required under Florida Statutes 255.05, and be executed by such sureties as are acceptable to TPM and are licensed to do business in the State of Florida.

B. The surety company must have an A. M. Best rating of "A" or be listed as a company approved by the Federal Register of the U. S. Department of Treasury for "Surety Companies Acceptable on Federal Bonds" and be certified to issue the total amount of the bond on any one risk. For Bids less than $500,000.00, bonds from a surety company meeting Section 287.0935 of the Florida Statutes are acceptable.

C. Bid Bonds will be returned to successful bidders after a contract agreement has been executed, and acceptance of required bonds and insurance is made. The Bid Bonds of bidders not under consideration for award of contract will be returned by the TPM in a timely manner. The bid security of the lowest two bidders may be retained for a period not to exceed sixty (60) days after date for receipt of bids, or until a contract is awarded.

D. Every Bid Proposal Form that is **not** accompanied by a Bid Bond and the **Public Entity Crime Form** will be **rejected.**

1.9 SUBMISSION OF BIDS AND BID PROPOSAL FORMS

A. Each Bid Proposal shall be submitted on the Bid Proposal Form bound in the Contract Documents. The Bid Proposal Form may be copied from the one bound in the Contract Documents. All blank spaces shall be filled in ink or typewritten, in words and figures, and in figures only where no space is provided for words, and signed by a legally authorized representative of the Bidder that can bind the Bidder to the Contract. If Bids are submitted by an agent, provide satisfactory evidence of agency authority. Bids that are on a form not completely filled in, or which is not complete or which is conditional, qualified, or obscure, or which contains any addition not called for, may be considered non-responsive and rejected.

B. The Bid Proposal Form, including the **Bid Bond** and the **Public Entity Crime Form** shall be enclosed in a sealed envelope with the following plainly marked on the outside:

Jacobs|Titan, Total Program Manager
School District of Okaloosa County Program Office
4008 Legendary Drive, Suite 600
Destin, FL 32541
Attention: Program Manager
Max Bruner Jr. Middle School Chiller and RTU Replacement Project
Contracting Package
(BIDDER NAME, ADDRESS AND PHONE NUMBER)

If the bid is mailed, the Bidder shall enclose his sealed bid in an outer envelope, addressed as follows:

From: Bidder's Name and Business Address
To: Jacobs|Titan, Total Program Manager
School District of Okaloosa County Program Office
4008 Legendary Drive, Suite 600
Destin, FL 32541
Attention: Program Manager
A SEALED BID ENCLOSED

C. All Bidders are cautioned to allow ample time for the transmission of Bids. Bids received after the specified time will not be accepted or recognized. The time of receipt will determine the acceptability of mailed Bids, regardless of postmark.

D. Jacobs/Titan will not be responsible for premature opening of bid envelopes not properly addressed and marked.

E. Any expense or costs incurred by the Bidder in the preparation of his Bid Proposal will be at the sole cost and expense of the Bidder.

F. The Bid Proposal form will not be considered a Contract Document.

G. With the submission of their Bid, the bidder represents that they have read and acknowledge that the Project Schedule is acceptable.

H. Oral, telephone, facsimile, or telegraphic bids are invalid and will not be considered.

I. The Bid is to be based solely on the labor, materials, systems and equipment necessary to complete the Work described by the Contract Documents.

1.10 RIGHT TO ACCEPT AND REJECT BIDS

A. The TPM reserves the right to waive any informalities and irregularities in any Bid or to reject any or all Bid Proposals.

1.11 METHOD OF AWARD AND EXECUTION OF CONTRACT

A. It is the intent of the TPM to award a Contract to the lowest responsible and eligible bidder from the list of Pre-Qualified Bidders provided the Bid has been submitted in accordance with the requirements of the Contract Documents and does not exceed the funds available. The Bidder shall receive a Notice of Award for signature and the date this Document is received by the Bidder will be considered the beginning of the Contract time.

B. The Bidder is required to return a signed and dated copy of the Notice of Award to the TPM. If the Contractor fails to execute the Notice of Award and to furnish Contractor's Performance Bond, Public Payment Bond, and Certificate of Insurance within ten (10) calendar days from the date of the Notice of Award and concurrent with the execution of the Contract, Jacobs/Titan will be entitled to consider all the Bidder's rights arising out of TPM acceptance of the Bidder's Bid as abandoned and as a forfeiture of the Bidder's Bid Bond. TPM will be entitled to such other rights as may be granted by Law.

C. The Bidder who is selected shall execute a Contract with Jacobs/Titan within ten (10) calendar days after receipt of Notice of Award. Upon receipt by Jacobs/Titan of executed Contract and the required bonds, the Contractor shall be issued a Notice to Proceed with the Contract Work.

D. The term "Contractor" referred to throughout the Contract Documents means the construction firm that enters in a Contract with Jacobs/Titan, the Total Program Manager.

E. The form of Contract that will be used is the Sample Contract for Construction Services included in the Construction Package.

F. Bidder who is selected shall also provide evidence of other insurance required under the Contract Documents prior to starting any work on the project.

G. The Bidder agrees to commence administrative and submittal work under this Contract immediately upon Notice of Award and to substantially complete the Work by the date specified in the Contract. The time-period allotted for the Work (Contract Time) begins on the date that the successful Bidder receives the "Notice of Award".

H. All submittals and all correspondence from contractors will be directed to Jacobs/Titan. There will be no direct communication between contractors and designers.

I. The sequence of construction and Milestone Dates for major work items are listed in Attachment F to the Contract for Construction Services. The Contractor shall be familiar with Article 5, Paragraph 5.3.1 of the Contract with respect to weather and shall plan accordingly.

J. The successful Bidder will execute Attachments C, D, and E within ten (10) days after the Notice of Award

K. Time is of the essence in the Work to be provided under this Contract. **After the successful Bidder receives a "Notice of Award", the time allotted for the Work begins.** The Bidder agrees to substantially complete the Work on or before the date having been scheduled for Substantial Completion.

L. The schedule requirements are detailed in Division 1, section 01315.

1.12 SUPERVISION

A. Each Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during the progress of his Work. The superintendent shall be satisfactory to the Owner and Jacobs/Titan, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor.

B. Safety Representative: The Contractor shall employ a competent trained safety representative who shall be in attendance at the Project site a minimum of one (1) hour per work-day, whenever work is in progress. The contractor's safety representative shall ensure that Contractor's safety program is being fully implemented and meets all requirements of the contract documents. The qualifications of the Contractors safety representative must be acceptable to the TPM. Once the manpower on the project reaches 25 persons a full-time safety professional is required as per Attachment G Safety and Security Requirements section 5.0 Basic HSE Requirements, item 5.1. Ensure that the costs of this requirement is included in the base bid. Additional Safety Professional is required for each additional 50 persons on the jobsite.

1.13 SCHEDULE OF VALUES

A. In the preparation of the Bid Proposal, the Bidder should be aware of the requirement that each successful Bidder shall submit his Schedule of Values in a form as required by the TPM.

1.14 COMPLIANCE WITH LAWS

A. The Bidder is required to be familiar with all Federal, State and Local laws, ordinances, rules and regulations that in any manner affect the Work.

B. Contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for the proper execution and completion of his Work and shall furnish a copy of said permits, licenses and inspection reports to the TPM.

C. Bidders must be authorized to do business in the State of Florida and in Okaloosa County and must possess all required construction licenses in accordance with applicable State and local laws, rules, and regulations.

D. The previously included allowance for the badging of workers to comply with the OCSD requirements of the Jessica Lunsford Act is no longer an allowance. It is each contractor's responsibility to assure that compliance with this requirement is met and the cost for compliance is to be borne by the contractor.

1.15 ADDITIONAL COMMENTS / QUESTIONS AT MEETING / WALK-THROUGH

The following items, questions were discussed in the pre bid meeting and during the walk thru:

1. All present were reminded to review and understand the Specifications in total with specific attention be paid to Attachment A and Sections 00010, 00100 and 00400.

2. A safety briefing on general requirements was presented by Jacobs/Titan and a hand-out is included in this package.

3. Attachment F - Milestone schedule was reviewed to all present. Times of work were discussed:

4. Permitting is required and is handled by Jacobs/Titan. OCSD has its own Jurisdiction over its property and Jacobs/Titan and General Contractor will work together on submitting a permit application to the OCSD Building Official.

5. There are liquidated damages in this project and they are actual damages.

6. A discussion was held pertaining to the Jessica Lunsford Act and the badging requirement for all on-site personnel. All personnel are required to have fingerprinting and background check completed prior to arriving on the jobsite and the badge must be visible. As listed in the documents the cost of this item is to be included in the base bid. The process for obtaining the badge was reviewed.

7. Reminded all to include sales tax in their base bid.

End Pre-Bid Meeting

Okaloosa County School District - Program VI
Jacobs|Titan, A Joint Venture

Thursday March 26, 2026 3:00 PM

General Contracting Package 627A - Max Bruner Jr. Middle School Chiller and RTU Replacement

PRE-BID SIGN IN SHEET

No.	Printed Name	Company	Signature
1	Logan Martin	Jacobs / Titan	
2	Trace Manning	Lord + Son	
3	[illegible]	TITAN	
4	Dustin Merritt	J/T	
5	[illegible]	[illegible]	
6	Patricia Guerrero	Jacobs/Titan	
7	Reagan Huff	Bayou	
8	Jeff Walker	RAM GEN CONTRACTING & DEV.	
9			
10			
11			
12			
13			
14			
15			

Jacobs/Titan – A Joint Venture
School District of Okaloosa County Program Office
4008 Legendary Drive, Suite 600, Destin, FL 32541
850.897.8125 Fax: 850.897.0123

ATTACHMENT F

MILESTONE SCHEDULE

SCHOOL BOARD of OKALOOSA COUNTY
MAX BRUNER JR. MIDDLE SCHOOL CHILLER AND RTU REPLACEMENT

1.	Drawings Issued	20-March-2026
2.	Pre-Bid Meeting	26-March-2026
3.	Bid Date	09-April-2026
4.	Start Construction	23-April-2026
5.	Substantial Completion Date	07-August-2026

Contractor is encouraged to review the schedule for enhancement.

Construction in Existing Space: Contractor will have to coordinate deliveries and construction, which may require a flagman, so as to not interfere with the Owner's operation. All shutdowns will have to be submitted by the Contractor and approved by the TPM prior to any shutting down of systems. These shutdowns may have to be scheduled during nights, weekends or holidays in order to maintain a positive teaching environment. Contractor shall be afforded the greatest flexibility possible in so much as the safety and positive teaching environment is maintained during the construction process.

Attachment A

Final Submittal-rev4

Prepared For:
OCSD

Date: January 05, 2026

Job Name:
OCSD Bruner RTU 14 & RTU 13 Replacement

Opportunity ID: 8451300

Trane U.S. Inc. is pleased to provide the following submittal for your review and approval. Please be aware that changes or revisions could alter pricing.

Product Summary

Qty	Product
2	Performance Climate Changer (CSAA)

Tony Rodriguez, Account Manager
Trane U.S. Inc.
580 East Burgess Road, Suite A-2
Pensacola, FL 32504
E-mail: tony.rodriguez@trane.com
Office Phone: (850) 473-3850
Cell: (850) 860-1823
Fax: (251) 665-2920

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

Submittal acceptance and return is a critical step, so please ensure submittals are returned with approval to release to production within 14 days of submittal date.

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

Table of Contents

Tag Data - Performance Climate Changer (CSAA) (Qty: 2)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-13, RTU-14	2	Performance Climate Changer (CSAA)	CSAA025UB

Product Data - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Unit level options
- Unit size 25
- 6in. integral base frame
- UL listed unit
- Single metal handle - ganged latches
- Right side drive
- 242 Total unit length
- Field Provided (mtrs, lights, controls)
- Hurricane certification
- Wall design pressure <=55 psf
- Roof design pressure <=41.25 psf

Controls and VFD/starter
- Variable volume control system
- Symbio controller - BACnet
- Supply fan VFD

Warranty
- 5 years parts warranty
- 5 year labor warranty

Pipe cabinet section
- Pipe cabinet 1 reduced depth
- Two side doors

Air mixing section (Pos #1)
- Mixing box w/o filter
- Door- both sides
- Back damper low flow TRAQ airflow monitoring station
- Front full face opening
- Bottom damper - opposed blade

Filter section (Pos #2)
- Angled filter
- Door- both sides
- 2in. filter frame
- Pleated media (Field Installed)
- MERV 8
- Customer supplied

Controls section (Pos #3)
- Controls and starter/VFD
- Supply section
- Internal NEMA
- Controller door- left
- Supply high volt. door - right

Custom length section (Pos #4)
- Door - right side

Coil section (Pos #5)
- Door- right side
- Left side - coil supply
- Service panel both sides
- Unit coil height
- Hot water
- 5W Coil
- 1 row
- 80 Coil fins per foot
- Aluminum fins
- Prima flo H (Hi efficient)

.035" (0.889 mm) copper tubes
5/8in. tube diameter (15.875 mm)
Stainless steel coil casing
No turbulators
Coil connections - Standard

Coil section (Pos #6)

Door- right side
Window- right side
Stainless steel drain pan
Left side - drain connection
Left side - coil supply
Service panel both sides
Unit coil height
Chilled water
Type "W" coil
8 rows
89 Coil fins per foot
Aluminum fins
Prima flo H (Hi efficient)
.035" (0.889 mm) copper tubes
5/8in. tube diameter (15.875 mm)
Stainless steel coil casing
No turbulators
Coil connections - Standard

Access section (Pos #7)

Medium

Fan section (Pos #8)

Supply fan
Door- both sides
Door guard
16.5in. dd plenum, full width, H press
2 Fan quantity
Plenum fan
Voltage 460/3
5 hp
1800 RPM
Inverter balance with shaft grounding
Transmitter per fan flow meter
Marine LED light
VFD
Backdraft damper

Performance Data - Performance Climate Changer (CSAA)

Tags	RTU-13, RTU-14	
Unit level options		
Position		
Length (in)	242.000	
Width (in)	80.000	
Overall unit height (in)	67.700	
Rigging weight (lb)	5221.3	
Installed weight (lb)	5459.7	
Roof curb weight (lb)	0.0	
Actual airflow (cfm)	9500	
Unit elevation (ft)	0.00	
Shipping split 1 weight (lb)	5459.8	
Controls section		
Position	**#3**	
Section length (in)	21.830	
Section weight (lb)	420.8	
Greatest discharge PD (in H2O)	0.000	
Controls section static pressure (in H2O)	0.000	
Custom length section		
Position	**#4**	
Section length (in)	25.848	
Section weight (lb)	265.1	
Fan section		
Position	**#8**	
Section length (in)	39.742	
Section weight (lb)	1401.8	
Fan airflow (cfm)	9500	
Elevation (ft)	0.00	
Overall ESP (in H2O)	1.500	
Total static pressure (in H2O)	3.200	
Maximum TSP @ 60 Hz (in H2O)	3.200	
Fan pressure drop (in H2O)	1.920	
Speed (rpm)	2639	
Total brake horsepower (hp)	8.172	
Unit static efficiency (%)	58.64	
Motor hertz (Hz)	89.00	
Discharge 1 bottom - airflow (cfm)	9500	
Discharge 1 bottom - face velocity (ft/min)	1169	
Discharge 1 bottom - pressure drop (in H2O)	0.170	
Discharge 1 bottom - area (sq ft)	8.13	
Access section		
Position	**#7**	
Section length (in)	14.000	
Section weight (lb)	166.8	
Coil section		
Position	**#5**	**#6**
Section length (in)	26.537	43.293
Section weight (lb)	526.9	1599.5
Coil performance airflow (cfm)	6000	9500
Unit airflow (cfm)	9500	9500
Coil face area (sq ft)	24.08	24.08
Coil face velocity (ft/min)	249	394
Air pressure drop (in H2O)	0.025	0.648
Coil section pressure drop (in H2O)	0.025	0.648

Tags	RTU-13, RTU-14	
Coil rigging weight (lb)	120.9	802.2
Coil installed weight (lb)	152.1	1009.4
Top or single coil dry weight (lb)	120.9	802.2
Leaving dry bulb (F)	70.00	54.00
Leaving wet bulb (F)	-	53.65
Entering dry bulb (F)	30.00	79.40
Entering wet bulb (F)	-	66.20
Fluid type	Water	Water
Coil fluid percentage (%)	100.00	100.00
Entering fluid temperature (F)	160.00	45.00
Leaving fluid temperature (F)	140.00	57.00
Fluid temperature rise (F)	-	12.00
Fluid temperature drop (F)	20.00	-
Standard fluid flow rate (gpm)	26.04	60.13
Fluid pressure drop (ft fluid)	1.53	3.68
Fluid velocity (ft/s)	1.87	2.16
Fluid volume (gal)	3.74	24.78
Sensible capacity (MBh)	-	265.78
Total capacity (MBh)	260.28	361.99
Filter section		
Position	**#2**	
Section length (in)	24.500	
Section weight (lb)	426.4	
Filter airflow (cfm)	9500	
Filter area (sq ft)	50.00	
Filter condition	Mid-life	
Filter pressure drop (in H2O)	0.536	
Filter section pressure drop (in H2O)	0.536	
Filter face velocity (ft/min)	190	
Air mixing section		
Position	**#1**	
Section length (in)	46.000	
Section weight (lb)	652.4	
Opening 1 back - airflow (cfm)	400	
Back Traq minimum measurable airflow (cfm)	654	
Opening 1 front - airflow (cfm)	9500	
Opening 1 bottom - airflow (cfm)	9500	
Opening 1 back - area (sq ft)	6.54	
Opening 1 front - area (sq ft)	29.03	
Opening 1 bottom - area (sq ft)	10.36	
Opening 1 back - face velocity (ft/min)	61	
Opening 1 bottom - face velocity (ft/min)	917	
Opening 1 back - pressure drop (in H2O)	0.000	
Opening 1 bottom - pressure drop (in H2O)	0.070	
Opening 1 back total pressure drop (in H2O)	0.000	
Opening 1 bottom total pressure drop (in H2O)	0.070	
Back hood pressure drop (in H2O)	0.000	
Back hood area (sq ft)	15.21	
Back inlet type	Unducted	
Bottom inlet type	Ducted	
Greatest entry PD (in H2O)	0.070	
Total mixing section pressure drop (in H2O)	0.070	
Front total pressure drop (in H2O)	0.000	
Back total pressure drop (in H2O)	0.000	

Tags	RTU-13, RTU-14	
Top total pressure drop (in H2O)	0.000	
Bottom total pressure drop (in H2O)	0.070	
Right side total pressure drop (in H2O)	0.000	
Left side total pressure drop (in H2O)	0.000	

Product Report - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Trane Performance Climate Changer Air Handler

Unit Overview - RTU-13, RTU-14

Application	Unit Size	External Dimensions			Weight	
		Height	Width	Length	Installed	Rigging
Outdoor unit	CSAA025	67.7 in	80.0 in	242.000 in	5460 lb	5221 lb

Quantity of Shipping Sections	Largest Ship Split			Heaviest Ship Split	Elevation
	Height	Width	Length		
1 piece(s)	67.7 in	80.0 in	241.8 in	5460 lb	0.00 ft

Supply Fan			
Airflow	9500 cfm	Total Static Pressure	3.200 in H2O

Note: Height includes air handler sloped roof panel and standing seam.

Construction Features

Panel	2in. foam injected R-13 with thermal break
Panel Material	All unit inner panels - galvanized
Integral Base Frame	6in. integral base frame
Paint	Slate gray
NOA Hurricane Certification	Yes
Agency Approval	UL listed unit
Roof Curb Type	Field supplied roof curb

Unit Electrical

Circuit	Voltage/Phase/Frequency	FLA	MCA	Max Fuse Size	SCCR
Circuit number 1 Supply fan + controls-LL + lights+switch	460/3/60	15.30 A	18.80	30.00	5 kA
Circuit number 2 UV lights 1	115/1/60	1.30 A	1.63	15.00	N/A
Circuit number 3 Receptacle	115/1/60	8.00 A	10.00	15.00	N/A

Unit Controls

Factory Controls Package	Variable volume
Controller Type	Symbio
Controller mounting	Unit mounted
Controller location	Left
Factory programmed	Yes

Warranty

Parts - whole unit	2nd-5th year additional
Labor - beyond 1st year	2nd thru 5th year

Pipe cabinet section

Pipe Cabinet	Front Door	Back Door	Side Door	Weight
Pipe Cabinet 1			Two side doors	246.4 lb

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Air mixing section - Position: 1

Openings							
Face	Path	Type	Airflow	Face Velocity	Area	Pressure Drop	Hood
Back	Outside	Low flow TRAQ	400 cfm	61 ft/min	6.54 sq ft	0.000 in H2O	Yes
Bottom	Return	Opposed blade damper	9500 cfm	917 ft/min	10.36 sq ft	0.070 in H2O	N/A

Section Options	
Door Location	Both

Filter section - Position: 2

Primary Filter									
Type	Frame	Loading	Airflow	Face Area	Face Velocity	Condition	Pressure Drop	Filter Quantity	Filter Size
Pleated media - MERV 8	2in. filter frame	Side load filters	9500 cfm	50.00 sq ft	190 ft/min	Mid-life	0.536 in H2O	18.00	16x25

Filter Section Options	
Door Location	Both

Controls and starter/VFD section - Position: 3

Supply Fan Motor Interface Door	Right
Controller Door	Left

Custom length section - Position: 4

Section Length	25.848 in
Door Location	Right

Heating coil section - Position: 5

Coil Construction	
Model	Hot water - 5/8" Shipping Coil, General (5W)
Rows	1
Tube Diameter	5/8in. tube diameter (15.875 mm)
Coil Connection	Standard
Tube Matl/Wall Thickness	.035" (0.889 mm) copper tubes
Fin Spacing	80 Per Foot
Fin Material	Aluminum fins
Fin Type	Prima flo H (Hi efficient)
Face Area	24.08 sq ft
Coil (top/single) H x L	51 in. (1295 mm) X 68" (1727 mm) finned length
Casing	Stainless steel
Coating	CompleteCoat(TM) Epoxy E-coat
Turbulators	Not Included
Rigging Weight	120.9 lb
Installed Weight	152.1 lb
Coil Section Options	
Extended Drain and Vent	YES
Drain Pan Size	Small
Service Panel	Both sides
Door Location	Right

Coil Performance	
Capacity	
Total	260.28 MBh
Air	
Flow	6000 cfm
Entering Dry Bulb	30.00 F
Leaving Dry Bulb	70.00 F
Pressure Drop	0.025 in H2O
Face Velocity	249 ft/min
Fluid	
Flow	26.04 gpm
Entering	160.00 F
Leaving	140.00 F
Pressure Drop	1.53 ft fluid
Tube Velocity	1.87 ft/s
Reynolds Number	20071.84
Type	Water
Fouling Factor	0.00025 hr-sq ft-deg F/Btu
Volume	3.74 gal
AHRI 410 Classification	
AHRI 410 Classification	NOT Certified by AHRI
Data Generation Date	12/23/2025
Trane Select Assist update number	3020

Note: Coil is NOT certified by AHRI. Coil is within the scope of AHRI Standard 410.

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Cooling coil section - Position: 6

Coil Construction	
Model	Chilled water - 5/8" Shipping Coil, General (W)
Rows	8
Tube Diameter	5/8in. tube diameter (15.875 mm)
Coil Connection	Standard
Tube Matl/Wall Thickness	.035" (0.889 mm) copper tubes
Fin Spacing	89 Per Foot
Fin Material	Aluminum fins
Fin Type	Prima flo H (Hi efficient)
Face Area	24.08 sq ft
Coil (top/single) H x L	51 in. (1295 mm) X 68" (1727 mm) finned length
Casing	Stainless steel
Coating	CompleteCoat(TM) Epoxy E-coat
Turbulators	Not Included
Rigging Weight	802.2 lb
Installed Weight	1009.4 lb
Voltage	115/60/1
Coil Section Options	
Extended Drain and Vent	YES
Drain Pan	Stainless steel
Drain Pan Size	Medium large
Drain Connection	Left
Minimum Trap Height (L)	6.240 in
H Trap Dimension	3.493 in
J Trap Dimension	1.747 in
Service Panel	Both sides
Door Location	Right
Window	Right
UV Light	Yes

Note: Coil is NOT certified by AHRI. Coil is within the scope of AHRI Standard 410.

Coil Performance	
Capacity	
Total	361.99 MBh
Sensible	265.78 MBh
Air	
Flow	9500 cfm
Entering Dry Bulb	79.40 F
Entering Wet Bulb	66.20 F
Leaving Dry Bulb	54.00 F
Leaving Wet Bulb	53.65 F
Pressure Drop	0.648 in H2O
Face Velocity	394 ft/min
Fluid	
Flow	60.13 gpm
Entering	45.00 F
Leaving	57.00 F
Pressure Drop	3.68 ft fluid
Tube Velocity	2.16 ft/s
Reynolds Number	7608.50
Type	Water
Fouling Factor	0.00000 hr-sq ft-deg F/Btu
Volume	24.78 gal
AHRI 410 Classification	
AHRI 410 Classification	NOT Certified by AHRI
Data Generation Date	12/23/2025
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Access/blank/turning section - Position: 7

Options	
Section Length	14.000 in

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Supply fan section - Position: 8

Fan Data	
Wheel Diameter/Type/Class	16.5in. dd plenum, full width, H press
Fan Quantity	2
Discharge Location	Bottom front
Motor Location	Right side drive
Blades	Higher eff.(some bands lower,more spike)
Drive Service Factor	Direct drive
Fan K-factor	1441.00
FEI	1.20

Fan Performance	
Airflow	9500 cfm
Total Static Pressure	3.200 in H2O
Total Brake Power	8.172 hp
Operating Speed	2639 rpm
AMCA FEG	FEG85
Bare fan peak total efficiency	73.00 %
Unit Static Efficiency	58.64 %

Motor Interface Options	
Selection Type	VFD
Voltage	460/3
Mounting Location	Internal mounting
VFD Frequency	89.00 Hz

Motor Data	
Power / Fan	5 hp
Voltage	460/3
Speed	1800
Class	NEMA premium compliant TEFC
Efficiency	90.08 %
Part Load Efficiency	85.75 %
Fan electrical power (FEP)	7.08 kW
Wire to air static efficiency	50.39 %

Note: Certified airflow performance per AHRI 430

Fan Section Options	
Backdraft Dampers	YES
Fan Wheel Balance	Inverter balance with shaft grounding
Door Location	Both
Door Guard	Yes
Marine Light	Marine LED light

Fan Discharge Options

Face	Type	Airflow	Face Velocity	Area	Pressure Drop	Exhaust Hood	Damper Torque Requirement
Bottom Face Feature	Bottom rectangular discharge	9500 cfm	1169 ft/min	8.13 sq ft	0.170 in H2O	N/A	N/A

Note: Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org.

Pressure Drop in (in w.g.)	
Supply fan	
Air mixing section	0.07
Filter section	0.54
Coil section	0.02
Coil section	0.65
Fan section	0.42
Internal Static Pressure	**1.70**
External Static Pressure	**1.50**
Total Static Pressure	**3.20**

Mechanical Specifications - Performance Climate Changer (CSAA)
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GENERAL

Outdoor air handling units will be shipped with all openings covered to protect unit interior from in-transit debris.

Installing contractor is responsible for long term storage in accordance with the Installation, Operation, and Maintenance manual (CLCH-SVX07*-EN).

Unit shall be UL and C-UL Listed.

Supply fans within the scope of AHRI Standard 430 are "Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org".

Unit sound performance data shall be 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.

Refer to product data for AHRI certification status. Propylene glycol and calcium chloride, or mixtures thereof, are outside the scope of AHRI Standard 410 and, therefore, do not require AHRI rating or certification. For coils within the scope of AHRI Standard 410 cooling coil performance is 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. Heating performance for heat pump or condenser mode is not certified.

Manufacturer provided VFDs shall be certified to AHRI Standard 1210 "Performance Rating of Variable Frequency Drives" to ensure documented and reliable VFD efficiency.

Hurricane Certification
Outdoor units shall be approved to comply with the High Velocity Hurricane Zone of the Florida Building Code (Latest Edition) in the Manufactured Buildings category. The product shall have been reviewed by Miami-Dade County Product Control Division and accepted by the Board of Rules and Appeals (BORA) to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ). The rating, as detailed in the approved NOA submittal package for the product, shall apply to the full range of lengths, widths, and heights of outdoors units being proposed on the project. Each outdoor unit shall bear a permanent label with the manufacturer's name or logo, city, state, and the statement "Miami-Dade County Product Control Approved".

For unit sizes 3 to 30, unit is Miami-Dade Product Control Approved per NOA file number 20-0819.10 Unit is listed under File Classification - "High Velocity Hurricane Zone", Category - "Manufactured Buildings", with a Maximum Design Wind Load of +/- 75 PSF.

Unit Construction

Outdoor unit roofs shall incorporate a standing seam on the exterior to ensure a rigid roof construction and prevent water infiltration. Roof assembly shall overhang all walls by 1.5-inch minimum to prevent sheeting from roof to side panels. Rain gutters shall also be provided over all doors shorter than total unit height to direct rain away from the door assembly. Outdoor roofs shall be sloped, not less than 0.125 inches per foot, for water drainage. Where outdoor units are shipped in multiple sections, provide standing-seam joiners at each split with adhesive, hardware, and cover strips for field joining by the installing contractor.

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. Casing construction will comply with NFPA 90A.

All outdoor AHU interior casing panels will be made of galvanized steel.

Unit Paint

External surface of unit casing will be coated with water-based polyurethane paint. Color to be standard "Slate Gray". Factory-painted units will be able to withstand a salt spray test in accordance with ASTM B117 for a minimum of 500 consecutive hours and shall meet the following requirements following the salt-spray test:
- Mean scribe creepage rating of at least 6 per ASTM D1654 procedure A
- Blister size no larger than #6 per ASTM D714
- Blister density no greater than Medium per ASTM D714
- No onset of red rust

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-ºF/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.

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. Outswing doors shall have easily removable hinges and handles that can be relocated to change the door swing if needed. Door hinges shall be made of stainless steel.

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. 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.

Field supplied Curb
Outdoor AHU is to be mounted on field-supplied specialty curb. Refer to the specialty curb manufacturer's installation requirements for any curb assembly, curb mounting to roof structure, or unit-to-curb attachment. For units requiring external piping cabinet(s), the specialty curb manufacturer is to also provide a curb for external pipe chase(s).

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 25,000 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. The service module shall include a GFCI receptacle separate from the load side of the equipment. Electrical contractor shall be required to provide a 120V supply to the factory-mounted service module for the marine light circuit per NEC. The GFCI receptacle can be fed by the same 120V feed (via jumper) or a separate 120V supply must be brought to the service module for the GFCI receptacle circuit per NEC.
Service module shall be provided on the fan section.
Refer to the Product Data section of the submittal for sections with marine lights.

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.

Outdoor units shall be shipped on frame for the purpose of mounting units on a roof curb or field-supplied pier support system. Refer to the Product Data section for type of the base frame provided (for roof curb or pier-mount).

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.

MIXING SECTION
A mixing section shall be provided to support the damper assembly for outdoor, return, and/or exhaust air.

External Pipe Cabinets
Piping cabinet is supplied factory-assembled of the same construction as the main unit casing. Piping cabinets are shipped separate to be field installed on the side of the unit.
Refer to the unit As-Built and Product Data section for specific information on which sections are supplied with a corresponding pipe cabinet and pipe cabinet access doors.

Dampers
Dampers shall modulate the volume of outdoor, return, or 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. Dampers may be arranged in a parallel or opposed-blade configuration.

Inlet Hoods
Inlet hoods are provided on the outside air openings and equipped with high performance moisture eliminators to minimize water carryover from the outside into the unit casing. Eliminators also perform the function of a bird screen to prevent nesting.
Refer to the unit As-Built and Product Data section for specific information on which sections are supplied with inlet hood.

Airflow Measurement Station (Low Flow TRAQ Dampers)

A factory-mounted airflow measurement station tested in accordance with AMCA Standard 611 for Airflow Measurement Performance shall be provided in the outdoor and/or return air opening to measure airflow. The damper blades shall be galvanized steel, housed in a galvanized steel frame and mechanically fastened to a rotating axle rod. The dampers shall be rated for a maximum leakage rate of 4 cfm/ft² at 1 in. w.g. complying with ASHRAE 90.1 maximum damper leakage. The low-flow airflow measurement station shall be capable of measuring from 7.5 percent to 100 percent of unit nominal airflow. The airflow measurement station shall adjust for temperature variations and provide a 2 to 10 Vdc signal that corresponds to actual airflow for controlling and documenting airflow. The accuracy of the airflow measurement station shall be ±5 percent.Minimum outside air damper in the Low Flow TRAQ system requires separate actuator.

Title 24
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

Averaging Temperature Sensor

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

A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

Mixing Section Damper Actuators
Spring return actuators shall be mounted with the outside air damper normally closed and the return air damper normally open. Actuator feedback will be wired to the unit controls system.

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

2-inch pleated media filters made with 100% synthetic fibers that are continuously laminated to a supported steel-wire grid with water repellent adhesive shall be provided. Filters shall be capable of operating up to 625 fpm face velocity without loss of filter efficiency and holding capacity. The filters shall have a MERV 8 rating when tested in accordance with the ANSI/ASHRAE Standard 52.2.

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,

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.

Coil with Inspection
The coil section complete with a double-wall, shall include a removable door downstream of the coil 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 shall be provided with a thermal break construction of door panel and door frame.

An easily removable service panel shall be provided in sections as specified, to facilitate access to unit for periodic servicing, or for removal and replacement of coils. Removal of service panel will not impact the structural integrity of the unit.

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 (UP, WP, 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. Refer to the Product Data section of the submittals for AHRI certirification status.

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 5/8" [16 mm] OD 0.035" [0.889 mm] thick copper.

Coil Coating
Coil shall have a flexible epoxy polymer e-coat uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation and a uniform dry film thickness from 0.8 - 1.2 mil on all surface areas including fin edges. Superior hardness characteristics of 2H per ASTM D3363-92A and a cross-hatch adhesion of 4B-5B per ASTM B3359-93. Impact resistance shall be up to 160 in/lb per ASTM D2794-93. Humidity and water immersion resistance shall be up to a minimum 1000 and 260 hours respectively (ASTM D2247-92 and ASTM D870-02). Corrosion durability shall be confirmed through testing to no less than 5,000 hours salt spray per ASTM B117-90 using scribed aluminum test coupons.

Averaging Temperature Sensor

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

A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

Ultraviolet (UVc) Lights
UV-C light fixtures and lamps shall be provided by the air handler manufacturer. The UV-C fixtures shall be factory-assembled and tested in the air handler. Lamp life shall be 9,000 hours minimum with no more than a 15% loss of output after one year of continuous use. The UV-C fixtures and lamps shall be accessible via downstream door for maintenance of the bulbs. Fixtures shall meet the UL drip-proof design criteria. Fixtures shall be constructed of UV resistant polymer to resist corrosion. Fixtures shall have been tested and recognized by UL/C-UL under Category Code ABQK (Accessories, Air Duct Mounted), UL Standards 153, 1598 & 1995/60335.

All polymeric materials that come into direct or indirect (reflected) contact with UV-C light shall be UV-C resistant or shielded from the UV-C light using a certified UV-C tolerant material such as metal.

Access doors shall be provided at the location of each UV-C light as indicated on the plans and schedule. A window or viewport shall be provided to allow viewing of the UV-C light array to confirm operation. The AHU windows shall be treated to assure the UV-C energy emitted through it is below the threshold limits specified by NIOSH and ACGIH.

All sections of the handler with access doors where the UV-C lights may pose a risk for direct exposure shall have a mechanical interlock switch that disconnects power to the lights when the door is opened. Each UV section shall also be equipped with an externally mounted on-off/disconnect/shut off switch that disconnects power to the UV-C lights. The switch shall be equipped with a lock-out/tag-out to prevent unwanted operation of the UV-C lights.

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 shall be provided with a thermal break construction of door panel and door frame.

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*. Central Station Air Handling Unit Supply Fans are "Certified by the AHRI Central Station Air-Handling Unit (AHU) Certification Program, based on AHRI Standard 430/431. AHRI certified units are subject to rigorous and continuous testing, have performance ratings independently measured and are third-party verified. Certified units may be found in the AHRI Directory at www.ahridirectory.org" Central Station Air Handling Unit Supply Fans shall be tested and rated in-accordance with AHRI Standard 260 for sound performance.

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 grounding assembly installed on the fan motor to discharge both static and induced shaft currents to ground.

On units supplied with plenum or motorized impeller fans, 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)*.

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
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.

Fan Discharge Temperature Sensor

A button or probe temperature sensor shall be mounted in the fan discharge.

A 10,000 ohm, Type II thermistor is the sensor material that shall be mounted.

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. *Refer to the Product Data section for fans with high performance flow 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 provide 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
j) Manual motor protection MMP

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.

Hi Limit Pressure Cutout
A factory-installed High Limit Pressure Cutout with two C-Form contacts. One contact will be wired to the unit controls system. Factory set to 10" WC with a field adjustable setting of 0.40" to 12" WC and an operating temperature limits of -40°F to 180°F.

The supply fan's Starter/VFD shall be mounted internal of unit casing in the controls section. The internal enclosure shall be an integral part of the unit casing to allow for thermal venting to casing interior, but shall be accessible from unit exterior through access door. Internally mounted starters shall have doors with the same construction as other doors on unit. An external disconnect shall be mounted through the door to the starter/VFD to disconnect full power from starter/VFD.

Each fan in the multiple-fan array shall be provided with integral back flow prevention: a backdraft damper that prohibits recirculation of air in the event a fan or multiple fans become disabled. Dampers are tested and rated based on AMCA Standard 500. Dampers to be heavy duty type capable of a maximum back pressure that exceeds the design total static pressure with minimal leakage. The dampers should have a minimal total effect on airflow performance-both pressure drop when open and system effect on the fan. The damper blades and frame shall be extruded aluminum with blade edge seals locked into the blade edge. Adhesive type seals are unacceptable. AHU manufacturer responsible for providing proper spacing upstream of dampers to ensure full, uniform airflow through upstream components. For units where the damper(s) are supplied at the jobsite, the installing contractor shall contract a certified TAB contractor to verify uniform airflow thru upstream components.
Refer to Product Data for specific information on which sections are supplied with a backdraft damper.

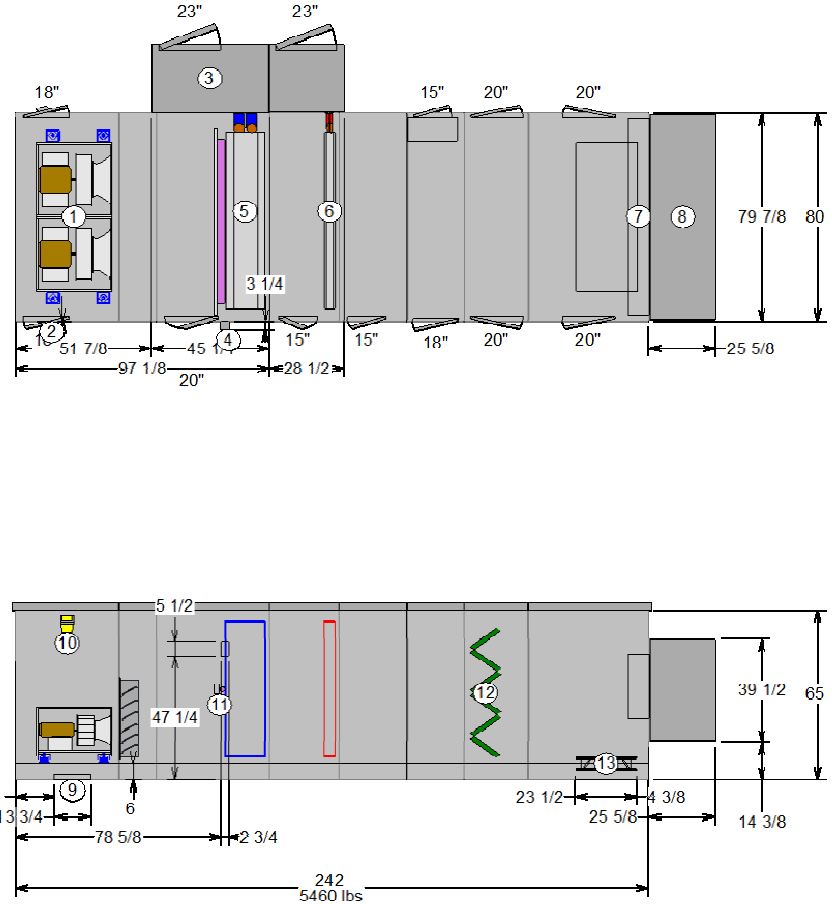
Variable Volume Control System
Factory-mounted direct-digital control (DDC) systems shall be engineered, mounted, wired, and tested by the air handler manufacturer to reduce installed costs, improve reliability, and save time at unit startup. Each control system shall be fully functional in a stand-alone 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 Symbio
A dedicated programmable Symbio 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 Symbio controller and to the end devices, shall be customer supplied. The Symbio controller communicates using the BACnet protocol. The Symbio controller has USB Host Port, USB Service Tool Port, two 100M Ethernet Ports, and uSD Card Socket for expandable flash memory. Other advanced features include automated controller back-up, and optional features such as secure remote connectivity, wireless building communications, mobile device connectivity, and custom programming with expandable I/O.

Unit Mounted Control System
All factory installed end devices shall be wired and terminated to expansion modules throughout the unit. The expansion modules will communicate to the DDC controller with a communication bus.

Standard Factory Programming
Standard Factory Programming installed to unit per specific unit selections.

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



1 Plenum fan - 16.5in. dd plenum, full width, H press Supply fan 5 hp 460/3
2 Light switch and/or receptacle RH
3 Pipe cabinet left (2)
4 UV light switch RH
5 Cooling coil - 8 Rows Coil type 5/8" Shipping Coil, General (W)
6 Heating coil - 1 Rows Coil type 5/8" Shipping Coil, General (5W)
7 Low flow traq damper back 24.75 x 75.25
8 Hood back
9 Opening bottom 60 x 13.75
10 Marine light
11 UV light rack
12 Angled filters - Pleated media - MERV 8
13 Damper bottom-opposed blade 56.75 x 23.5

Doors
18 width x 55 height
23 width x 53 height
20 width x 55 height
15 width x 55 height

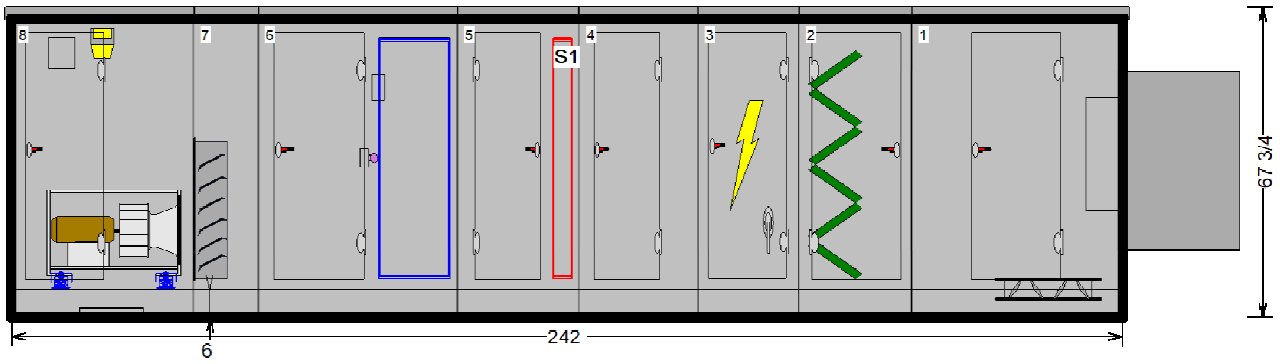
For maneuvering purposes, include 1.125 inches to each skip split length for overlapping panel flange. Flange will not add to overall installed unit length shown.

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

Unit size: 25	Job Name: OCSD Bruner RTU 14 & RTU 13 Replacement	Unit Casing: 2in Double Wall Foam
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

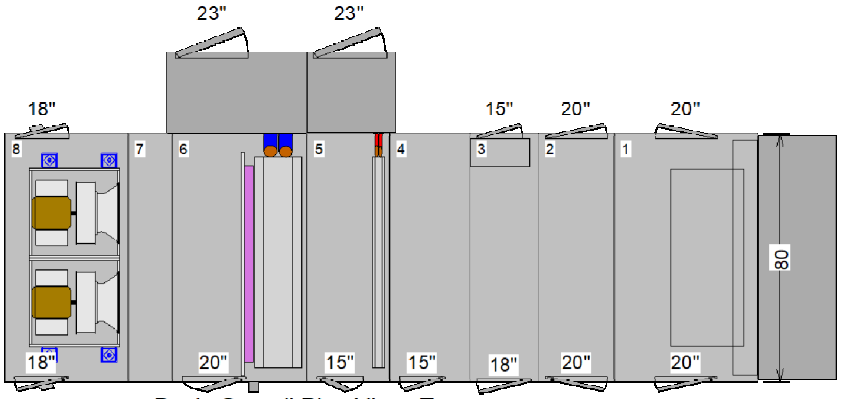
Shipping splits are indicated by thick black lines



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.

Pos #	Module	Length	Weight
1	Air mixing section	46	652.41
2	Filter section	24 1/2	426.36
3	Controls section	21 7/8	420.84
4	Custom length section	25 7/8	265.08
5	Coil section	26 1/2	526.89
6	Coil section	43 3/8	1599.50
7	Access section	14 1/8	166.83
8	Fan section	39 3/4	1401.81

Installed Unit Weight 5459.71 lbs



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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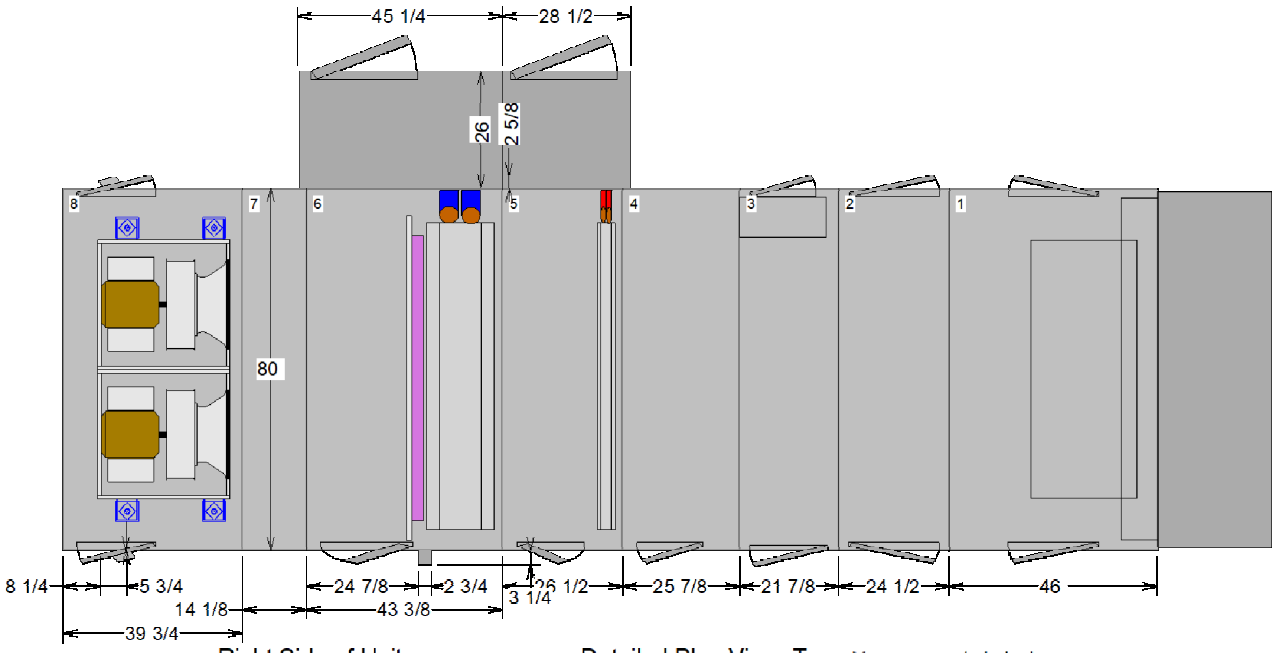
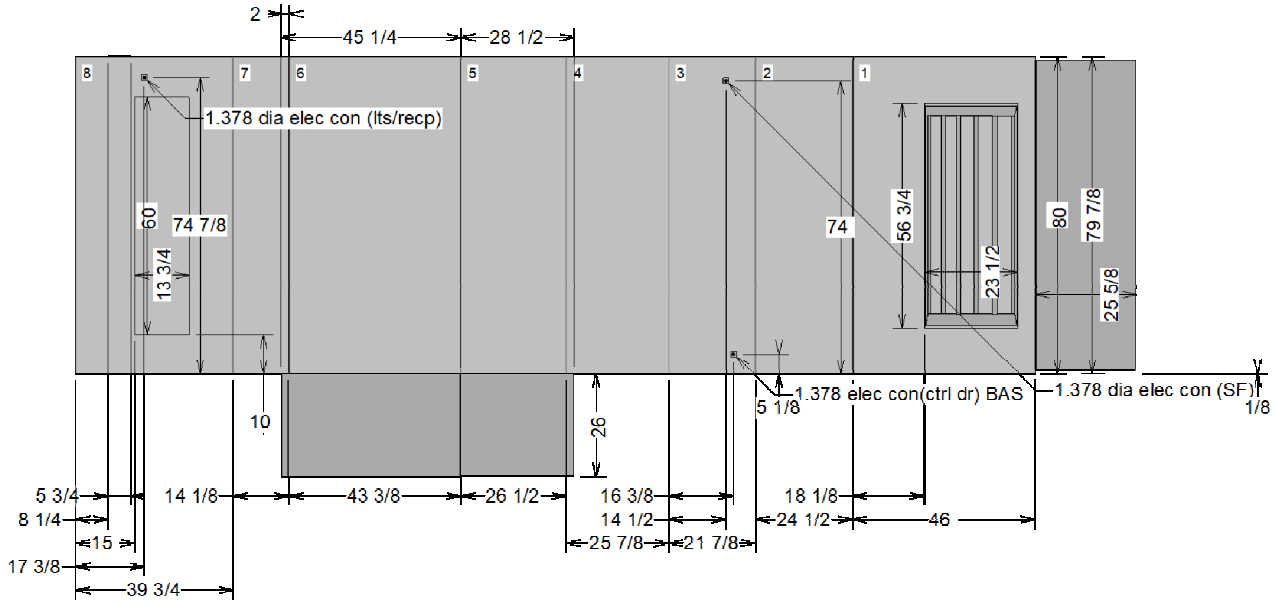
Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



Right Side of Unit — Detailed Plan View: Top - Measurements in inches



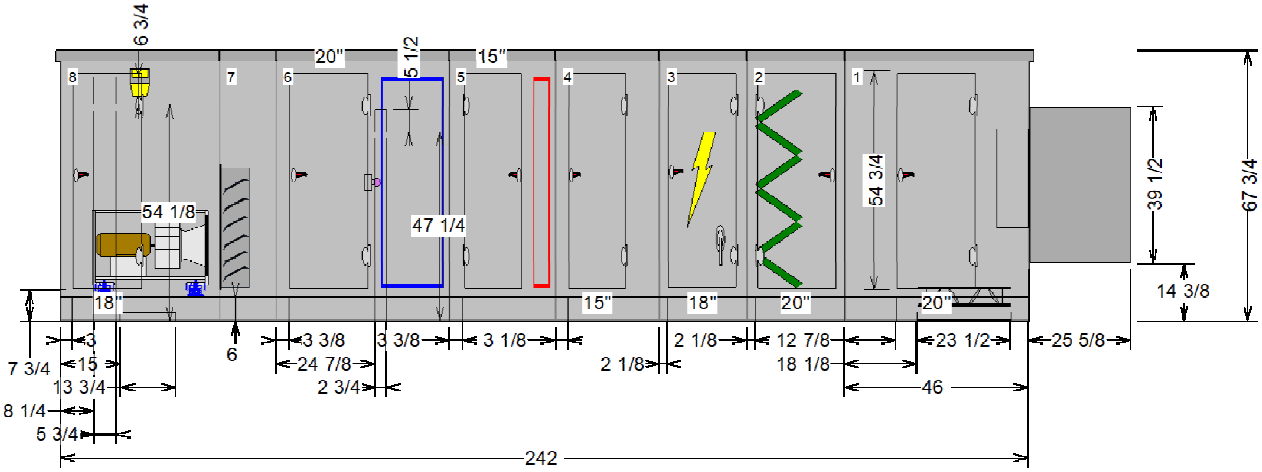
Left Side of Unit — Detailed Plan View: Bottom - Measurements in inches

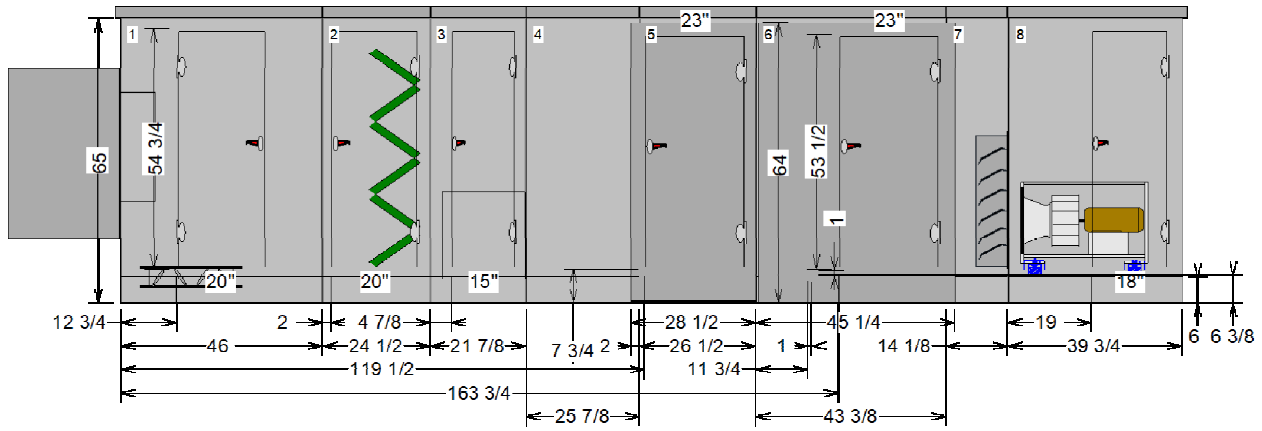
****Placement of electrical conduit may vary by a tolerance of 8" in any direction.**

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

Unit size: 25	Job Name: OCSD Bruner RTU 14 & RTU 13 Replacement	Unit Casing: 2in Double Wall Foam
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14





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

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Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
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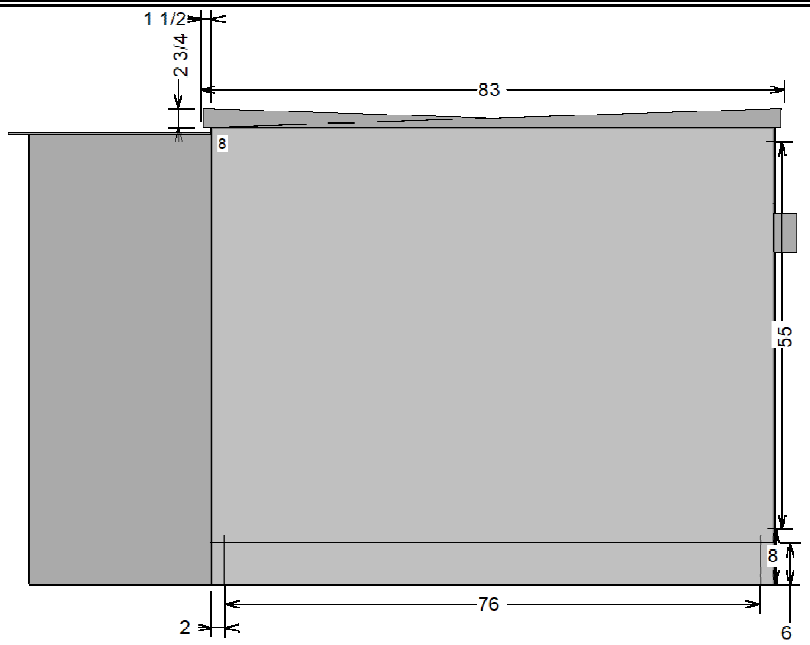
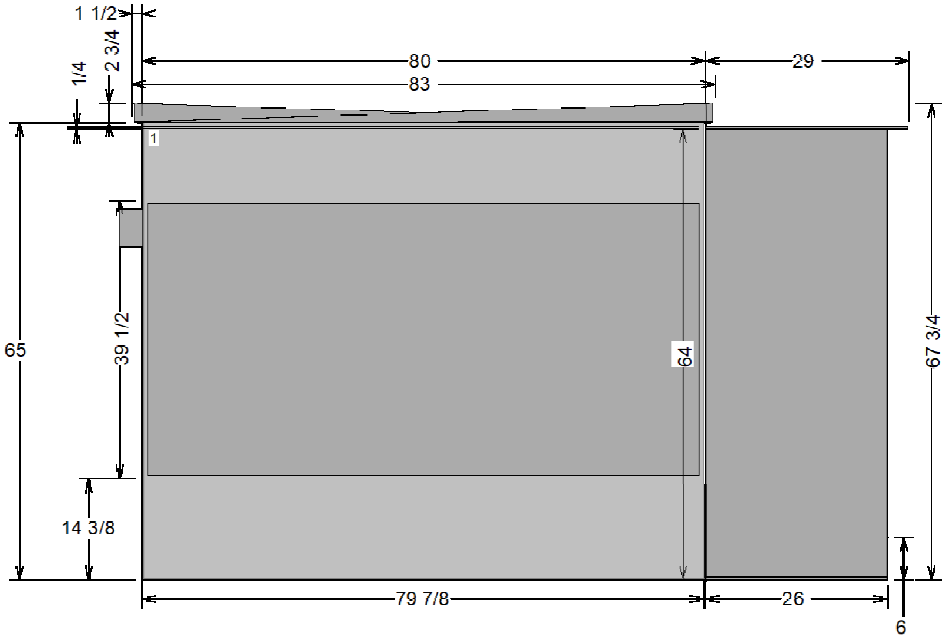
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



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

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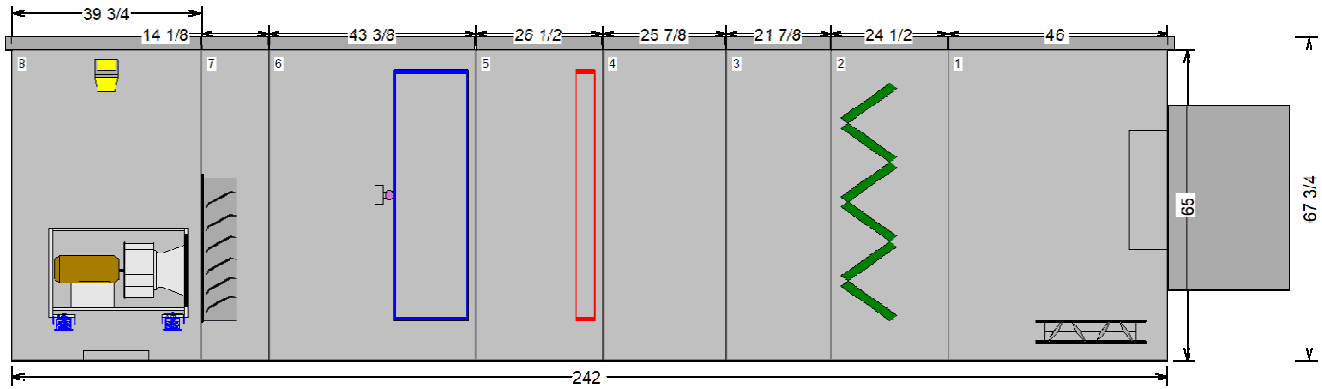
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



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

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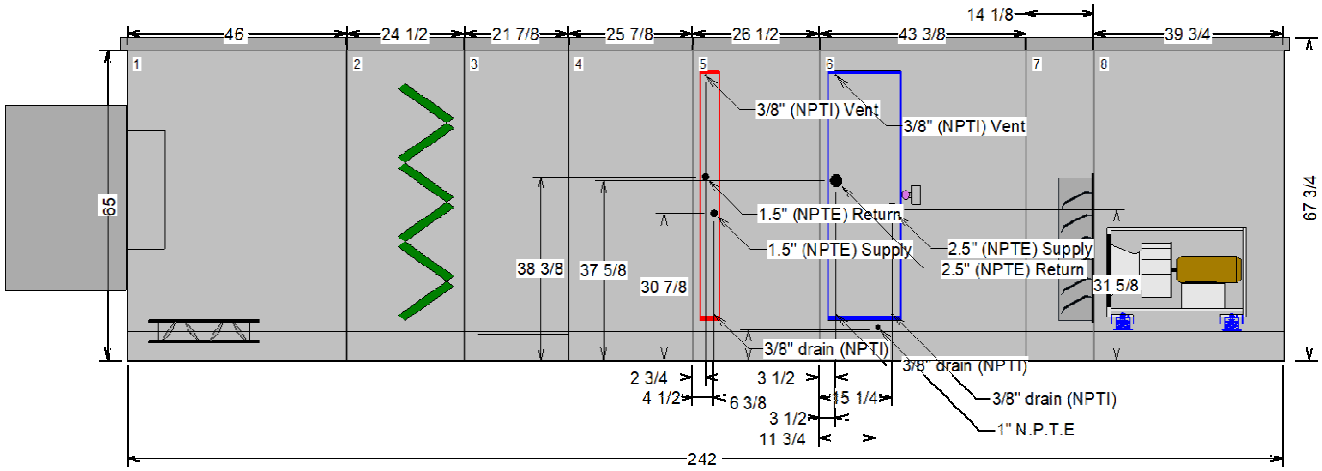
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



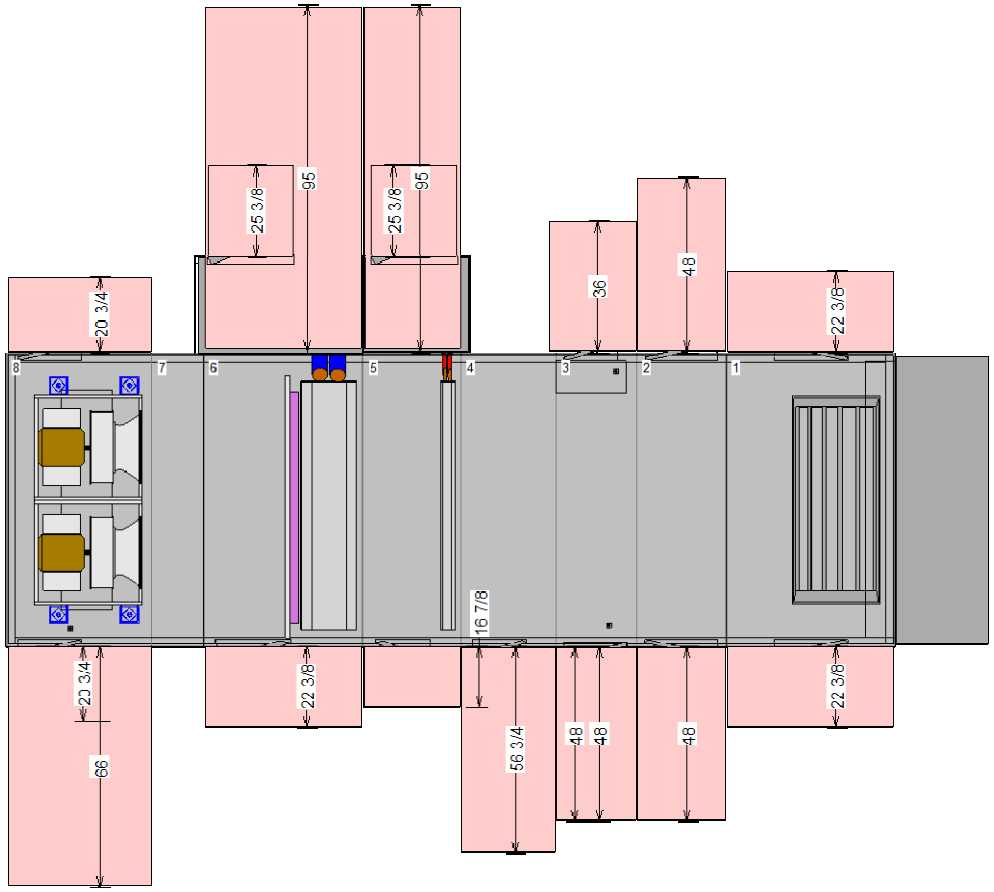
Coil connection view: Left - Measurements in inches

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

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

Unit size: 25	Job Name: OCSD Bruner RTU 14 & RTU 13 Replacement	Unit Casing: 2in Double Wall Foam
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



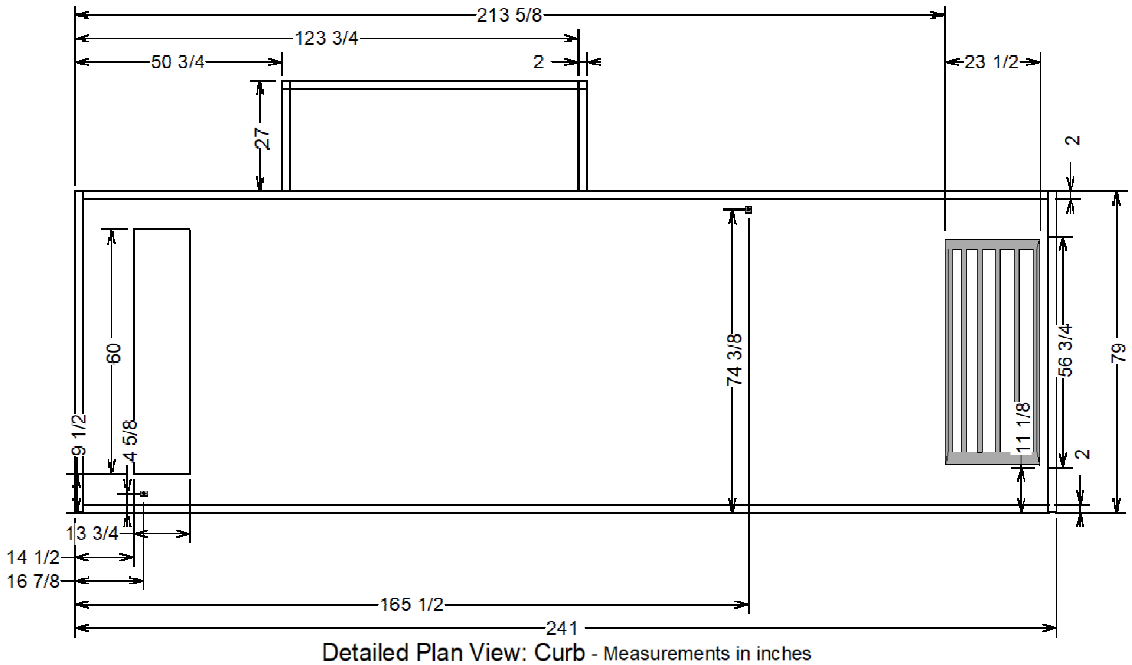
Basic Service Clearance - Plan - Measurements in inches

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

Unit size: 25	Job Name: OCSD Bruner RTU 14 & RTU 13 Replacement	Unit Casing: 2in Double Wall Foam
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Dimensional Drawings - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Roof curb details included are intended to show dimensions for mounting unit to "A" roof curb on a flat roof.
All special curb details such as isolation curbs, adapter curbs and pitched roof curbs are to be provided by others.



Detailed Plan View: Curb - 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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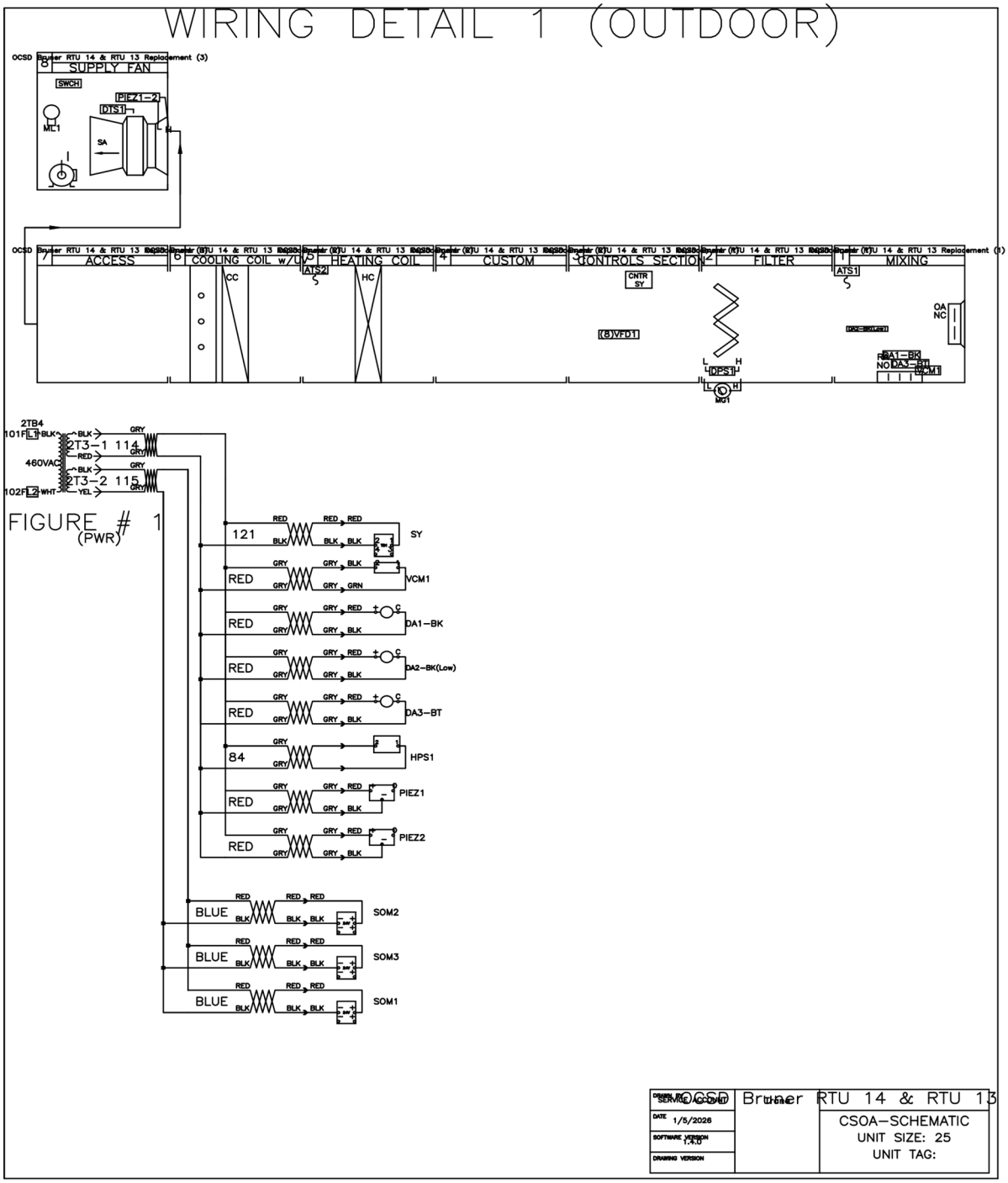
Product group: Outdoor unit	Actual airflow: 9500 cfm	Proposal Number:
Integral base frame: 6in. integral base frame	Sales Office: Mobile	Tags: RTU-13, RTU-14
Paint: Slate gray		Rigging/Installed Weight: 5221.3 lb / 5459.7 lb

Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

MARINE LIGHT BOX

(SEPARATE BOX)

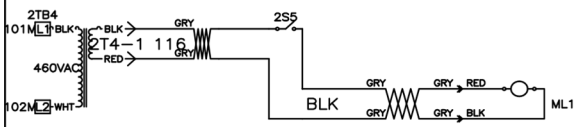


FIGURE # 2
(PWR)

DRAWN BY SERVICE ACCOUNT	OCSD Bruner RTU 14 & RTU 13 Replacement	
DATE 1/5/2026		CSOA–SCHEMATIC
SOFTWARE VERSION 1.4.0		UNIT SIZE: 25
DRAWING VERSION		UNIT TAG:

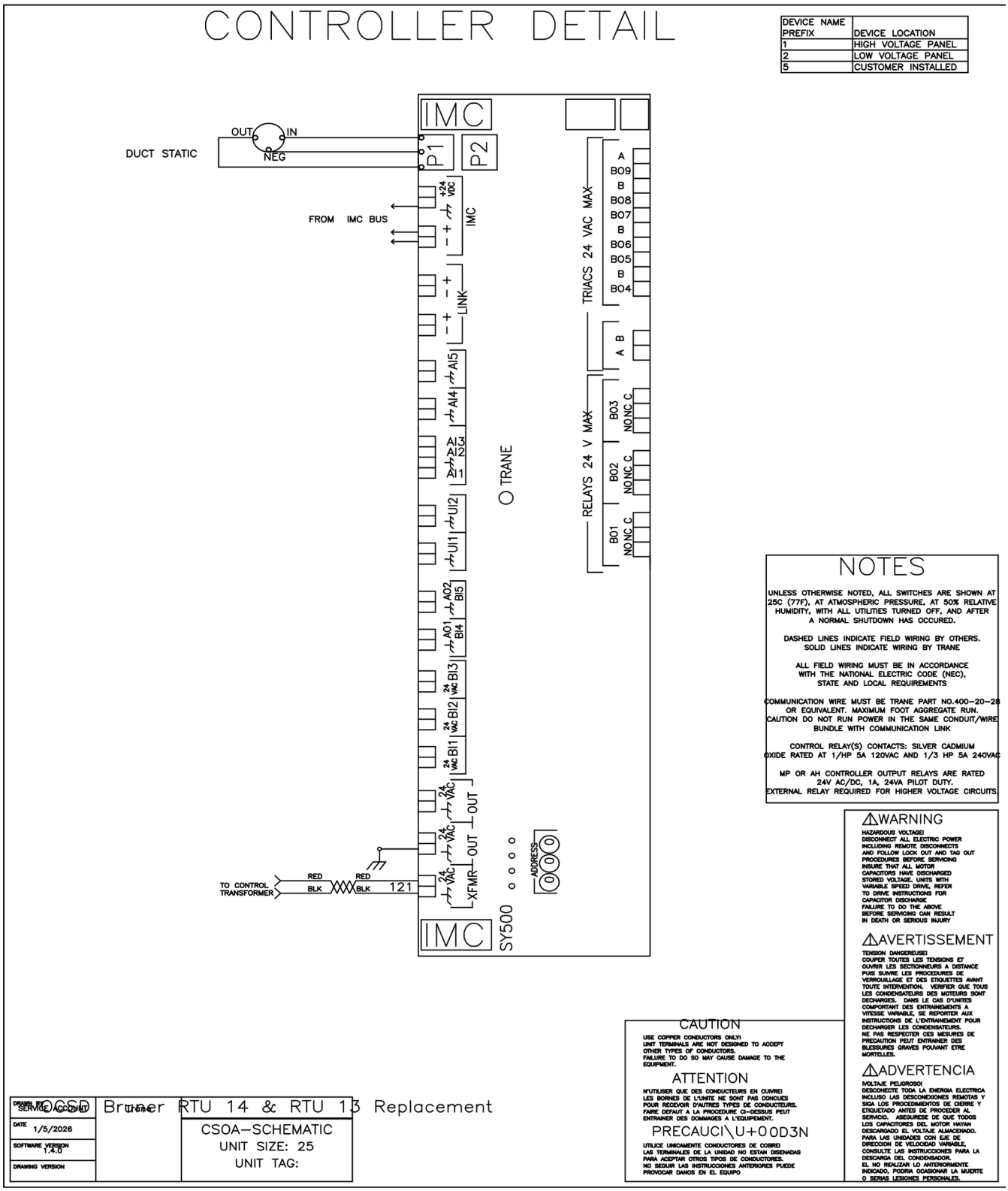
Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

LEGEND DETAIL 1 (OUTDOOR)

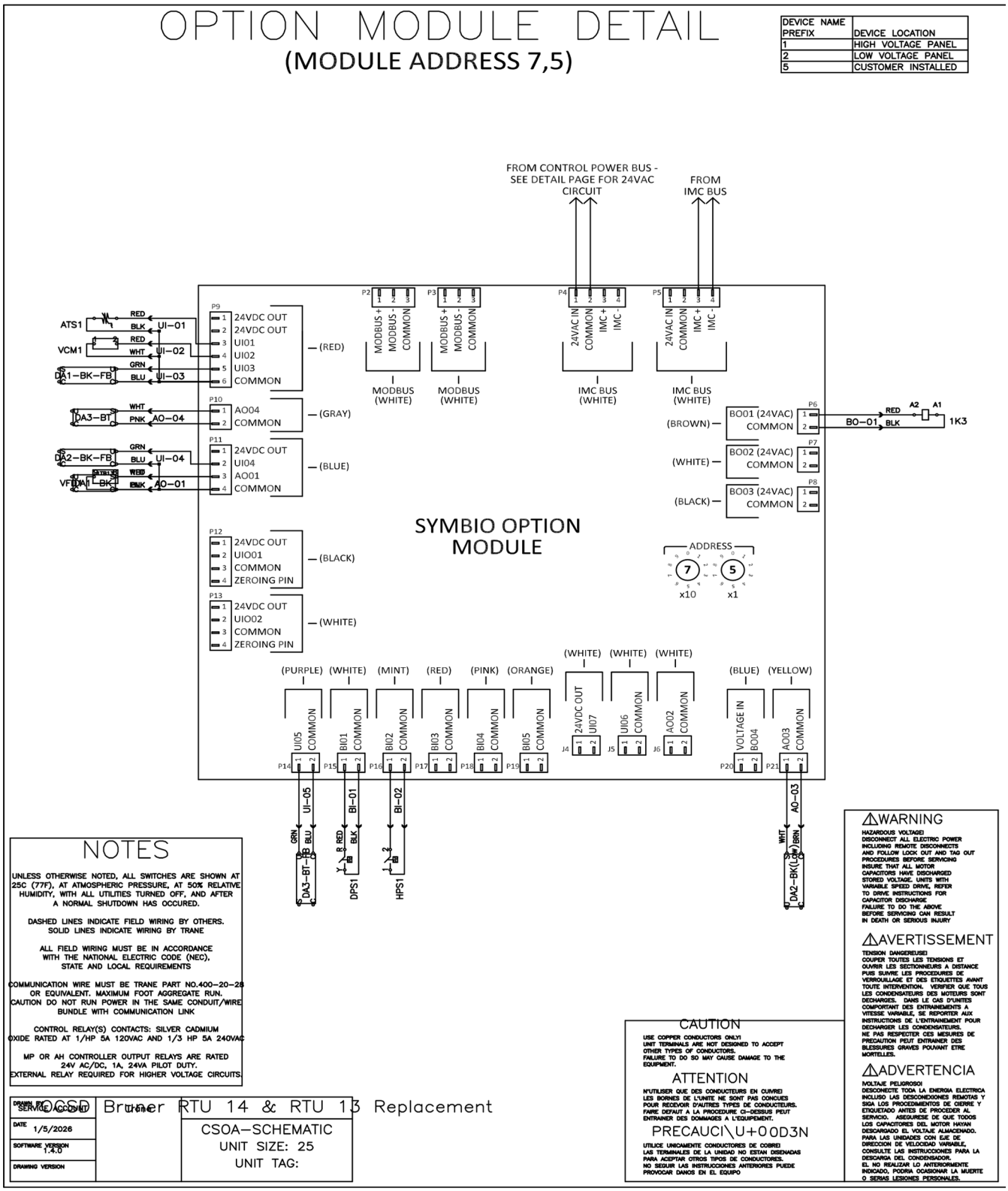
POS#	BUILD GROUP	DESCRIPTION	LABEL	PWR HR-WIRE	SIGNAL HR-WIRE	XFMR	POWER VA
0		150VA TRANSFORMER	2T3				
0		150VA TRANSFORMER	2T4				
0		Duct Static Pressure Local	2U3				
0		Symbio500 Controller	SY	121		2T3-1	26
	1	Option Module #1 [Address 7,5]	SOM1	BLUE		2T3-2	13
1	1	Averaging Temperature Sensor (10K Type 2)	ATS1		UI-01		
1	1	Ventilation Control Module	VCM1	RED	UI-02	2T3-1	8
1	1	Back Damper Actuator	DA1-BK	RED	AO-01	2T3-1	10
1	1	Feedback Damper Actuator	DA1-BK		UI-03		
1	1	Back Damper Actuator	DA2-BK(Low)	RED	AO-03	2T3-1	7
1	1	Feedback Damper Actuator	DA2-BK		UI-04		
1	1	Bottom Damper Actuator	DA3-BT	RED	AO-04	2T3-1	10
1	1	Feedback Damper Actuator	DA3-BT		UI-05		
2	1	Dirty Filter Switch	DPS1		BI-01		
2	1	Minihelic Gauge	MG1				
3	1	High Pressure Switch	HPS1	84	BI-02	2T3-1	1
3	1	Supply Fan S/S	1K3		BO-01		
3	1	Supply Fan Speed	VFD1		AO-01		
	2	Option Module #2 [Address 7,6]	SOM2	BLUE		2T3-2	13
5	2	Averaging Temperature Sensor (10K Type 2)	ATS2		UI-01		
	3	Option Module #3 [Address 7,7]	SOM3	BLUE		2T3-2	13
8	3	Marine Light	ML1	BLACK		2T4-1	22
8	3	Flow meter	PIEZ1	RED	UI-01	2T3-1	2
8	3	Flow meter	PIEZ2	RED	UI-02	2T3-1	2
8	3	Discharge Air Sensor (10K Type 2)	DTS1		UI-03		

DRAWN BY SERVICE ACCOUNT	OCSD Bruner RTU 14 & RTU 13 Replacement	
DATE 1/5/2026		CSOA-SCHEMATIC
SOFTWARE VERSION 1.4.0		UNIT SIZE: 25
DRAWING VERSION		UNIT TAG:

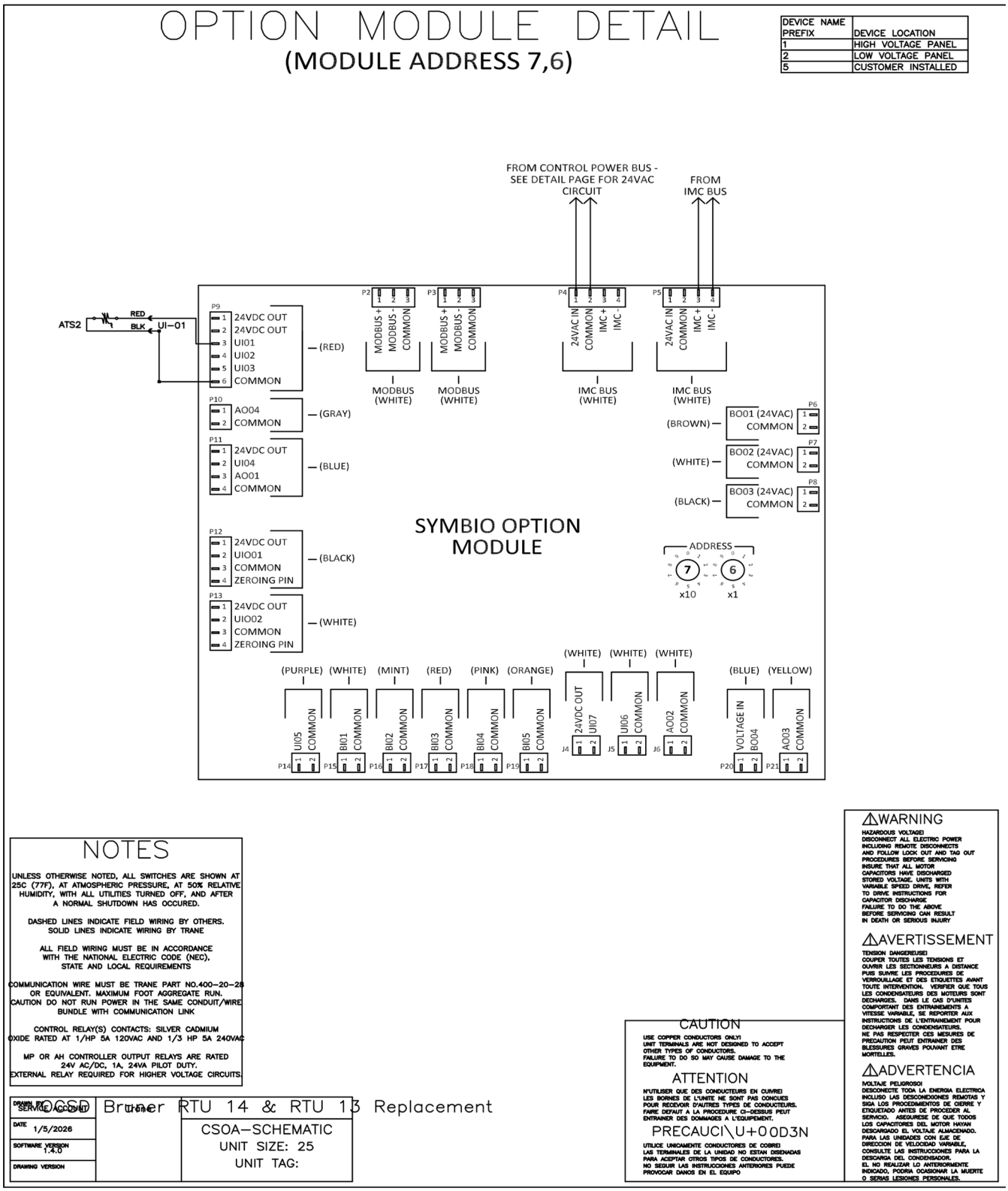
Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



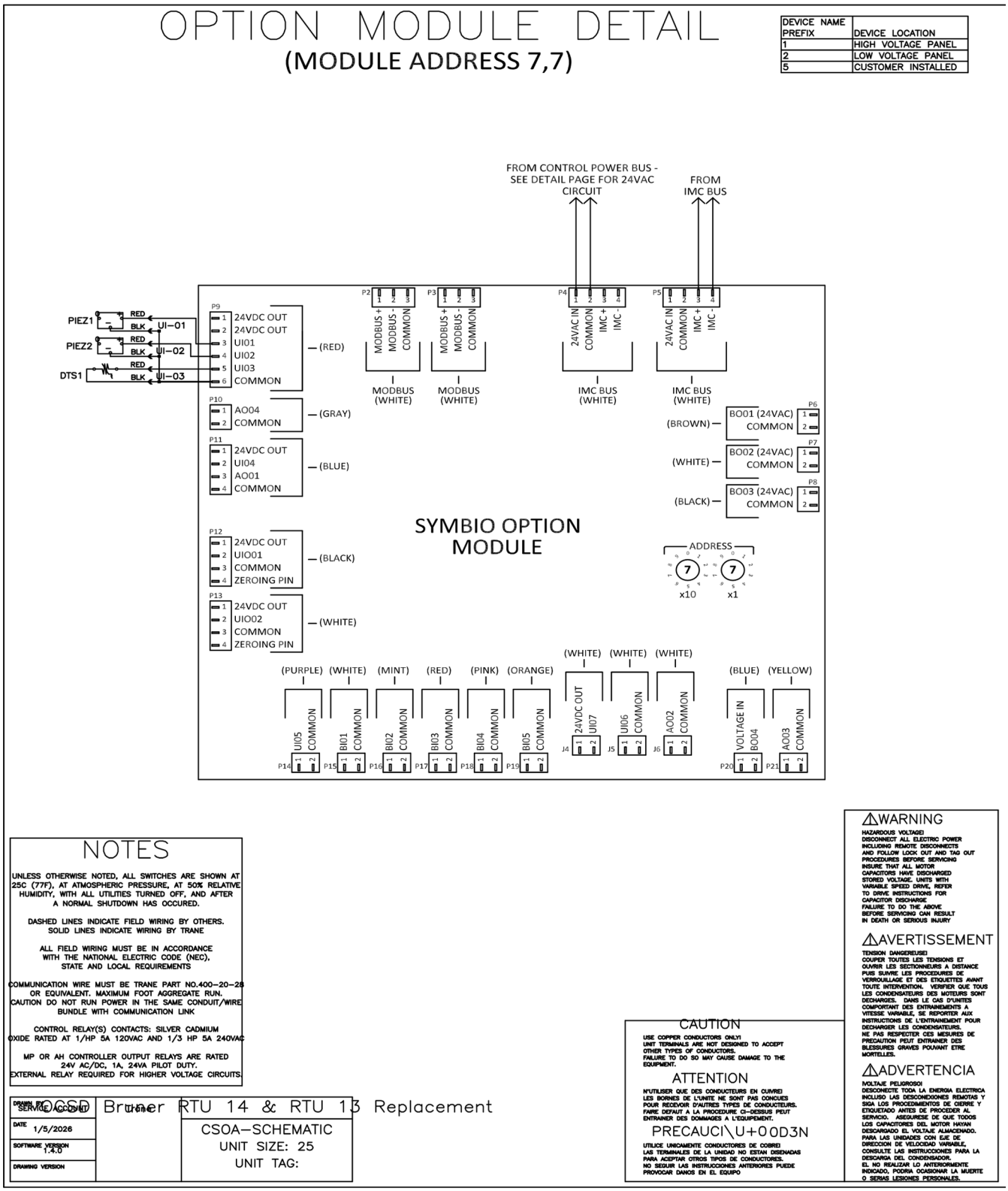
Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



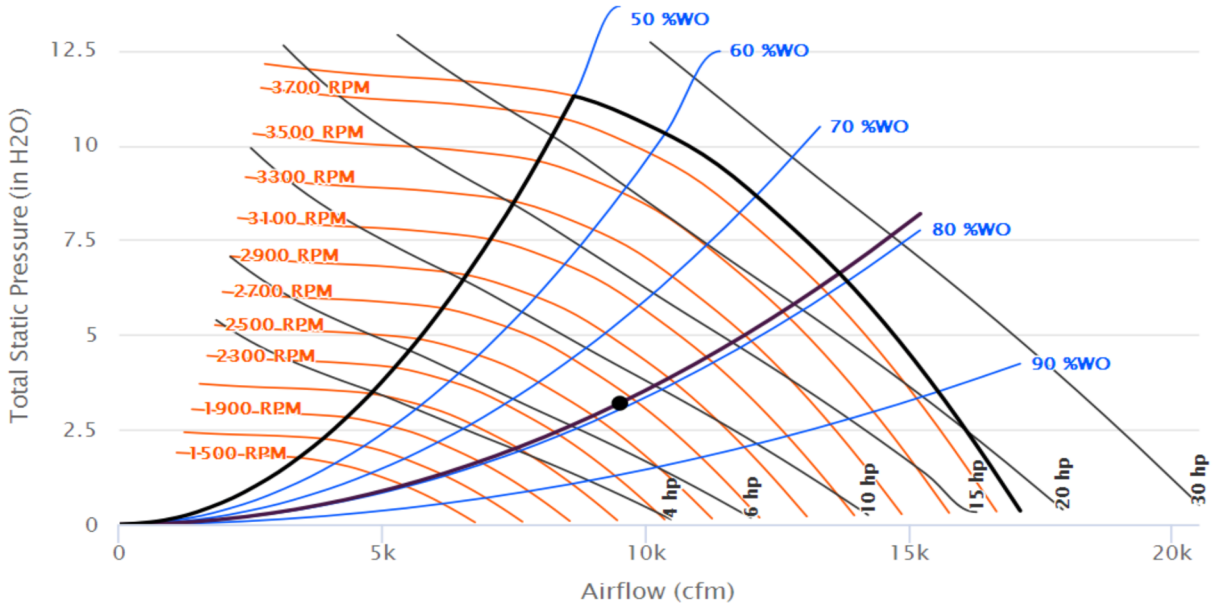
Controls Wiring Diagrams - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



Fan Curve - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Fan Details

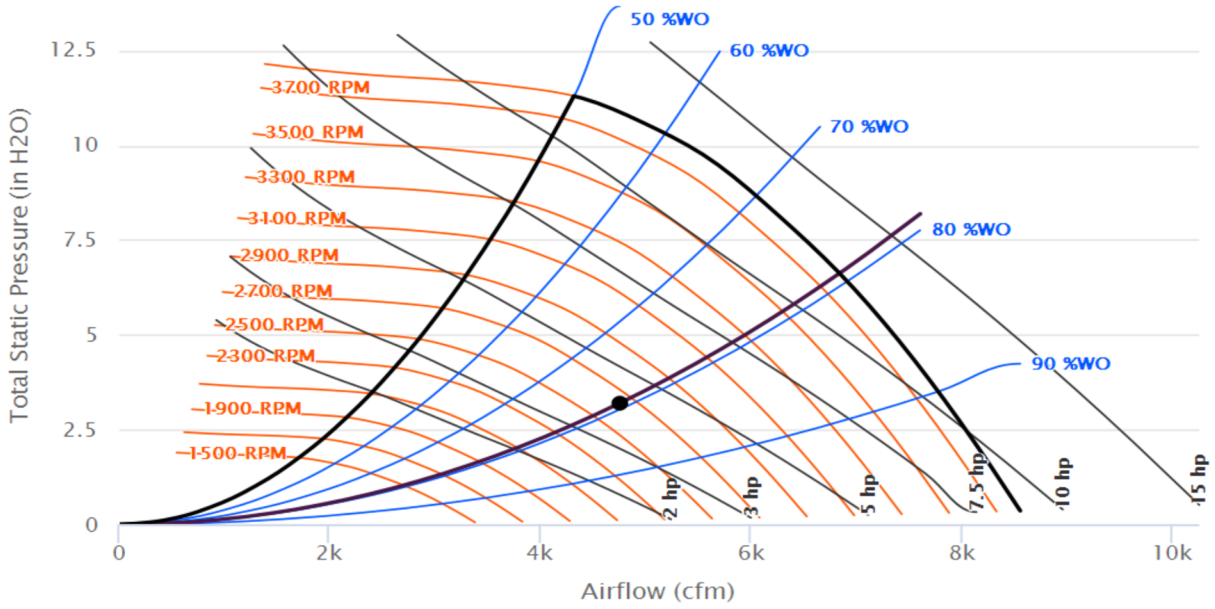
Unit Size	16UF	**Operating Brake Power**	8.172 hp
Motor Frequency	89.00 Hz	**Altitude**	0.00 ft
Operating Airflow	9,500 cfm	**Design Temp.**	70.00 F
Operating Static Pressure	3.200 in H2O	**Efficiency**	58.64 %
Operating RPM	2,639 rpm		



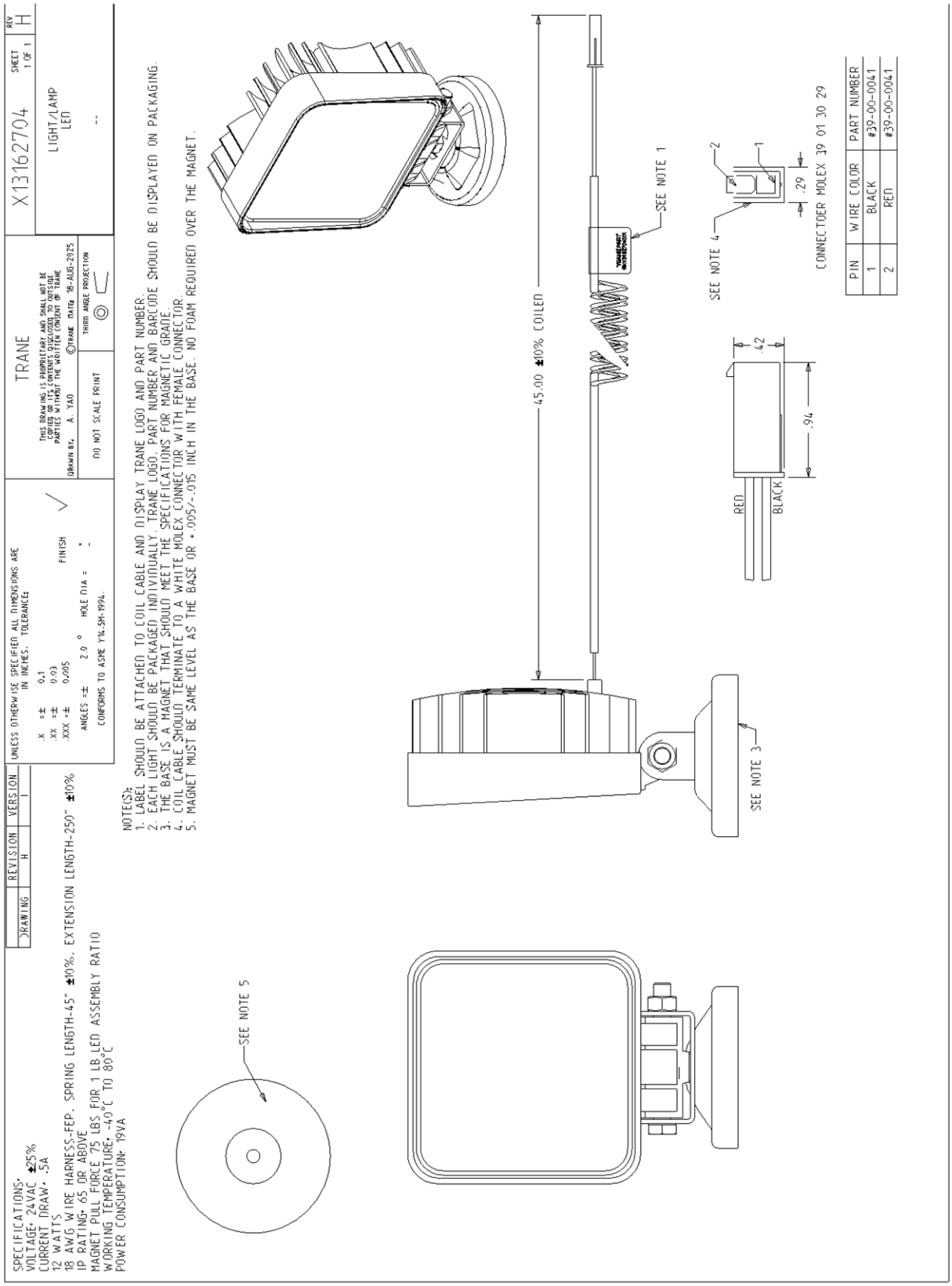
Fan Curve - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Fan Details

Unit Size	16UF	**Operating Brake Power**	4.086 hp
Motor Frequency	89.00 Hz	**Altitude**	0.00 ft
Operating Airflow	4,750 cfm	**Design Temp.**	70.00 F
Operating Static Pressure	3.200 in H2O	**Efficiency**	58.64 %
Operating RPM	2,639 rpm		

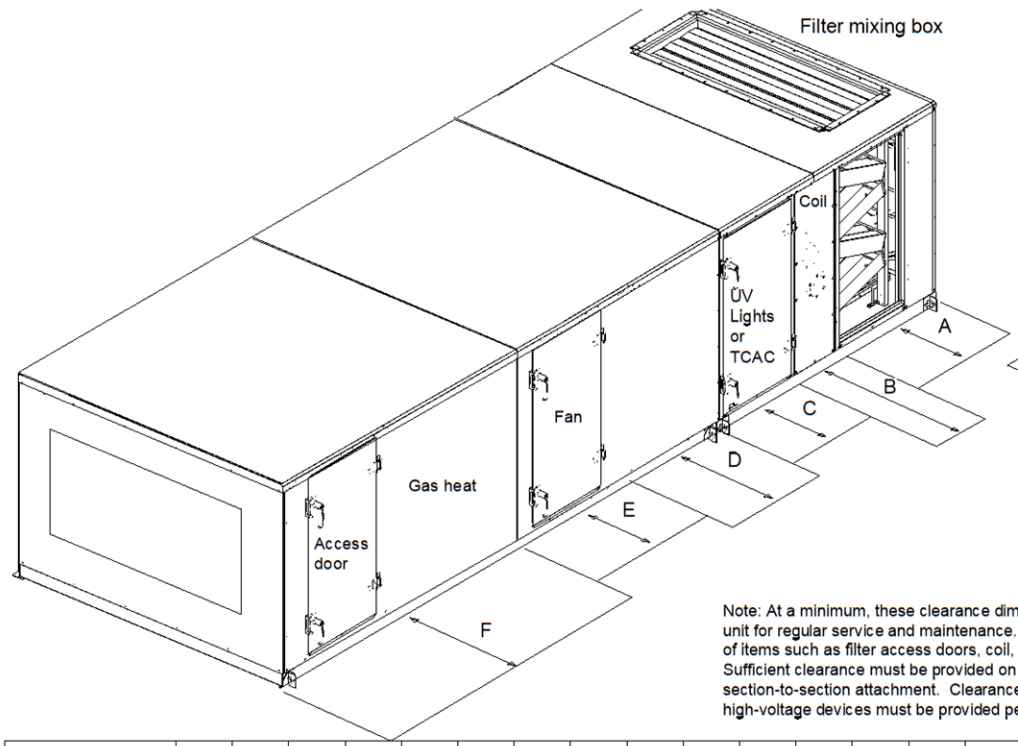


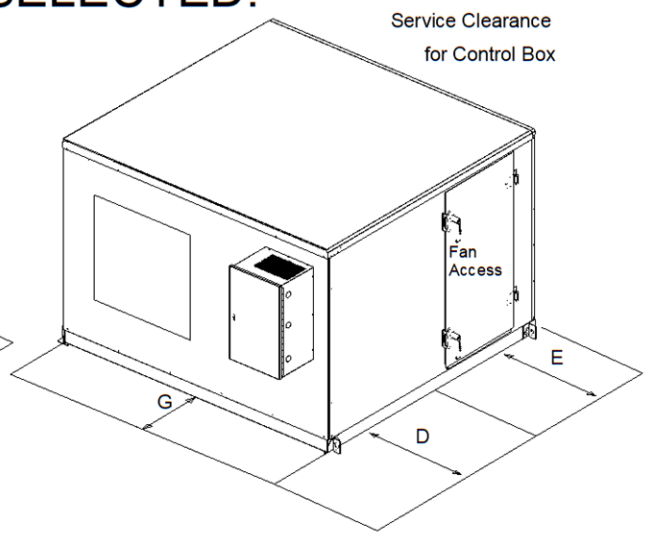
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

EXAMPLE UNIT - NOT CONFIGURED AS SELECTED.



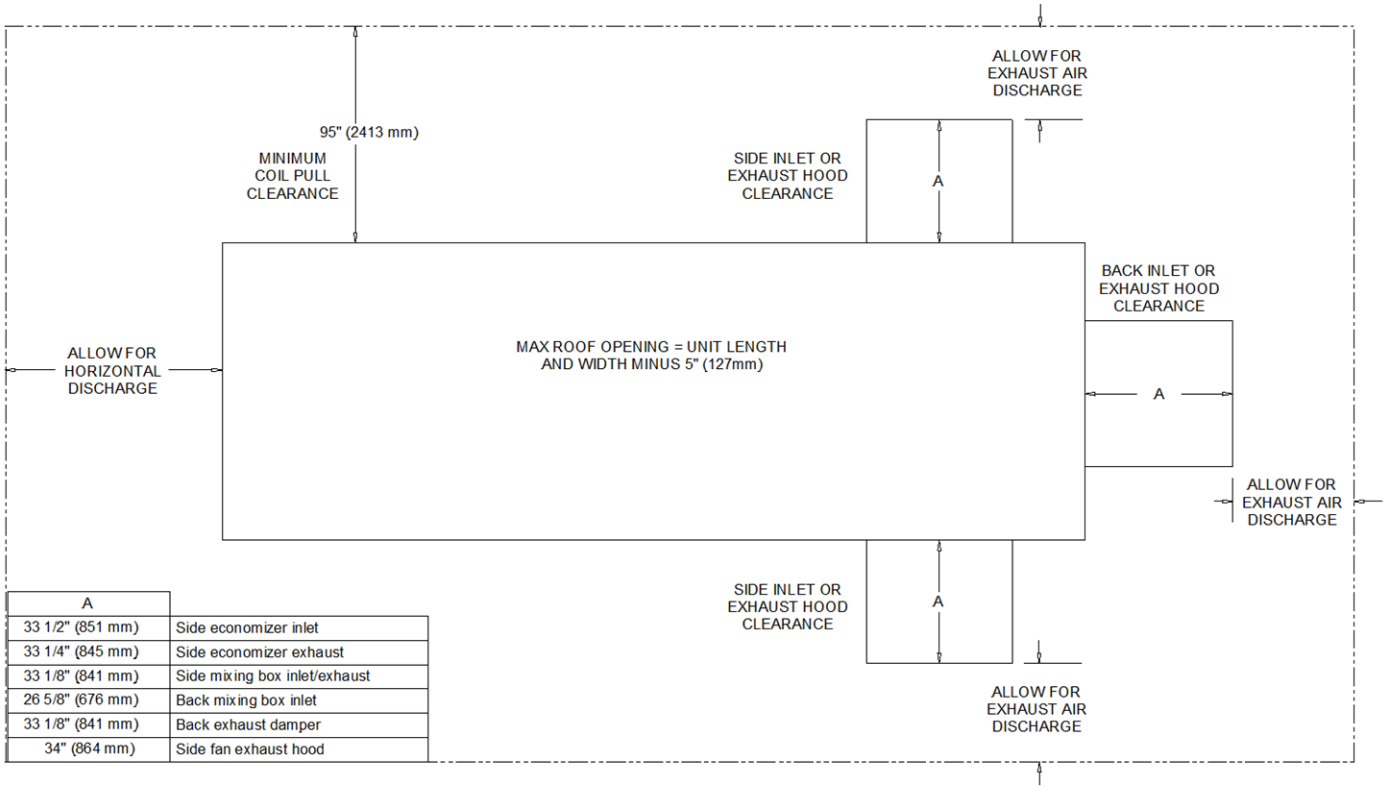


Note: At a minimum, these clearance dimensions are recommended on one side of the unit for regular service and maintenance. Refer to as-built submittal for locations of items such as filter access doors, coil, piping connections, motor locations, etc. Sufficient clearance must be provided on all sides 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	3	4	6	8	10	12	14	17	21	25	30	35	40	50	57	66	80	100	120
A (filter)	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	95	109	115	128	141	141	156	156	170	197
B (staggered coil)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	67	76	80	88	96	96	105	105	113	129
C (UV Lights)	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	58	83	75	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
D (Internal Starter or VFD)	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	66	66	66	70	77	77	93	93	101	101
F (Gas Heat Ext Vestible)	N/A	N/A	89	90	108	100	100	105	115	115	118	136	140	156	156	170	179	180	N/A
F (Gas Heat Int Vestible)	N/A	N/A	56	63	74	79	84	84	92	92	106	112	125	138	138	153	153	167	194

Component	All Sizes
G (Side mount LV box)	36
G (Front mount LV box)	13

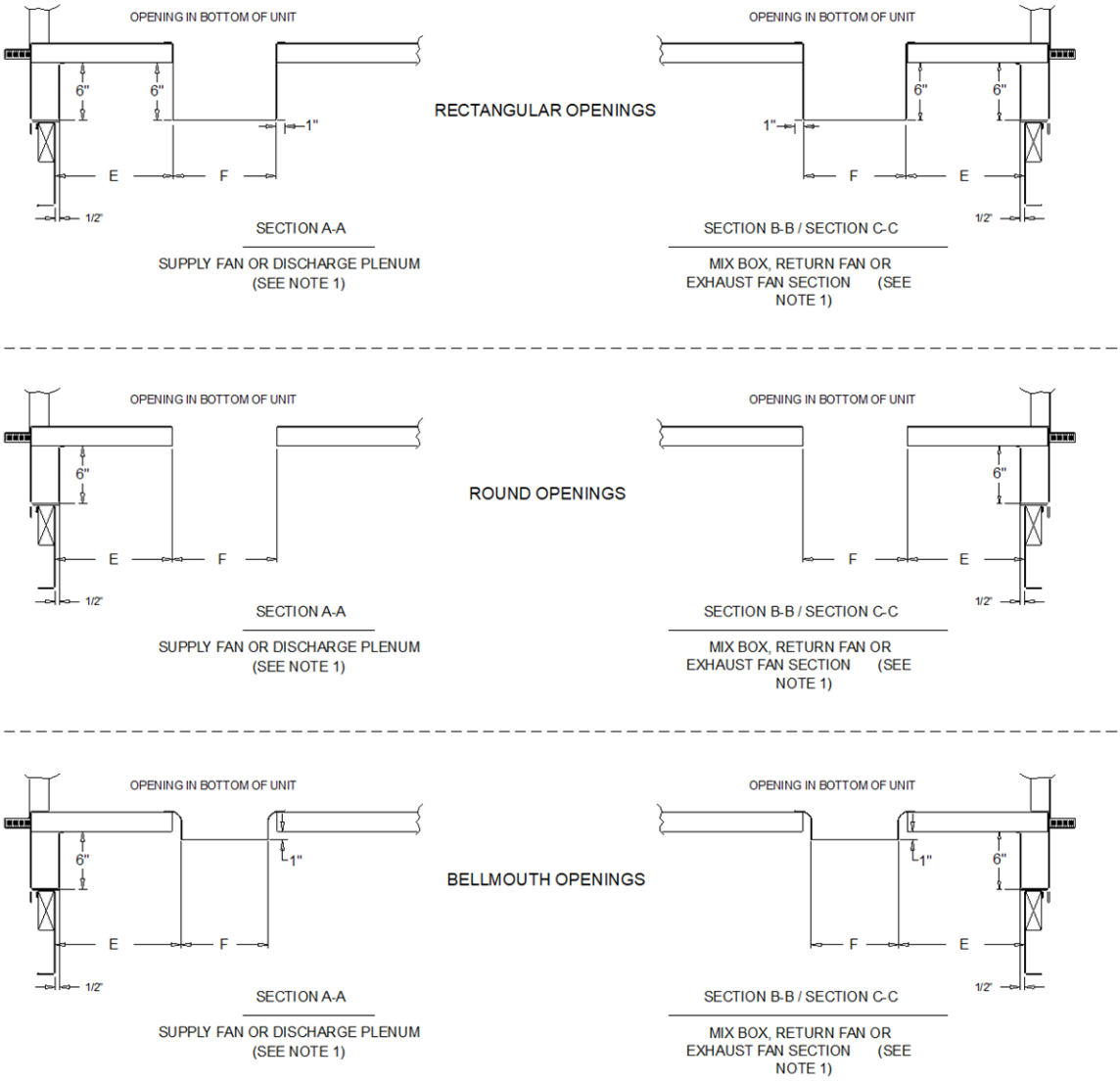
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



A	
33 1/2" (851 mm)	Side economizer inlet
33 1/4" (845 mm)	Side economizer exhaust
33 1/8" (841 mm)	Side mixing box inlet/exhaust
26 5/8" (676 mm)	Back mixing box inlet
33 1/8" (841 mm)	Back exhaust damper
34" (864 mm)	Side fan exhaust hood

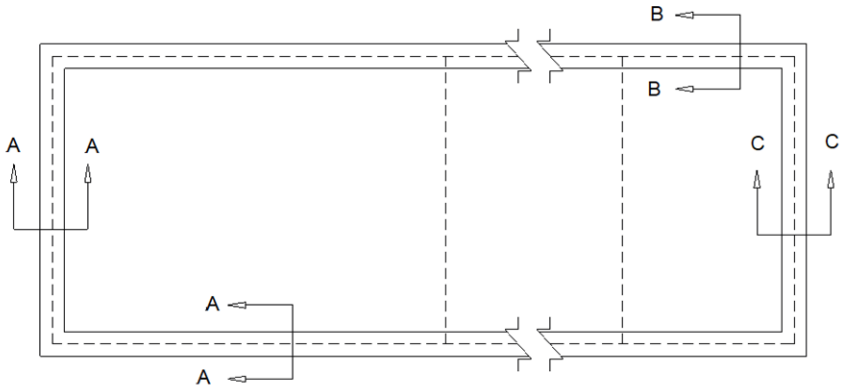
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

RELATIONSHIP OF CURB TO UNIT AS-BUILT



NOTE:

1. E and F are representative of dimensions on the accessory as-built used to locate opening(s) in the roof surface.



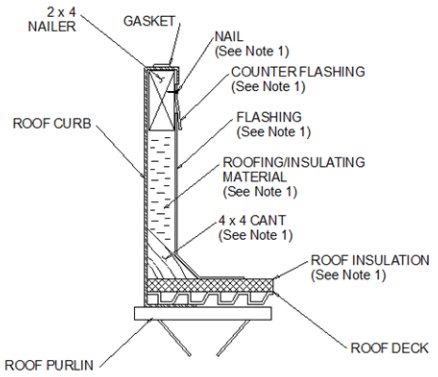
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

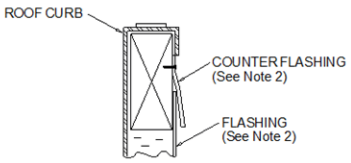
Base Detail

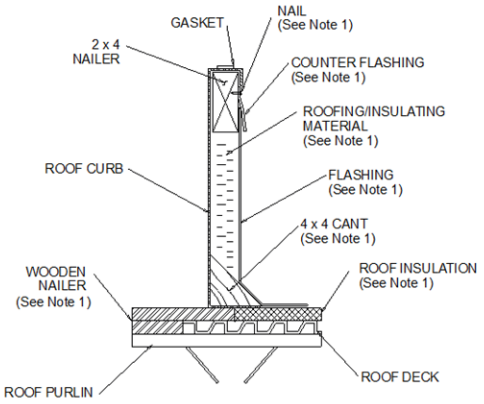
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Recommendation for Roof Curb Installation

Refer to Performance IOM for specific installation instructions





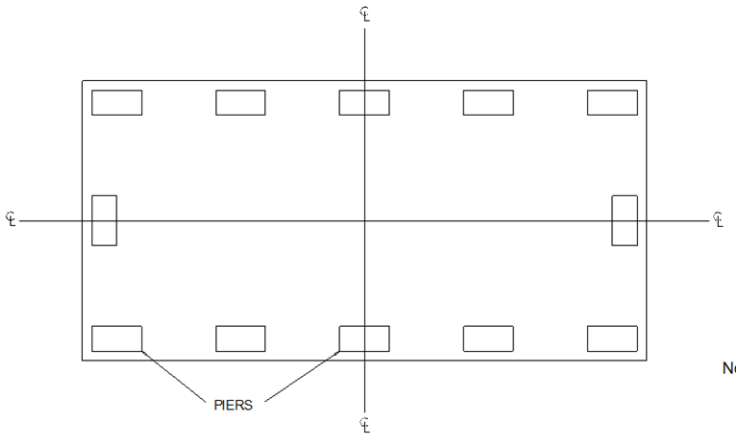


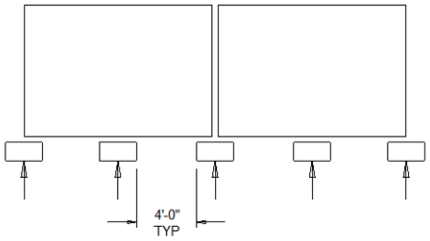
Note:

1. Materials to attach roof curb to roof are to be supplied by the installer.
2. Flashing or counter flashing should not come to or over top of curb.
3. Roof curb must be mechanically fastened to roof surface.

Recommendation for Pier Mounting

Refer to Performance IOM for specific installation instructions





Note:

1. Pier supports should be inside 3" (3 - 50) or 4" (57 - 120) flat of unit base. Unit cannot be supported by unit base drip leg.
2. Piers beneath shipping splits must be structurally sound to support the weight of the unit.

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Thermal Sensor

Resistance Temperature Characteristics			
Temperature	Resistance		Temp Coeff
	Min.	Max.	
-40°C	320.9K	369.0K	-6.61 % / °C
-25°C	125.6K	142.3K	-6.04% / °C
0°C	31.17K	34.6K	-5.16 % / °C
25°C	9.56K	10.44K	-4.40 % / °C
65°C	2.012K	2.158K	-3.5 % / °C

Specifications:
Probe to be permanently identified with the Trane part number, vendor part number and date code or lot code.

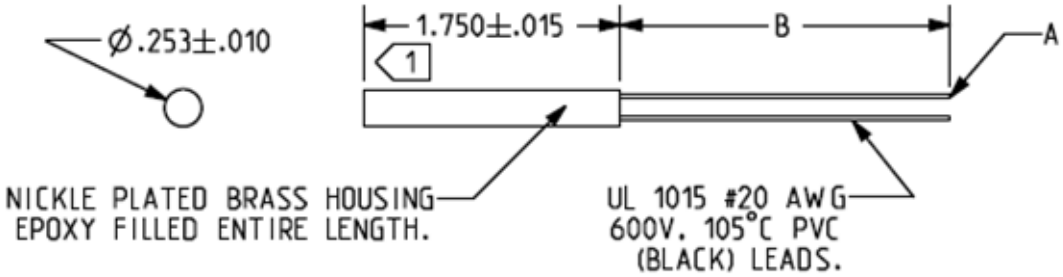
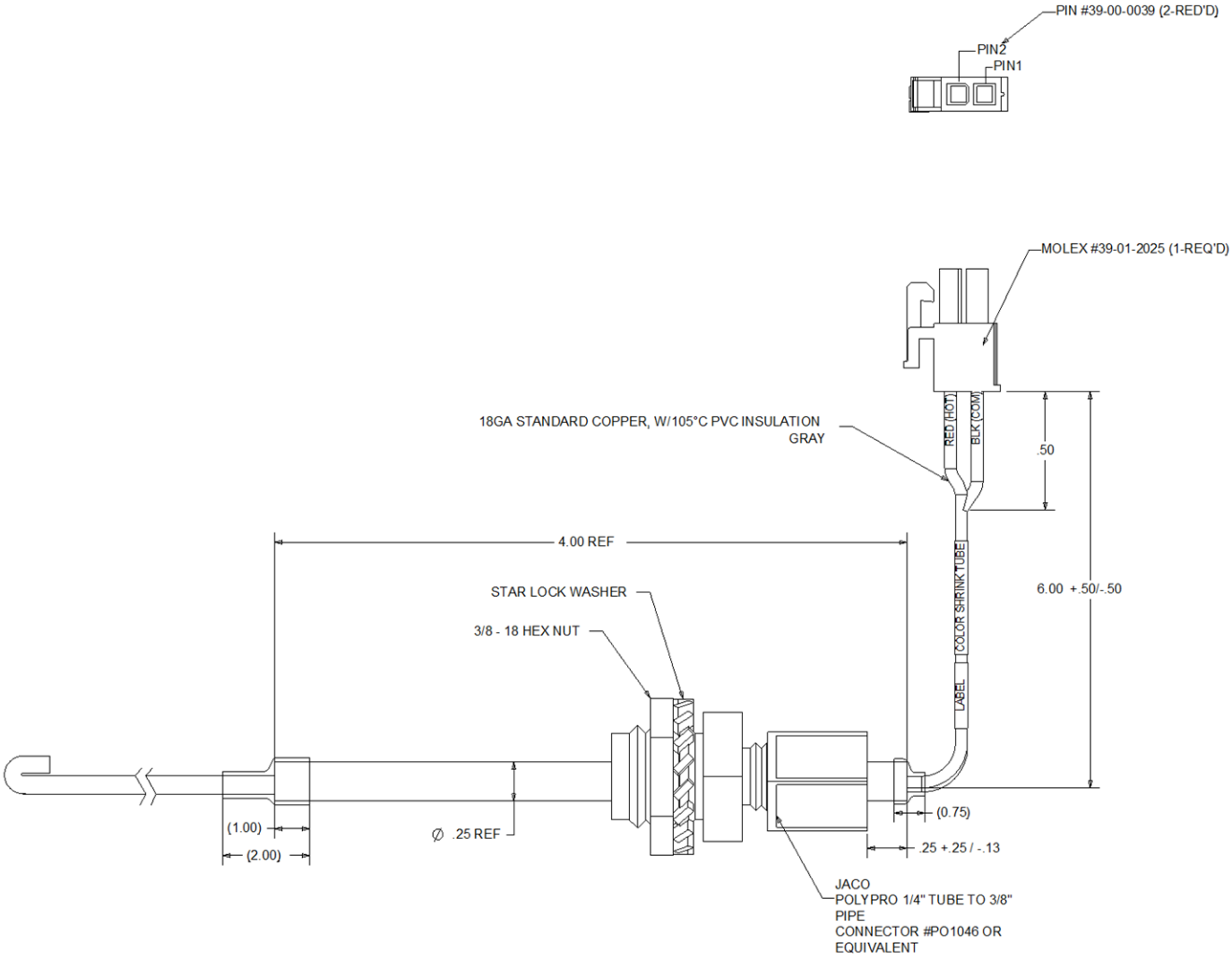


FIGURE 1

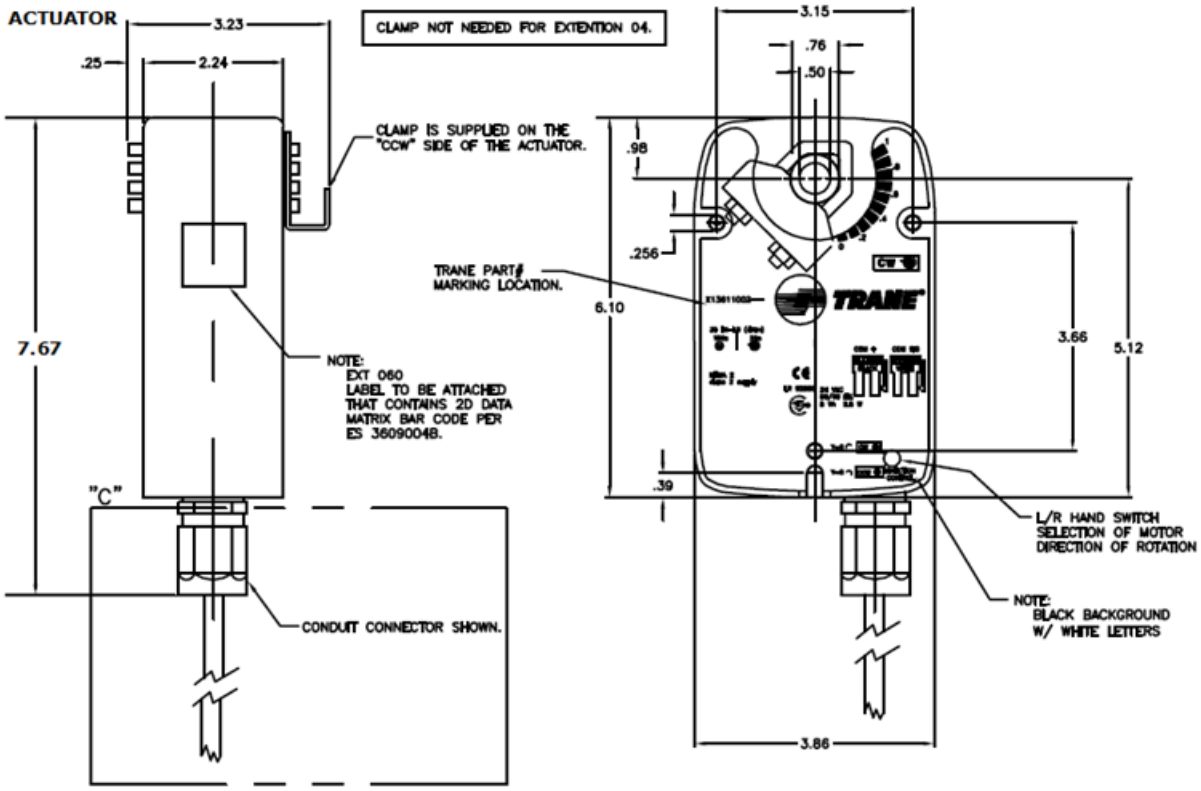
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

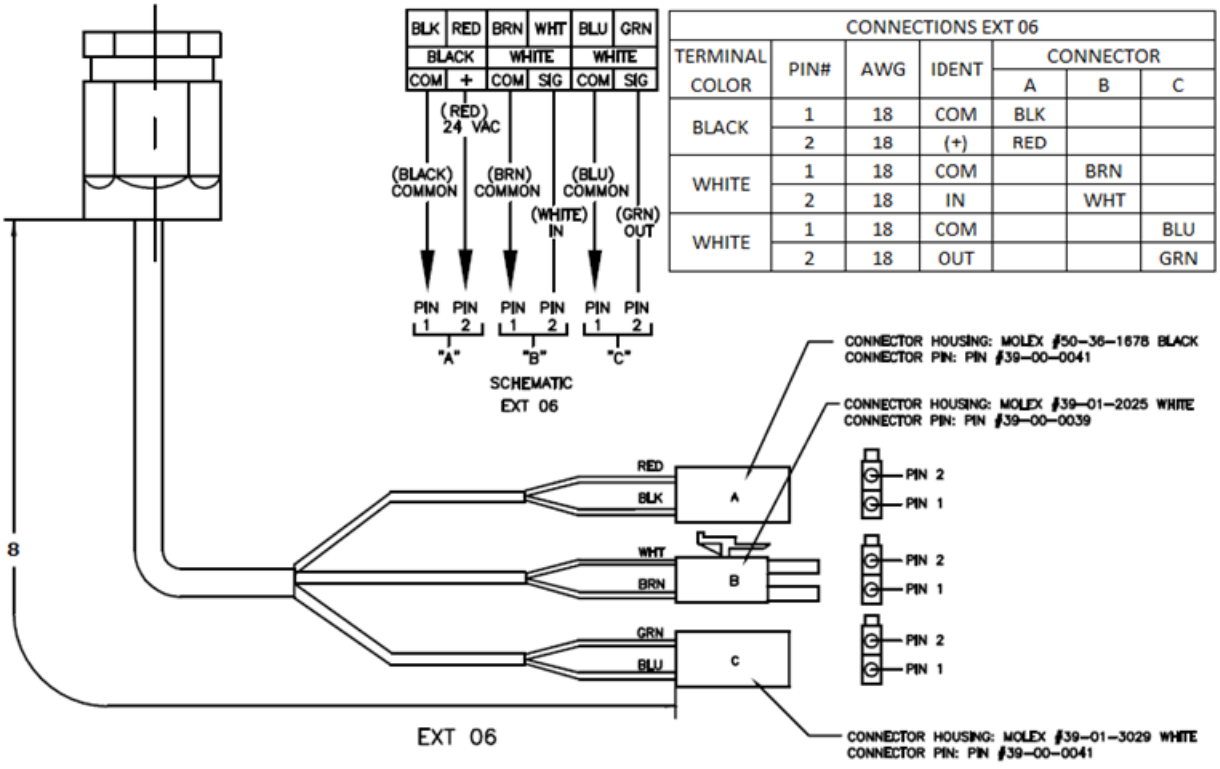
Averaging Temperature Sensor

SENSOR ELEMENT	SENSOR RATING	TCR	SHRINK TUBE COLOR
THERMISTOR	10,000 Ω TYPE II	3892°K NOMINAL	YELLOW



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

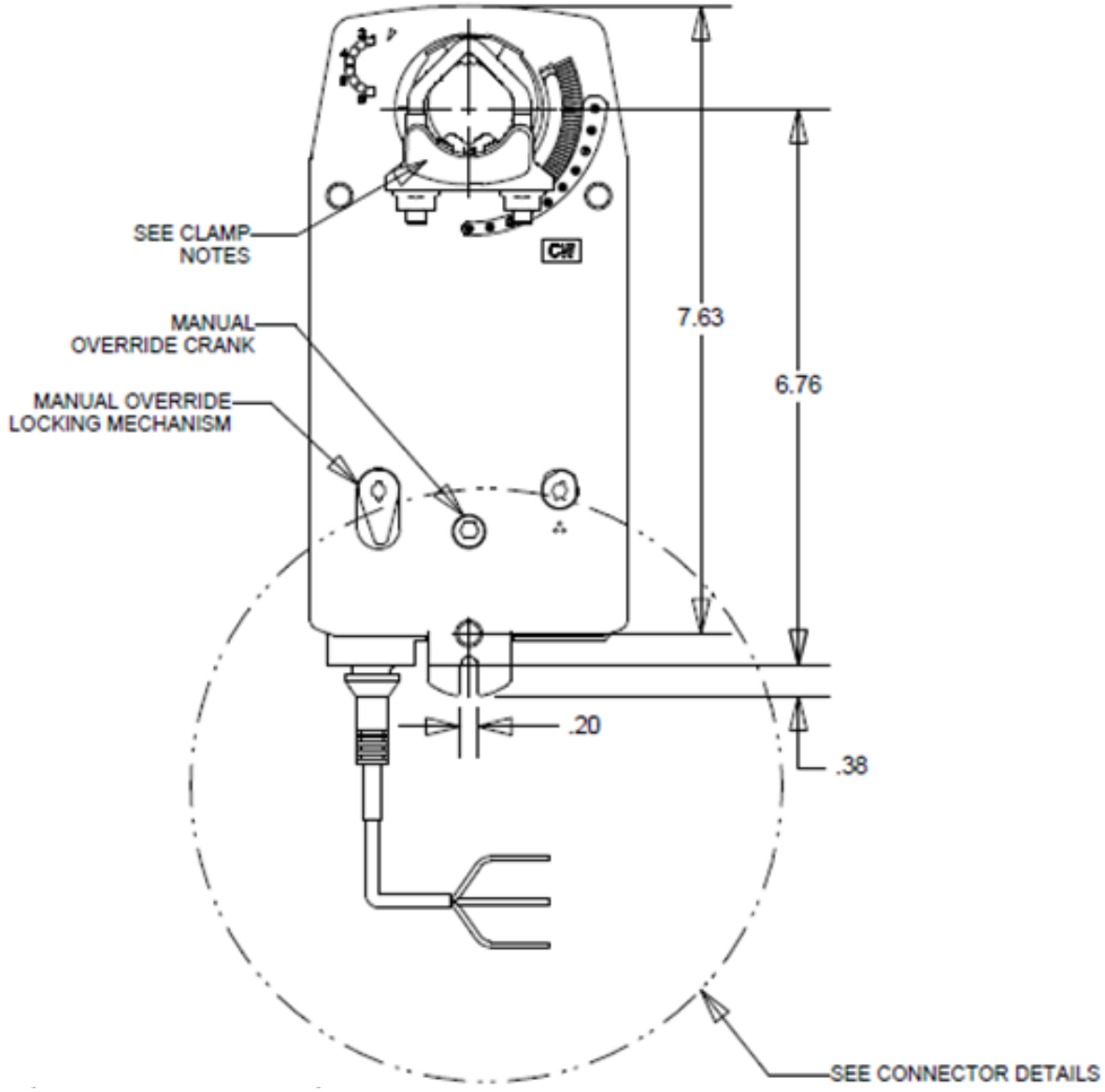




CONNECTIONS EXT 06						
TERMINAL COLOR	PIN#	AWG	IDENT	CONNECTOR A	CONNECTOR B	CONNECTOR C
BLACK	1	18	COM	BLK		
	2	18	(+)	RED		
WHITE	1	18	COM		BRN	
	2	18	IN		WHT	
WHITE	1	18	COM			BLU
	2	18	OUT			GRN

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Actuator



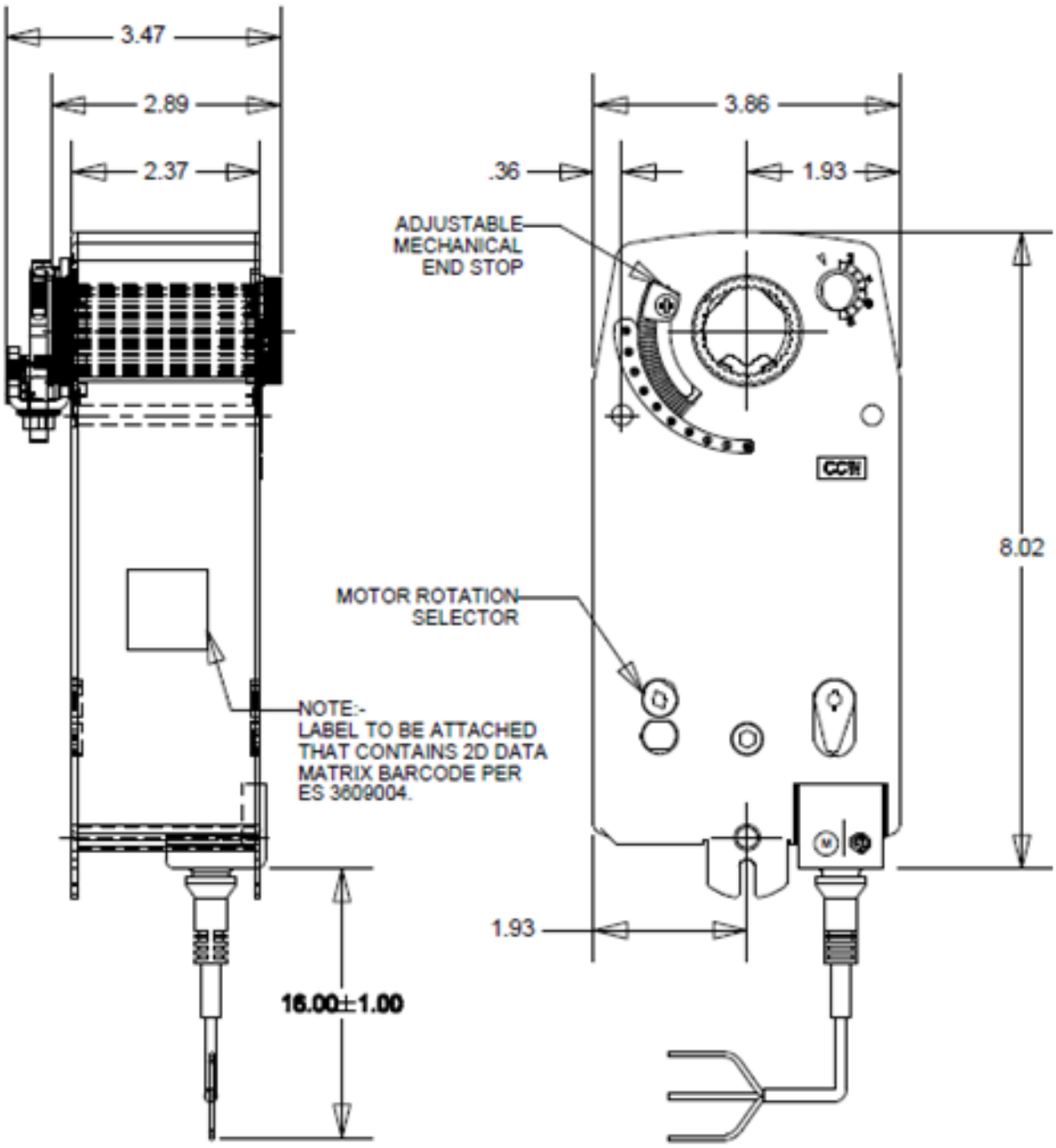
EXT 04

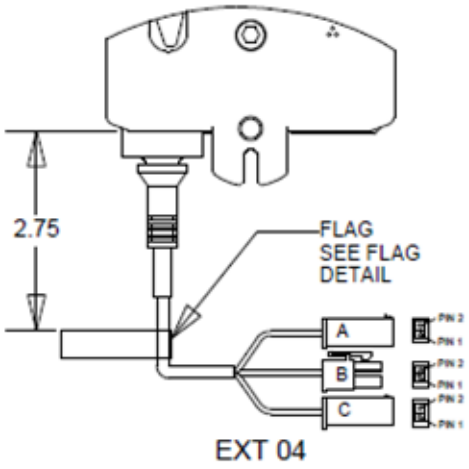
COLOR	PIN#	AWG	TYPE	A	B	C
BLACK	1	18	COM	BLK		
	2	18	HOT	RED		
WHITE	1	18	COM		PNK	
	2	18	IN		WHT	
WHITE	1	18	COM			GRY
	2	18	OUT			ORG

CONNECTOR 'A'
MOLEX#: 50-36-1678
PIN#: 39-00-0041

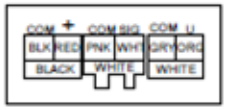
CONNECTOR 'B'
MOLEX#: 39-01-2025
PIN#: 39-00-0039

CONNECTOR 'C'
MOLEX#: 39-01-3029
PIN#: 39-00-0041

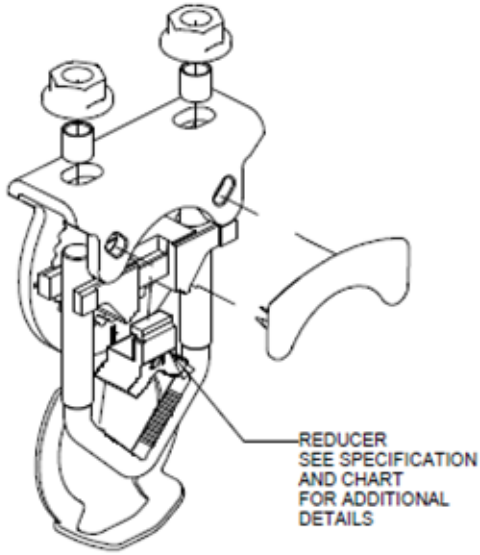




EXT 04



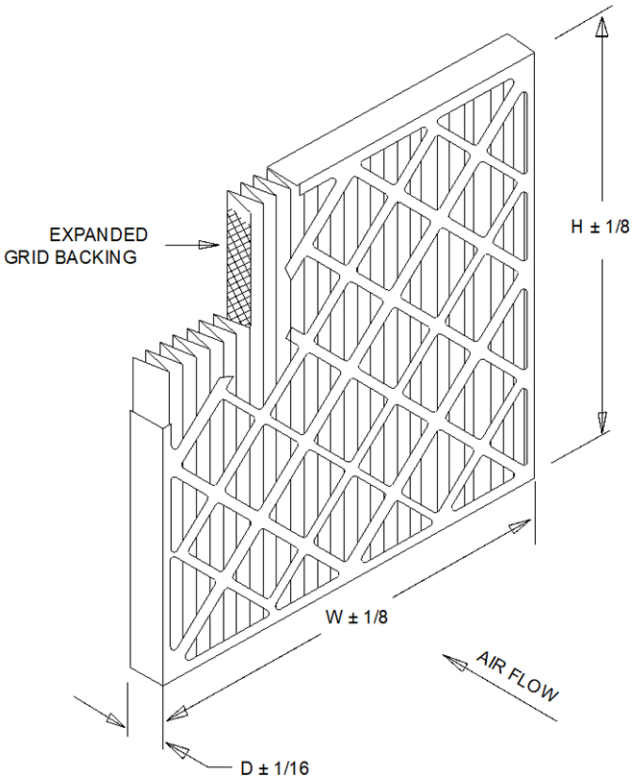
FLAG DETAIL



CLAMP DETAIL

ONE CLAMP IS USED PER ACTUATOR.

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



STANDARD CONSTRUCTION
1. 100 % Synthetic White Un-Dyed Media
2. 10.0 Pleats Per Foot
3. Expanded Metal Pleat Supports
4. Moisture Resistant Beverage Board Frame
5. Double Wall Frame

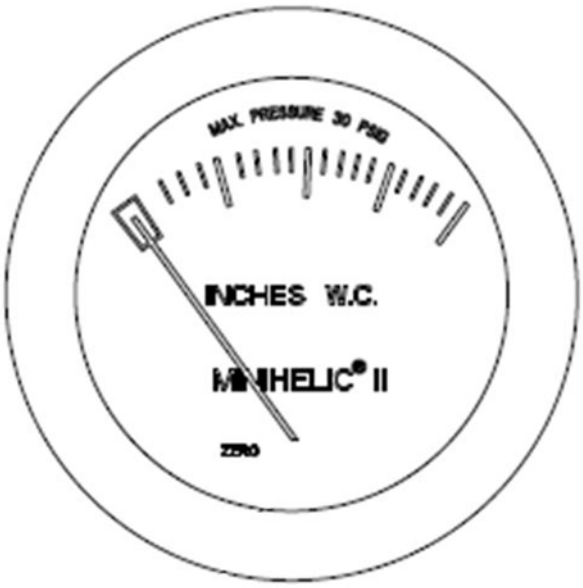
NOTES
1. MERV 8-A Per ASHRAE 52.2-2007 Appendix J.
2. Final Resistance: 1/0" W.G.
3. Rated Velocity: 500 FPM
4. Class 2 Filter Per U.L. Standard 900
5. Maximum Operating Temperature: 225 DEG. F

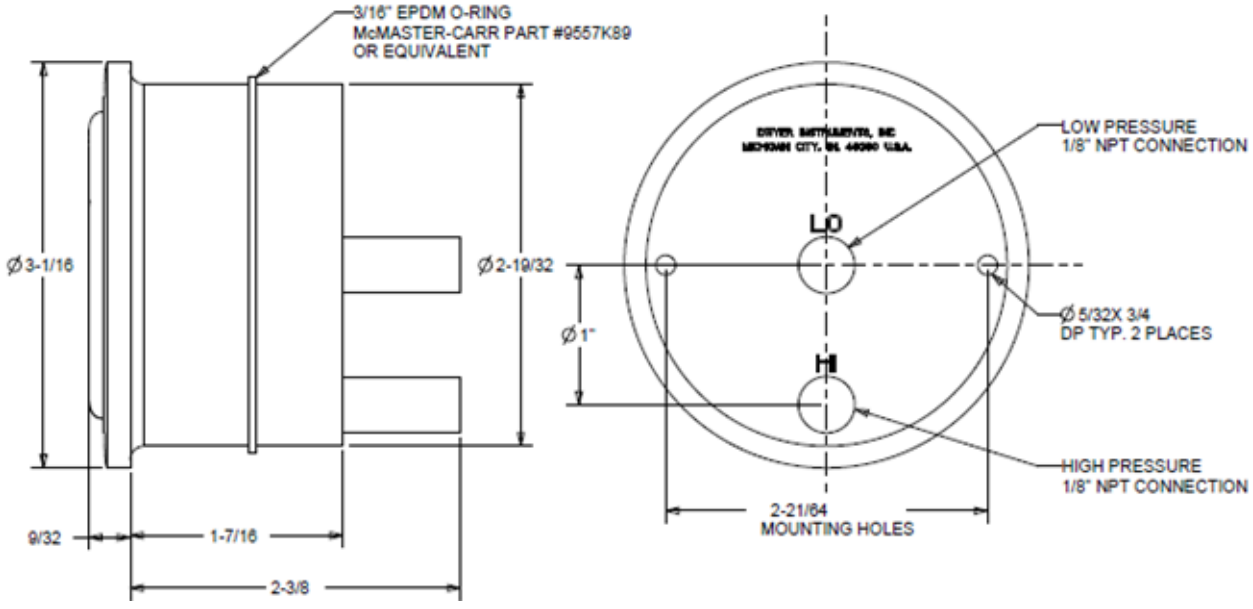
MODEL NUMBER	NOMINAL SIZE IN. W X H X D	ACTUAL SIZE IN. W X H X D	RATED AIR FLOW CFM	INITIAL RESISTANCE IN. W.G.	MEDIA AREA SQ. FT.
MX40-STD2-217	10 X 20 X 2	9-1/2 X 19-1/2 X 1-3/4	700	0.29	4.7
MX40-STD2-220	12 X 20 X 2	11-1/2 X 19-1/2 X 1-3/4	840	0.29	5.5
MX40-STD2-210	12 X 24 X 2	11-3/8 X 23-3/8 X 1-3/4	1000	0.29	6.2
MX40-STD2-239	14 X 20 X 2	13-1/2 X 19-1/2 X 1-3/4	980	0.29	5.7
MX40-2TD2-241	14 X 25 X 2	13-1/2 X 24-1/2 X 1-3/4	1220	0.29	7.1
MX40-STD2-245	15 X 20 X 2	14-1/2 X 19-1/2 X 1-3/4	1050	0.29	6.2
MX40-STD2-201	16 X 20 X 2	15-1/2 X 19-1/2 X 1-3/4	1120	0.29	6.7
MX40-STD2-216	16 X 24 X 2	15-3/8 X 23-3/8 X 1-3/4	1340	0.29	8.0
MX40-STD2-202	16 X 24 X 2	15-1/2 X 24-1/2 X 1-3/4	1400	0.29	8.0
MX40-STD2-280	15 X 20 X 2	17-1/2 X 19-1/2 X 1-3/4	1250	0.29	7.8
MX40-STD2-212	18 X 24 X 2	17-3/8 X 23-3/8 X 1-3/4	1500	0.29	9.3
MX40-STD2-285	18 X 25 X 2	17-1/2 X 24-1/2 X 1-3/4	1570	0.29	9.7
MX40-STD2-203	20 X 20 X 2	19-1/2 X 19-1/2 X 1-3/4	1400	0.29	8.3
MX40-STD2-211	20 X 24 X 2	19-3/8 X 23-3/8 X 1-3/4	1670	0.29	9.9
MX40-STD2-204	20 X 25 X 2	19-1/2 X 24-1/2 X 1-3/4	1750	0.29	10.3
MX40-STD2-205	24 X 24 X 2	23-3/8 X 23-3/8 X 1-3/4	2000	0.29	11.7
MX40-STD2-225	25 X 25 X 2	24-1/2 X 24-1/2 X 1-3/4	2170	0.29	13.6

Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Dirty Filter Status

EXT	MODEL	RANGE
01	2-5002-NPT	0-2" WC
03	2-5003-NPT	0-3" WC
04	2-5005-NPT	0-5" WC



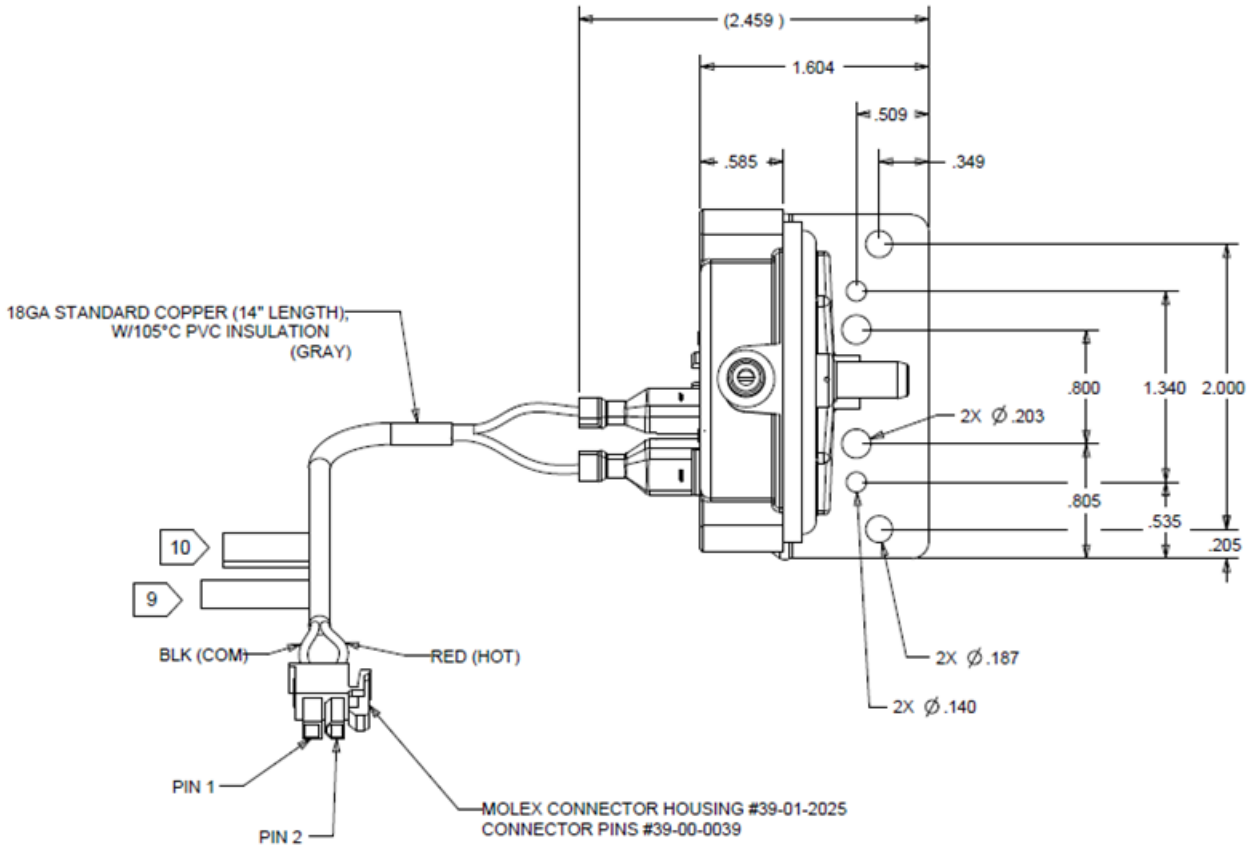


Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

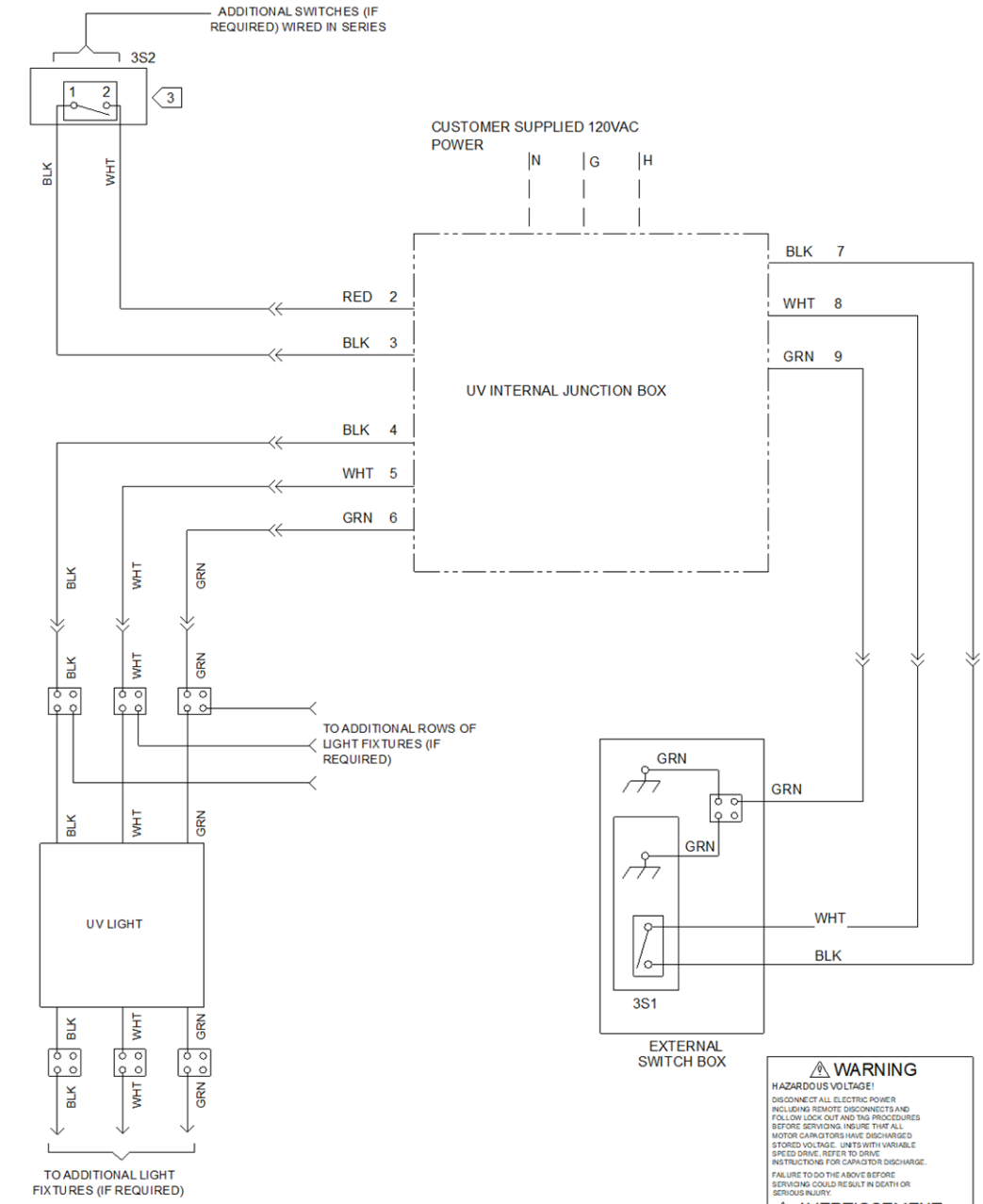
EA Pressure Differential Switch

Specifications:

1. Body: Glass Filler Polyester.
2. Diaphragm: Post-Cured Silicon Rubber.
3. Terminals: 0.032” X 0.250” Copper Alloy.
4. Contacts: Silver Alloy, Beryllium Copper.
5. Actuator: Stainless Steel.
6. Springs: Stainless Steel, Phosphor Bronze.
7. Operating Temperature: -40°C to 85°C (-40°F to 185°F).
8. Mounting: Mount With The Diaphragm.
   Perpendicular to Level



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



LEGEND	
DEVICE DESIGNATION	DESCRIPTION
3S1	MAIN EXTERNAL UV LIGHT SWITCH
3S2	DOOR KILL SWITCH FOR UV LIGHTS

NOTES:

1. DASHED LINES INDICATE RECOMMENDED FIELD WIRING BY OTHERS.
2. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), STATE AND LOCAL REQUIREMENTS. OTHER COUNTRIES APPLICABLE NATIONAL AND/OR LOCAL REQUIREMENTS SHALL APPLY. FIELD CONDUCTORS SHALL HAVE INSULATION INSULATION RATING NOT LESS THAN 600V.
3. SWITCH CLOSES WHEN ACCESS DOORS ARE SHUT.
4. UV LAMPS WILL NEED TO BE INSTALLED IN LAMP FIXTURES BEFORE UNIT START UP.
5. UV LAMPS WILL NOT REMOVE AIRBORNE CONTAMINANTS. LAMPS ARE DESIGENED TO CONTROL MICROBIAL GROWTH ON COIL AND DRAIN PAN SURFACES. DO NOT CYCLE LAMPS OFF AND ON. REPLACE LAMPS ONCE PER YEAR.

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'UNITE 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.

⚠ WARNING

HAZARDOUS VOLTAGE!

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

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

⚠ AVERTISSEMENT

TENSION DANGEREUSE!

COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS À DISTANCE. PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ÉTIQUETTES AVANT TOUTE INTERVENTION. VÉRIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT DÉCHARGÉS. DANS LE CAS D'UNITÉS COMPORTANT DES ENTRAÎNEMENTS À VITESSE 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.

⚠ ADVERTENCIA

¡VOLTAJE PELIGROSO!

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

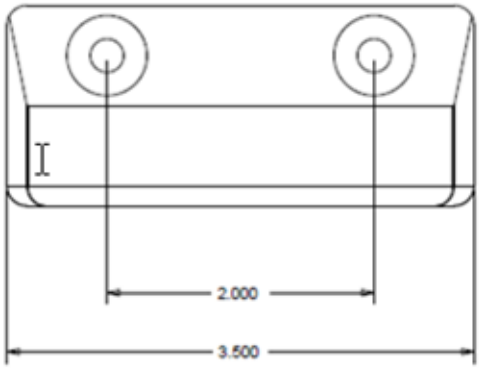
EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODRÍA OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.

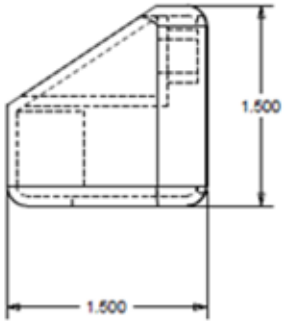
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

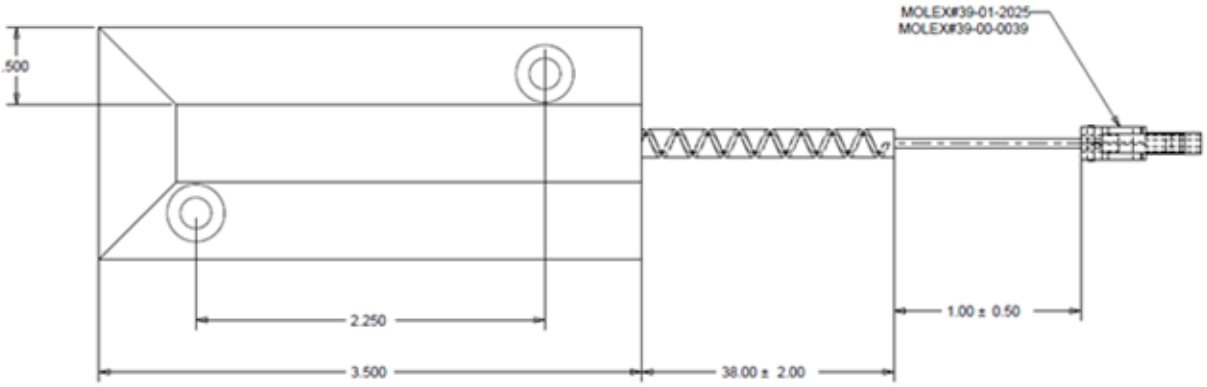
Limit Switch

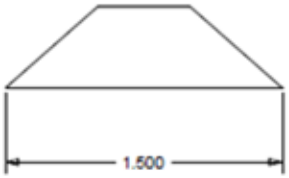
Notes:

1. Parts Must Have Trane Part Number With Bar Code per ES.
2. All Dimensions Are Reference Dimensions Unless Otherwise Noted.
3. Replace 2 Mounting Screws with Pan Head Combination Drive Sheet Metal Screws, 18-8 Stainless Steel, #6 Size ½" Length.





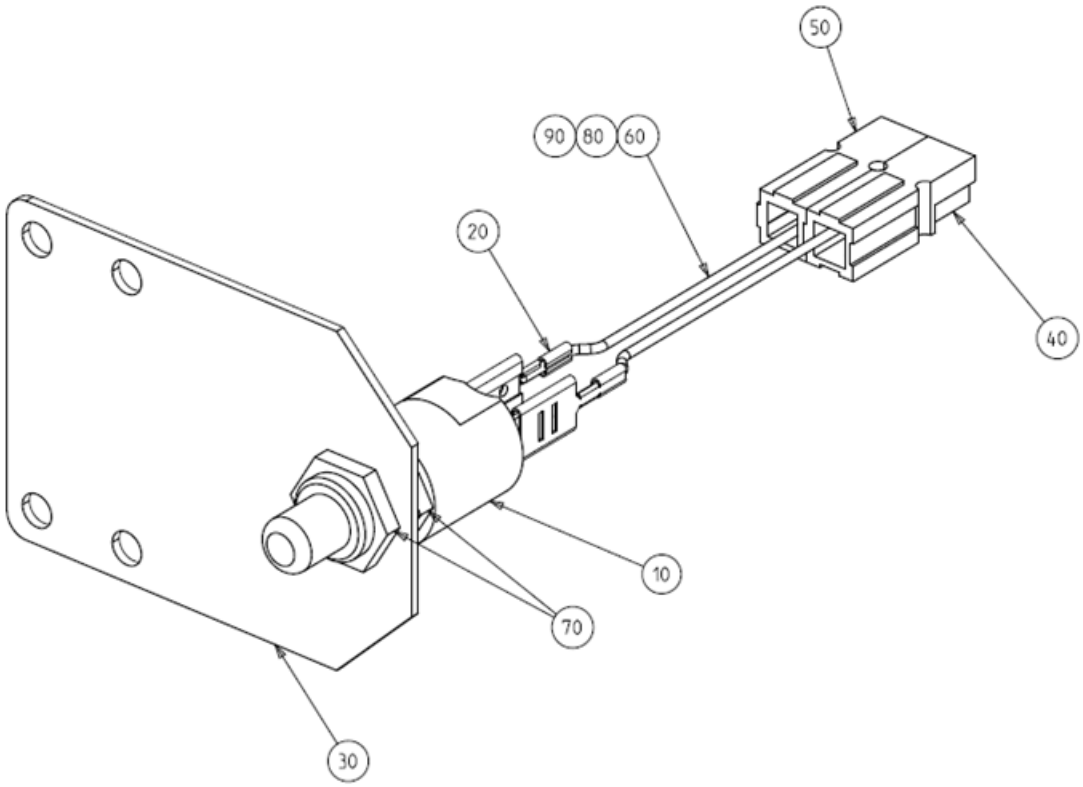




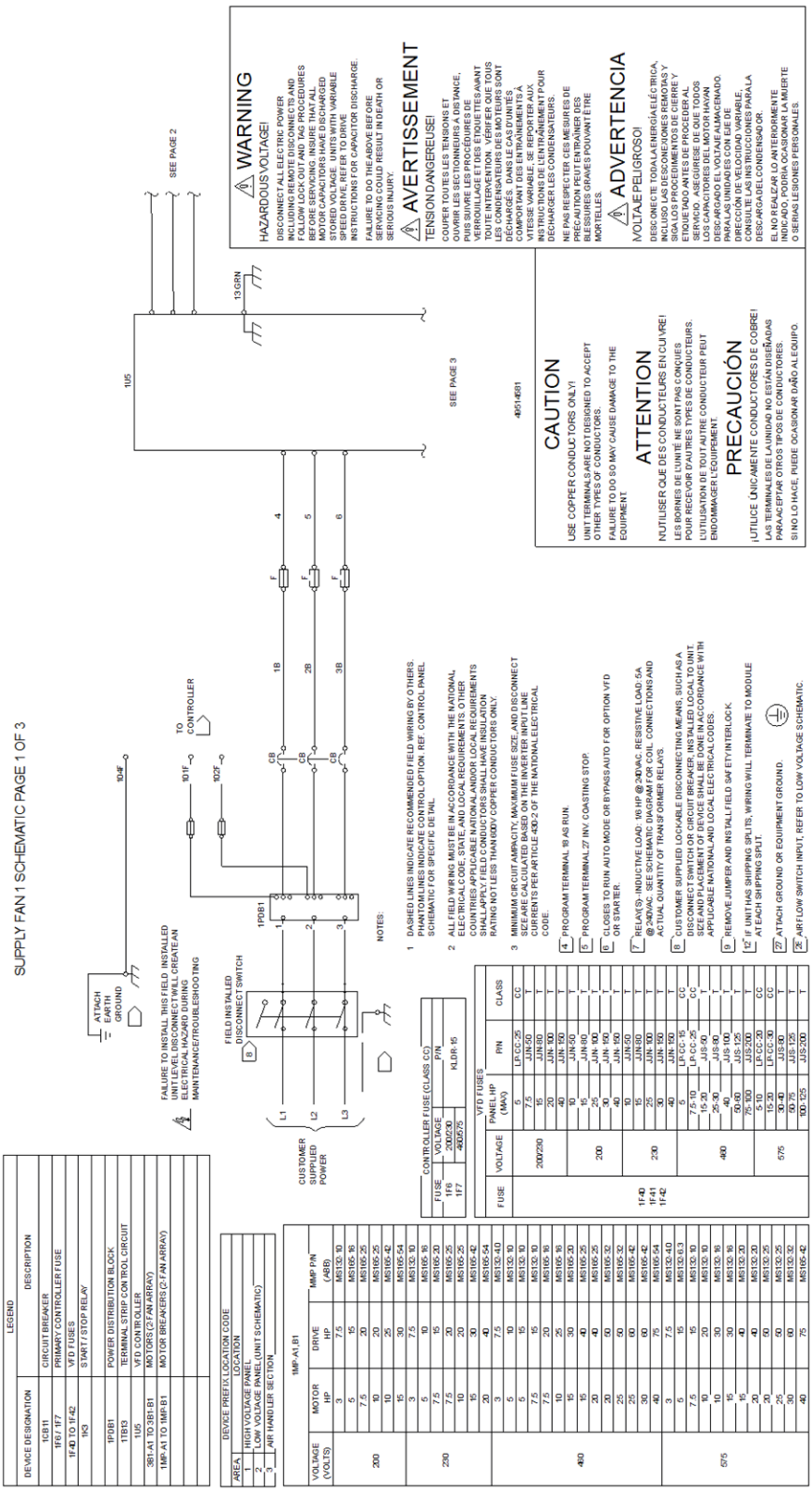
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Limit Switch UV

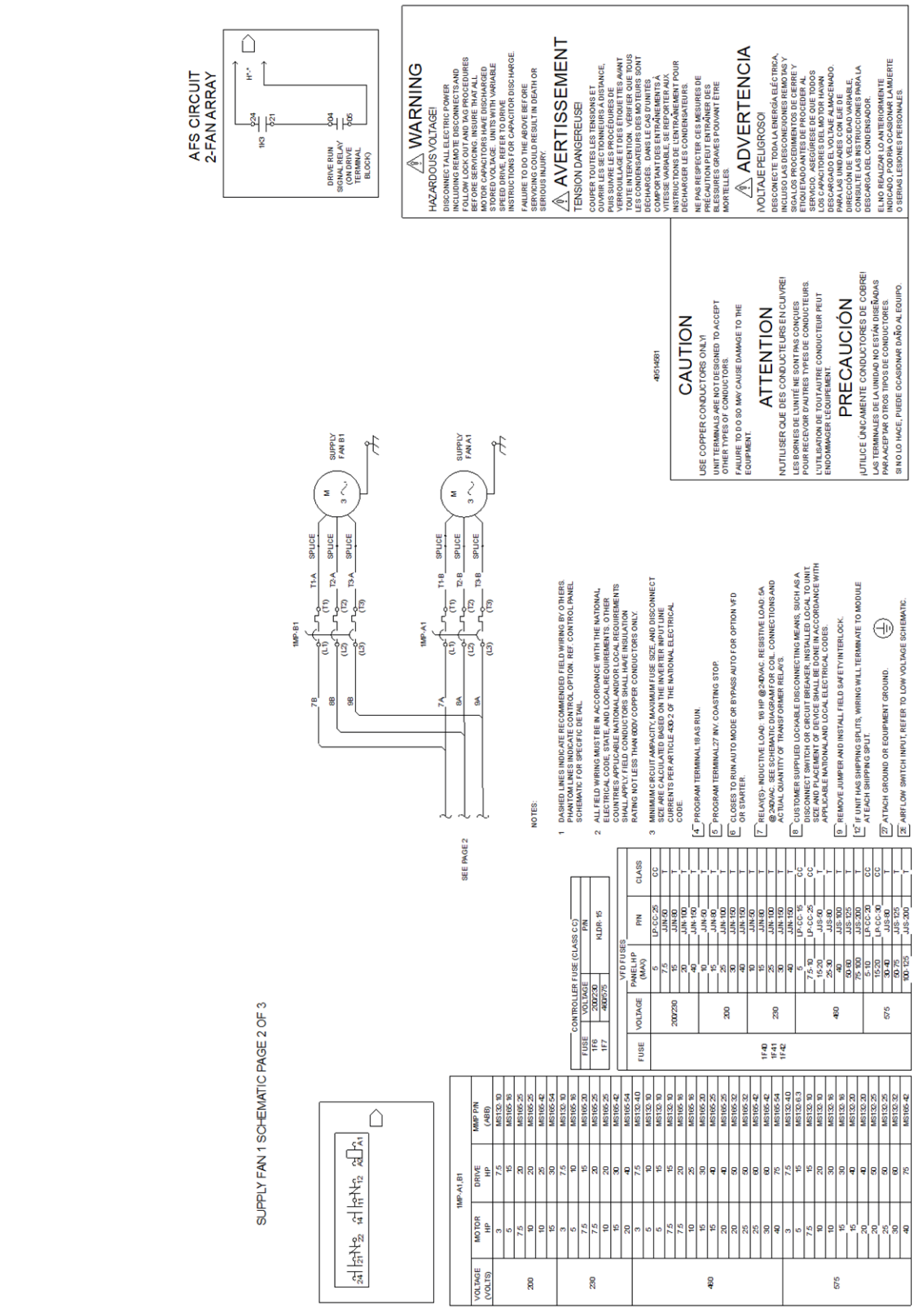
Item	Description	Vendor No. or Equivalent	QTY
10	Momentary Switch. Eaton Metal Button	8418K12	1
20	Female Disconnects (Red) Panduit	DNF18-250FIB-C	2
30	Mounting Bracket 495319590001	16 GA. Galvanized	1
40	Anderson Contact and Connector	1327G6 (Blk)	1
50	Anderson Contact and Connector	1327G7 (Wht)	1
60	18 AWG Wire THHN Blk: Length 2.5"	--	2
70	Nut: 15/32-32; Hexagon. Eaton	15-192	3
80	Heat Shrink Tube: Panduit 3/4": Length 3.5"	HSTTA75-48-5	1
90	Aluminum Tape 2" Wide: Length 4.5"	--	1



Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

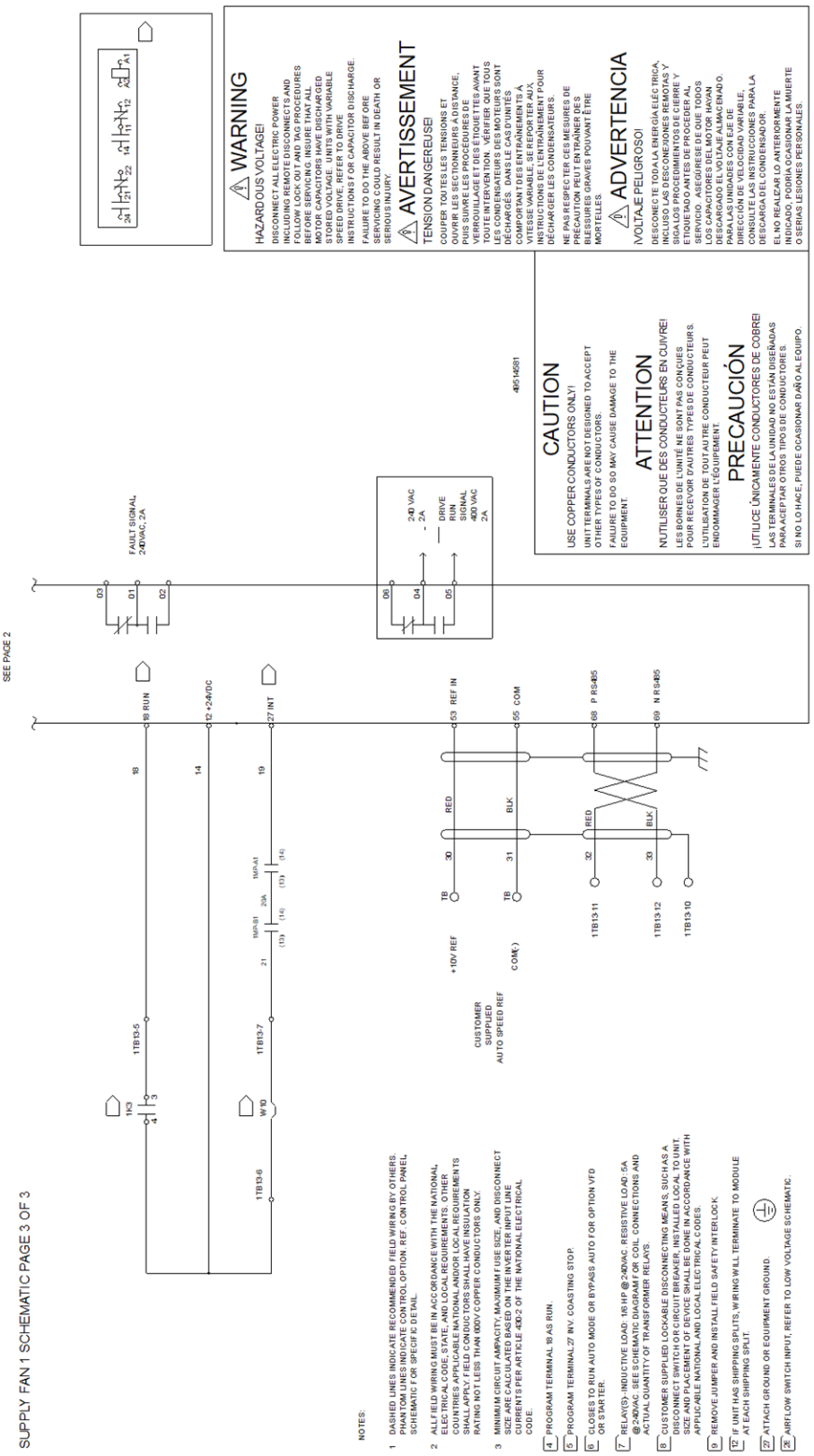


Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



VOLTAGE (VOLTS)	MOTOR HP	1MP-A1,B1 DRIVE HP	MMP P/N (480)
200	3	7.5	MS132-10
	5	15	MS165-16
	7.5	20	MS165-25
	10	25	MS165-25
	15	30	MS165-42
230	3	7.5	MS165-54
	5	10	MS132-10
	7.5	15	MS165-16
	10	20	MS165-25
	15	30	MS165-25
	20	40	MS165-42
460	3	7.5	MS165-54
	5	10	MS132-10
	7.5	15	MS132-10
	10	20	MS165-16
	15	25	MS165-25
	20	30	MS165-25
	25	40	MS165-32
	30	50	MS165-42
	40	60	MS165-54
	50	75	MS165-54
	60	75	MS165-54
	75	100	MS132-40
	100	125	MS132-63
575	5	15	MS132-10
	7.5	15	MS132-10
	10	20	MS132-10
	15	30	MS132-16
	20	40	MS132-20
	25	50	MS132-20
	30	60	MS132-25
	40	75	MS132-32
	50	100	MS165-42
	60	125	MS165-42
	75	150	MS165-54
	100	200	MS165-80

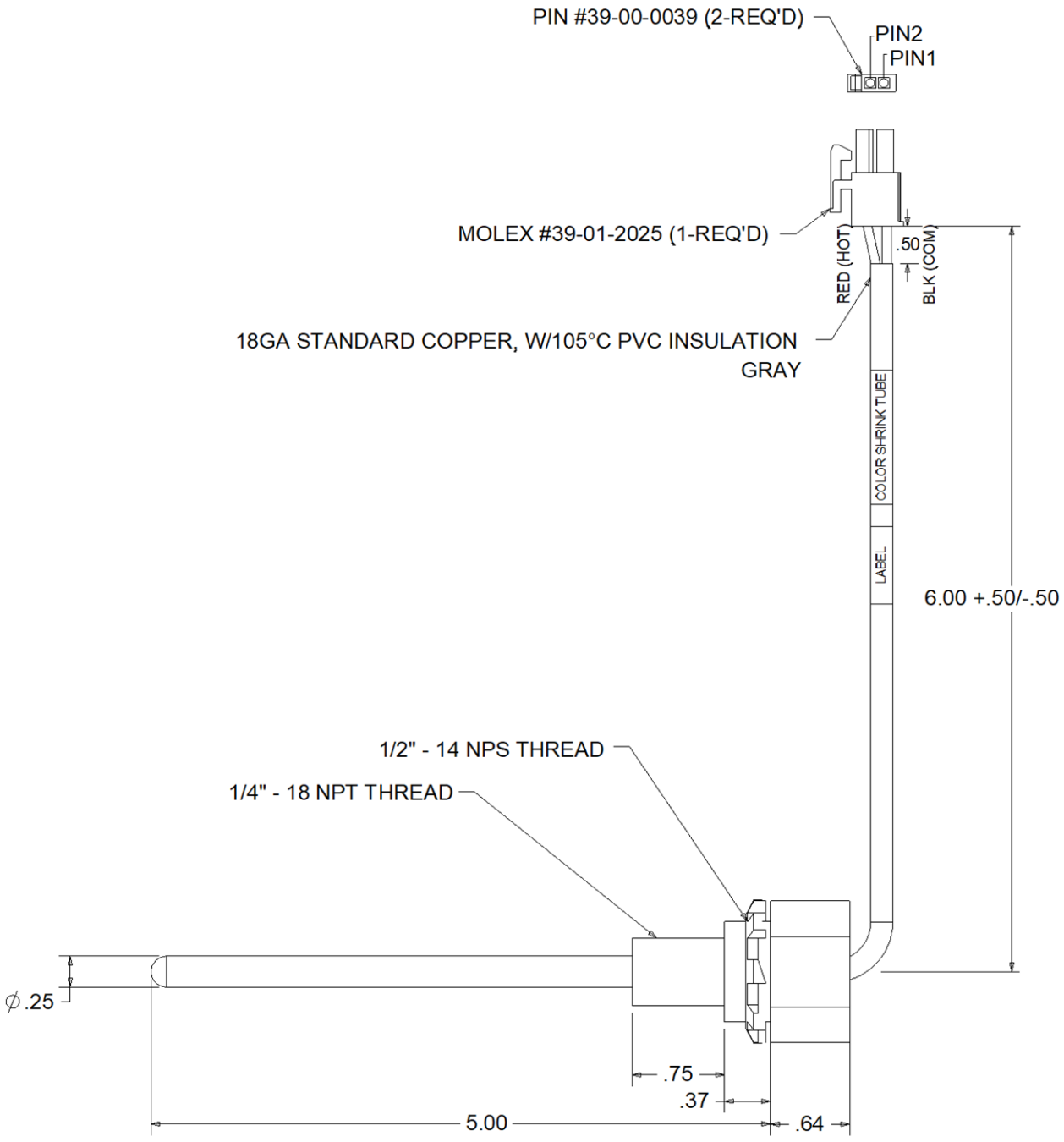
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



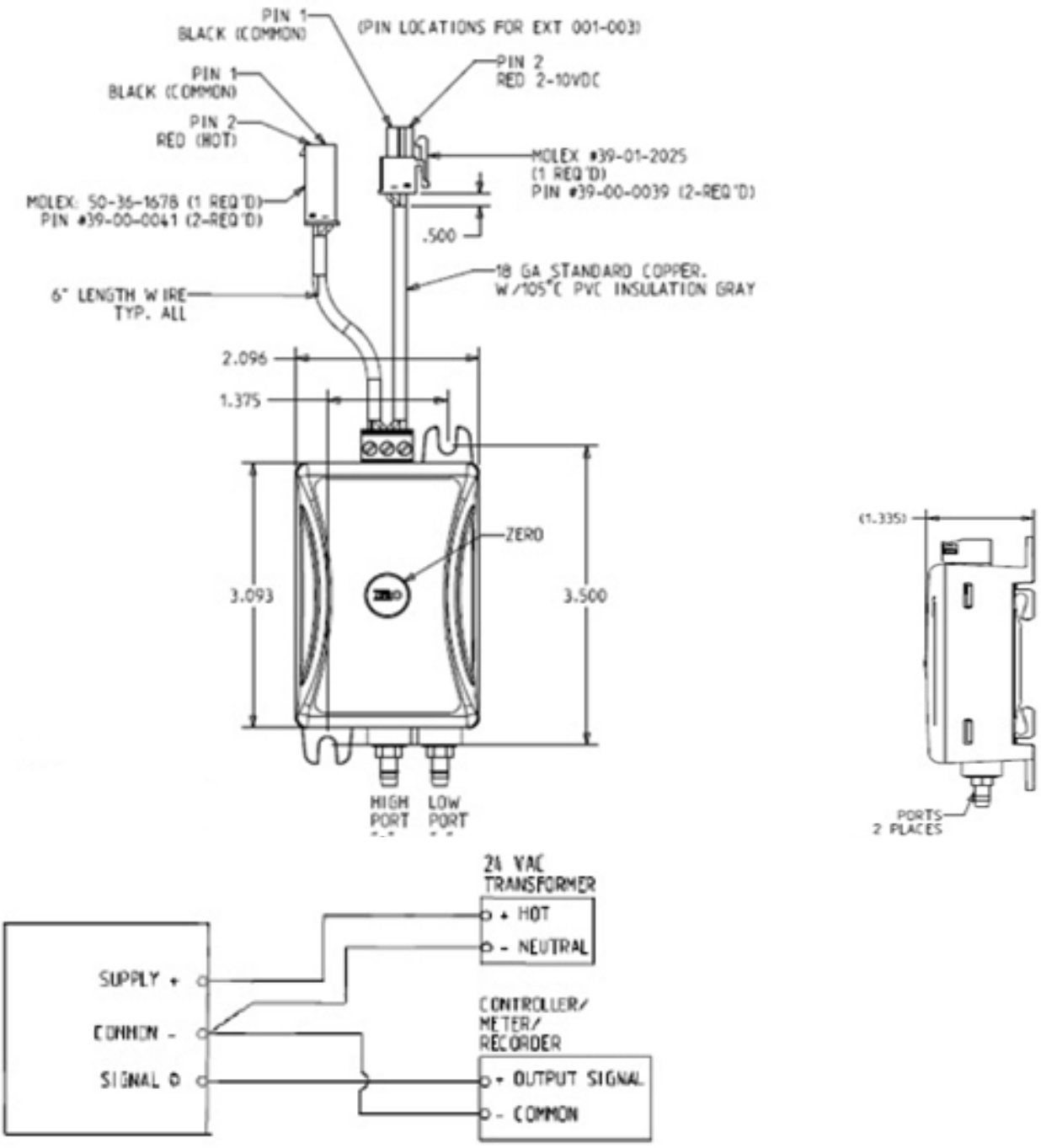
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Discharge Temperature Sensor

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



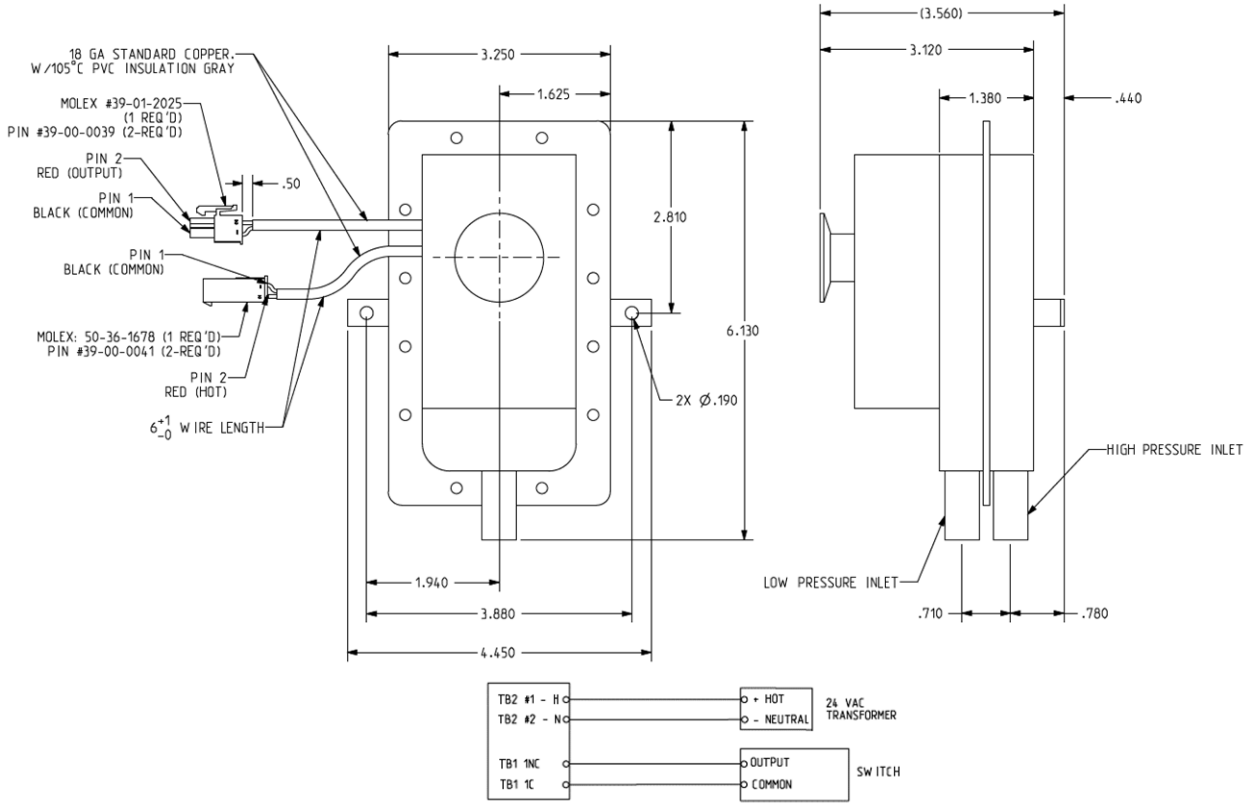
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



NOTE:
1. PRESSURE CONNECTIONS: 3/16” OD BARBED FITTING FOR ¼” TUBING
2. OPERATING TEMPERATURE: 0 - 85 C
3. COMPENSATED TEMPERATURE: 0 - 50 C
4. LOAD IMPEDANCE: 500 OHMS
5. TERMINATION: SCREW TERMINAL BLOCK
6. ACCURACY: 0.25%
7. INPUT VOLTAGE: 24VAC (NOMINAL)

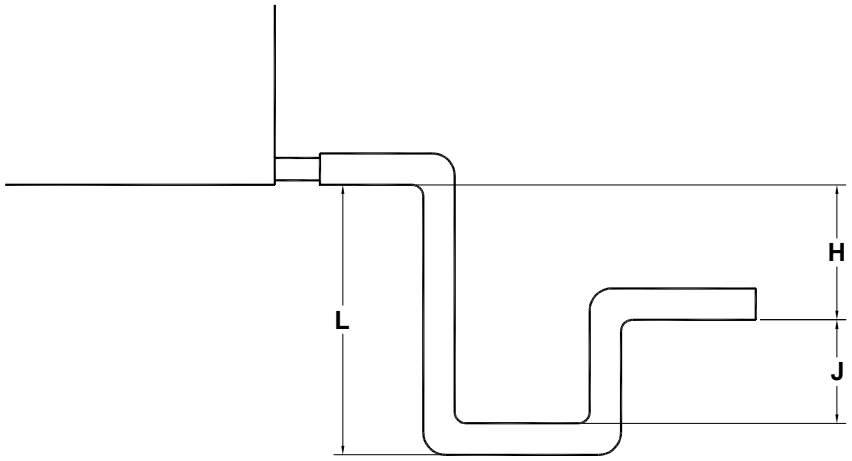
Accessory - Performance Climate Changer (CSAA)
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

High Static sensor



Mounting Position: Diaphragm in any vertical plane.
Field Adjustable Range: 0.40 ± 0.06”wc to 12.0”wc
Factory Set Range: 10.0”wc
Maximum Pressure: 13.0”wc
Operating Temperature Range: -40F to 180F (-40C to 82C)
Electrical Rating: 0.5 VA @ 24VAC, 50/60 Hz
Contacts: DPDT, 2 form-C rated 8 amps @ 250VAC
Electrical Connections: See Diagram
Sample Line Connections: Ferrule and nut compression type connectors will accept 0.25” OD Rigid Tubing

Accessory - Performance Climate Changer (CSAA)
Trap Schedule
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14



Drain pan trapping for section under negative pressure

L = H + **J** + pipe diameter where:
H = 1 inch for each inch of negative pressure (loaded filters) plus 1 inch
J = ½ **H**

Drain pan trapping for section under positive pressure

L = H + **J** + pipe diameter where:
H = 1/2 inch (minimum)
J = ½ inch plus the unit positive static pressure at coil discharge (loaded filters)

Unit Tag(s)	Unit Size	Entering Ext. Static Pressure (in H2O)	Discharge Ext. Static Pressure (in H2O)	Drain pan Section Location	Recommended Trap Dimensions[1]			Selected Baserail Height (in)[1]
					H (in)	J (in)	L (in)	
RTU-13[2], RTU-14[2]	Unit size 25	0.750	0.750	Coil section [6]	3.493	1.747	6.240	6.000

[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 (CSAA)
Filter Schedule
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Unit Tag(s)	Filter Location	Filter Arrangement	Filter Depth	Filter Type	MERV Rating	Filter Quantity	Filter Size
RTU-13, RTU-14	Filter section (Pos #2)	Angled filter	2in. filter frame	Pleated media	MERV 8	18	16 x 25

Field Wiring - Performance Climate Changer (CSAA)
MCA MOP Schedule
Item: A1 Qty: 2 Tag(s): RTU-13, RTU-14

Unit Tag(s)	Circuit	Circuit Description	Voltage/Phase/Hz	MCA (A)	MOP (A)
RTU-13, RTU-14	1	Supply fan + controls-LL + lights+switch	460/3/60	18.80	30.00
	2	UV lights 1	115/1/60	1.63	15.00
	3	Receptacle	115/1/60	10.00	15.00

ESTIMATED LEAD TIMES as of January 05, 2026*

Item	Tag(s)	Qty	Description	Estimated Lead Time	Duration**
A1	RTU-13, RTU-14	2	Performance Climate Changer (CSAA)	13	weeks

* Estimated lead times are provided for informational purposes only and are subject to change without notice.
** Estimated lead times are in business days or weeks; they do not reflect holidays or shipping time.

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 (CSAA)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-13, RTU-14	2	Performance Climate Changer (CSAA)	CSAA025UB

Field Installed Option Description	Part/Ordering Number
Pleated media	

Attachment B

As Proposed Submittal

Prepared For:
Okaloosa County School Board

Sold To:
Okaloosa County School Board

Date: January 12, 2026

Job Name:
OCSD Brunner MS Chiller Repl

Opportunity ID: 8099545

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

Product Summary

Qty	Product
1	Water Cooled Helical Rotary Chillers

Tony Rodriguez
Trane U.S. Inc.
580 East Burgess Road, Suite A-2
Pensacola, FL 32504
Office Phone: (850) 473-3850

Notes:

1. Please confirm Evaporator/Condenser Handing.

   Chiller 1 - Closest chiller to mechanical room entrance door.

   Chiller is LH evaporator
   Chiller is LH condenser with Marine Boxes.

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

Submittal acceptance and return is a critical step, so please ensure submittals are returned with approval to release to production within 14 days of submittal date.

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

Existing CH1 closest to door connections

Table of Contents

Tag Data - Water Cooled Helical Rotary Chillers (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number
A1	CH-1	1	175-400 Ton Water-Cooled (RTHD)	RTHDUC1FX**EAD5W2RALE4A2RCLAVCQ*EXCBCXY***FEUTB2XXRXVBX***X

Product Data - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

High
RTHD Water-Cooled (TM)
Water Chiller Business Unit, Pueblo, CO
Startup Included - Trane Service Must Start Equipment for Warranty to be Honored
C1 Compressor
UL Listed to U.S. and Canadian via ETL
ASHRAE 90.1/CSA C743 - No Compliance
AHRI certified
ASME pressure vessel code
Refrigerant Isolation Valves
With Oil Cooler
Factory Insulation Cold Parts
Standard Safety Devices
Refrigerant Charge R513A
Shrink Wrap
D5 Evaporator
Internally and Externally Enhanced Evap Tube - Water Only
2 Pass Evaporator Water Box
Fluid type = water
Right Hand Evaporator Connection
Standard Grooved Pipe
150 psi/10.5 Bar Evap Water Pressure
E4 Condenser
Enhanced Fin-Copper 0.028"
2 Pass Condenser
Water
Right Hand Condenser Connection
Marine Water Box Connection
150 psi/10.5 bar condenser water pressure
460 volt/60 hertz/3 phase
Wye-Delta Closed Transition Starter
364 max RLA unit mounted starter
High Interrupt Circuit Breaker
Under/Over Voltage Protection
BACnet Interface (MS/TP)
External Chilled Water and Current Limit Setpoint - 2-10Vdc
Programmable Relays
Chilled Water Reset - Return Water Temperature
Condenser Regulating Valve Out & % RLA
1000ppm Capability with 4-20mA Signal
6" 150 psi 115V 2-Way Water Reg. Valve (Field Installed)
150 psi NEMA-1 flow switch x 2
5 Year Parts, Labor, & Refrigerant Warranty

Performance Data - Water Cooled Helical Rotary Chillers

Tags	CH-1
Nominal Capacity (tons)	250.00
Refrigeration Capacity (tons)	250.00
Total Power (kW)	185.15
Cooling Efficiency (kW/ton)	0.7406
A-Weighted Sound Pressure (AHRI) (dBA)	83
Refrigerant Charge (lb)	490.0
Refrigerant Charge - Metric (kg)	222
Oil Charge - Metric (L)	25.30
Leaving Fluid Evaporator (F)	44.00
Entering Fluid Evaporator (F)	56.00
Flow Evaporator (gpm)	497.93
Fluid Pressure Drop Evaporator (ft H2O)	3.85
Evaporator Fouling Factor (hr-sq ft-deg F/ Btu)	0.000100
Evaporator Fluid Freeze Point (F)	32.00
Saturated Evaporator Temp (F)	40.69
Entering Fluid Condenser (F)	85.00
Leaving Fluid Condenser (F)	100.00
Flow Condenser (gpm)	493.86
Fluid Pressure Drop Condenser (ft H2O)	11.98
Condenser Fouling Factor (hr-sq ft-deg F/ Btu)	0.000250
VPF Min Flow Condenser (gpm)	258.21
Fluid pressure drop min flow cond (ft H2O)	3.82
Saturated Condenser Temp (F)	105.42
RLA/MRC (AFD Input Amps) (A)	262.11
Min circuit ampacity (A)	327.63
Max overcurrent protection (A)	500.00
Compressor Y-LRA (A)	469.00
Motor Locked Rotor Amps (Wye-Delta) (A)	1453.00
Short Circuit Current Rating (A)	65000.00
Length (in)	124.700
Width (in)	67.900
Height (in)	76.200
Rated Refrigeration Capacity (AHRI) (tons)	250.00
Rated Cooling Efficiency (AHRI) (kW/ton)	0.6855
IPLV.IP (kW/ton)	0.5756
Number of Refrigerant Circuits	1

Product Report - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

Series R Product Report

General

Chiller Model	RTHD Water-Cooled (TM)
Unit Nominal Tons	250.0 tons
Compressor Configuration	C1
Unit Efficiency	High
Voltage	460.V/60.Hz/3Ph
Refrigerant	Refrigerant Charge R513A
Number of Circuits	1
Number of Compressors	1
Agency Listing	UL Listed to U.S. and Canadian via ETL

Chiller Performance

Cooling Capacity	250.0 tons	**IPLV.IP**	0.5756 kW/ton
Cooling Efficiency	0.7406 kW/ton		

Evaporator

Evaporator Configuration	D5	**Fluid Properties**	
Pass Configuration	2 Pass Evaporator	**Leaving Temperature**	44.00 F
Fouling Factor	0.000100 hr-sq ft-deg F/ Btu	**Entering Temperature**	56.00 F
Design Flow	497.9 gpm	**Fluid Type**	Water
Evaporator Head Loss	3.85 ft H2O	**Fluid Freeze Point**	32.00 F
VPF Min Flow	373.4 gpm		
VPF Head Loss Min Flow	2.16 ft H2O		

Condenser

Condenser Configuration	E4	**Fluid Properties**	
Pass Configuration	2 Pass Condenser	**Leaving Temperature**	100.00 F
Fouling Factor	0.000250 hr-sq ft-deg F/ Btu	**Entering Temperature**	85.00 F
Design Flow	493.9 gpm	**Fluid Type**	Water
Condenser Head Loss	12.0 ft H2O		
VPF Min Flow	258.2 gpm		
VPF Head Loss Min Flow	3.82 ft H2O		

Electrical

Unit Voltage	460.V/60.Hz/3Ph	**MCA**	327.63 A
Compressor Starter	Wye-delta	**MOP**	500.00 A
Incoming Line Connection Type	High Interrupt Circuit Breaker	**RLA/MRC (AFD Input Amps)**	262.11 A
Short Circuit Rating	65000.00 A	**LRA**	469.00 A
Total Power	185.2 kW	**Y-LRA**	1453.00 A
		Max RLA (Starter Sizing)	364

Acoustics

		A Weighted Sound Pressure (AHRI)	83 dBA

Product Report - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

Physical

Dimensions		Weights	
Length	124.700 in	Operating Weight	13673.0 lb
Width	67.900 in	Shipping Weight	12973.0 lb
Height	76.200 in		

Circuit	Refrigerant Charge	Oil Charge
Circuit 1	490.0 lb	6.70 gal

Partload Information

Partload Data.IP - IPLV 0.0000 kW/ton

Load %	Cap. tons	LWT Evap F	EWT Evap F	Flow Evap gpm	WPD Evap ft H2O	EWT Cond F	LWT Cond F	Flow Cond gpm	WPD Cond ft H2O	Power kW	Eff. kW/ton
100	259.0	44.00	54.36	597.4	5.45	85.00	94.63	785.6	18.2	177.7	0.6863
75	194.2	44.00	51.77	597.4	5.46	75.00	82.08	785.6	18.8	117.0	0.6025
50	129.5	44.00	49.18	597.4	5.47	65.00	69.63	785.6	19.5	66.59	0.5143
25	64.74	44.00	46.59	597.4	5.49	65.00	67.49	785.6	19.5	48.52	0.7494

Standard Rating Performance

Rated Cooling Capacity	250.0 tons	AHRI Standard Rating Conditions with Water.
Rated Cooling Efficiency	0.6855 kW/ton	
Rated IPLV	0.5756 kW/ton	

Regulatory Compliance

AHRI Certified

Certified in accordance with the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org

Publication

Data Generation Date	10/16/2025
Trane Select Assist Version Number	300

Mechanical Specifications - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

Foundation
Provide rigid, non-warping mounting pads or a concrete foundation of sufficient strength and mass to support the applicable operating weight (i.e. including completed piping, and full operating charges of refrigerant, oil and water). The expectation of Trane equipment is that piping is fully supported by an independent structure/system, without being connected to the waterbox. Once in place, the unit must be level within 1/2" across the length and width of the unit. The Trane Company is not responsible for equipment problems resulting from an improperly designed or constructed foundation.

General
Exposed metal surfaces are painted with air-dry beige direct to metal single component paint prior to shipment. Each unit ships with a full operating charge of refrigerant and oil. Molded elastomeric isolation pads are supplied for placement. Start-up and operator instruction by factory trained service personnel is included.

Pressure Vessel Code
Chiller complies with ASME Pressure Vessel Code. ASME nameplates are attached to applicable pressure vessels including oil separators.

Compressor - Motor
Semi-hermetic, direct-drive, rotary compressor with capacity control slide valve and differential refrigerant pressure oil flow system. Four pressure lubricated rolling element bearing groups support the rotating assembly.

Motor is a suction gas cooled, hermetically sealed, two-pole, squirrel cage induction-type.

Evaporator
Shells are carbon steel plate. Evaporator is designed, tested and stamped in accordance with ASME Code for refrigerant side working pressure of 200 psig (1379 kPa).

All tube sheets are carbon steel. Evaporator tubes are individually replaceable. Tubes are externally finned, internally enhanced seamless copper with lands at both tube sheets. Evaporator tubes are 1-inch (25.4) in diameter. Tubes are mechanically expanded into tube sheets and mechanically fastened to tube supports.

Water pass arrangements are with grooved connections 150 psig (1034.2 kPa) waterside. Connections are right-handed. Waterside is hydrostatically tested at 1 1/2 times design working pressure.

Condenser
Shells are carbon steel plate. Condenser is designed, tested and stamped in accordance with ASME Code for refrigerant side working pressure of 200 psig (1379 kPa).

All tube sheets are carbon steel. Condenser tubes are individually replaceable. Tubes are externally finned; internally enhanced seamless copper with lands at both tube sheets. Condenser tubes are 3/4 inch (19.05 mm) in diameter. Tubes are mechanically expanded into tube sheets and mechanically fastened to tube supports. A baffle prevents direct impingement of compressor discharge gas upon the tubes.

Condenser is designed for 150 psig (1034.2 kPa) waterside. Connections are right-handed. Waterside is hydrostatically tested at 1 1/2 times design working pressure.

Condenser Connection Type
Condenser water boxes are fabricated with grooved pipe marine connections.

Oil Cooler
Unit has an oil cooler incorporated into the chiller oil circuit to provide reliable operation with low design evaporator temperatures and/or high design condenser temperatures.

Water Regulating Valve
For water regulation, a field-installed 2-way butterfly-type (lug-style) valve and field-mounted valve actuator, ships with the chiller. The 2-way valve is field-wired and controlled by the chiller regulating valve control output.

The single-phase, dual frequency 50 or 60 Hz, motor can be selected with 115 V and can be powered directly from control power transformer at unit.

Valves are 6 inch (152.4 mm) in diameter and 150 psig (1034.2 kPa).

Refrigerant Circuit
An electronically controlled expansion valve maintains proper refrigerant flow.

Condenser Regulating Valve Control and Percent RLA Output
Provides a conditioned signal for regulating valve or other condenser water control and percent of full Run Load Amp. The valve control is a Proportional Integral Derivative signal based on the system differential pressure and time at the differential. The signals are either a 0 to 10 Vdc current for condenser regulating valve control or a 2 to 10 Vdc current for percent RLA. The regulating valve signal can be used to control condenser water flow by inputting it into a variable speed condenser water pump, a building automation system, a water-regulating valve, or other customer selected hardware. The percent RLA signal is used to output chiller load to a building automation system.

Programmable Relays
Predefined, factory-installed, programmable relays allow the user to select four relay outputs.

Programmable relays available outputs are: Alarm-Latching (manual reset), Alarm-Auto Reset, General Alarm, warning, chiller limit mode, chiller running, maximum capacity, head pressure relief request.

Note: An additional 115V field provided power connection is required to power the programmable relays.

Refrigerant Isolation Valves
Isolation valves are added to the refrigerant circuit to provide means of isolating the refrigerant charge in the condenser for installation separation or servicing.

Unit Controls
All unit controls are housed in an enclosure with removable plates to allow for customer connection of power wiring and remote interlocks. All controls, including sensors, are factory mounted and tested prior to shipment. Microcomputer controls provide all control functions including startup and shut down, leaving chilled water temperature control, evaporator and condenser flow proving, compressor speed control and loading, electronic expansion valve modulation, anti-recycle logic, and load limiting.

The Trane Symbio (TM) 800 controller, utilizing Adaptive Control microprocessor, automatically takes action to avoid unit shut-down due to abnormal operating conditions associated with low evaporator refrigerant temperature, high condensing temperature, or current overload. Should the abnormal operating condition continue until a protective limit is violated, the unit will be shut down. Unit protective functions of the Symbio (TM) 800 include: low evaporator refrigerant pressure, high condenser refrigerant pressure, low oil flow, critical sensor or detection circuit faults, current overload, high compressor discharge temperature, communications lost between modules, electrical distribution faults, phase loss, phase imbalance, phase reversal, external and emergency stop, momentary power loss, under/over voltage, and loss of evaporator or condenser water flow.

Unit Display
A full color TD-7 AdaptiView touch screen display indicates all important unit parameters, in logical groupings on various screens. The parameters including chilled water set point, leaving chilled water temperature, entering condenser water temperature, evaporator and condenser refrigerant temperatures and pressures, compressor data, and all pertinent electrical information. The display also provides on screen trending graphs of predefined parameters as well as customizable trend graphs based on user defined parameters. The display also provides indication of the chiller top level operating modes with detailed sub-mode reports available with a single key press, as well as diagnostics annunciation and date and time stamped diagnostic history.

Under/Over Voltage Protection
Unit is provided with under/over voltage protection, with actual volts shown on the clear language display.

BACnet Interface
BACNet Interface allows the user to easily interface using BACnet MS/TP via a single twisted-pair wiring to a factory-installed and tested communication board.

External Setpoints
External Chilled Water and Current Limit Setpoint capabilities are provided. Setpoint is communicated to a factory-installed and tested communication board through a 2-10Vdc conditioned signal.

Programmable Relays
Default set, factory installed, programmable relays are provided. Operator has ability to select four from list of eight possible relay outputs. List of possible relays includes Alarm-Latching, Alarm-Auto Reset, general Alarm, Warning, Chiller Limit Mode, Compressor Running, Head Pressure Relief Request, and Tracer Control.

Chilled Water Reset
Chilled water reset based on return water temperature is provided. This includes unit controller display of chilled water temperature.

Refrigerant Monitor Input
Accepts signal from refrigerant monitor indicating 0-1000 ppm with 4-20mA signal, to a factory installed and tested communication board.

Unit Mounted Starter
Starter is a Wye-Delta closed transition configuration. Starter reduces expected inrush to 33 percent of rated motor Locked Rotor Amps. UL 1995 type enclosure with top power wiring access and three-phase solid-state overload protection. The starter is factory mounted and completely prewired to the compressor motor and the control panel. Factory installed and wired 600VA-control power transformer provides all unit control power (120 Vac secondary) as well as the display module power (24 Vac secondary).

Starter Disconnect
A hi-interrupting molded-case circuit breaker is provided with through-the-door handle to disconnect the main power, and comes pre-wired from the factory with terminal block power connections.

Short Circuit Current Rating
Starter has a short circuit current rating of 65,000 amps.

Insulation
Low temperature surfaces are covered with factory installed 3/4 inch (19.05 mm) Armaflex II or equal (k=0.28) insulation, including the evaporator and water boxes, suction line, and motor housing. 3/8" foam insulation will be used on the liquid level sensor and gas pump assembly, including piping. Lifting lugs, base plates and service valves will not include insulation.

Warranty
A First Year Parts Warranty is included, covering parts for the complete unit.

Shipment Packaging
Unit is provided with shrink-wrapped opaque plastic, with UV protection and rust inhibitor, around entire unit for shipment.

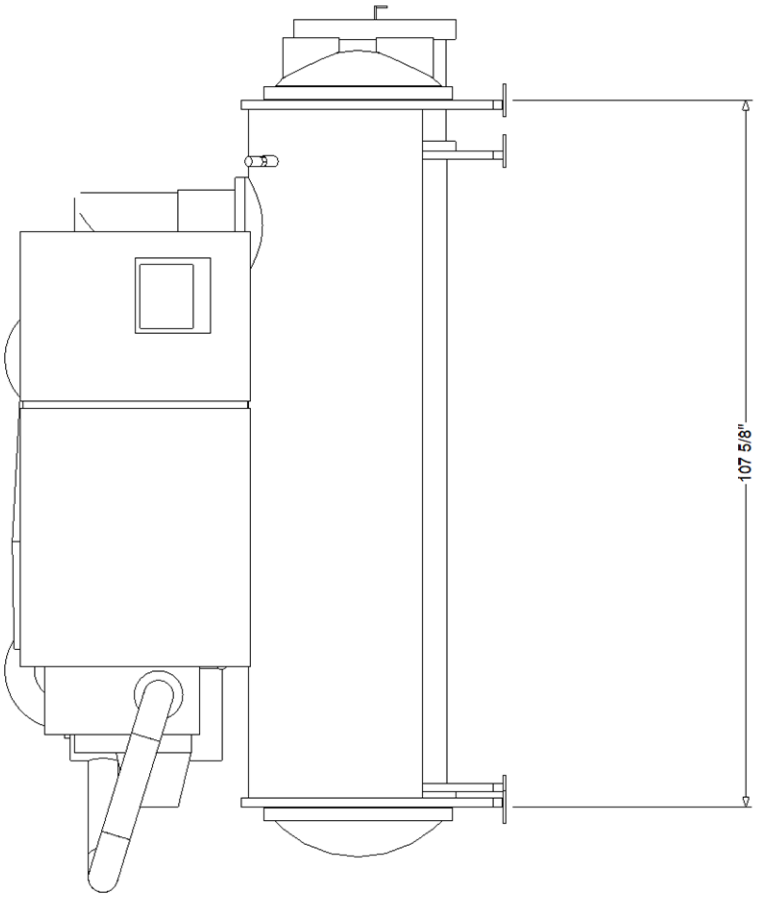
Dimensional Drawings - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

NOTES:
1. Dimensional Tolerance +/- 1/4"
2. Evaporator and Condenser Entering Fluid Connection is the Bottom Connection. Evaporator and Condenser Leaving Fluid Connection is the Top Connection.

Evaporator Water Storage	52 Gals (197 Liters)
Condenser Water Storage	32 Gals (121 Liters)

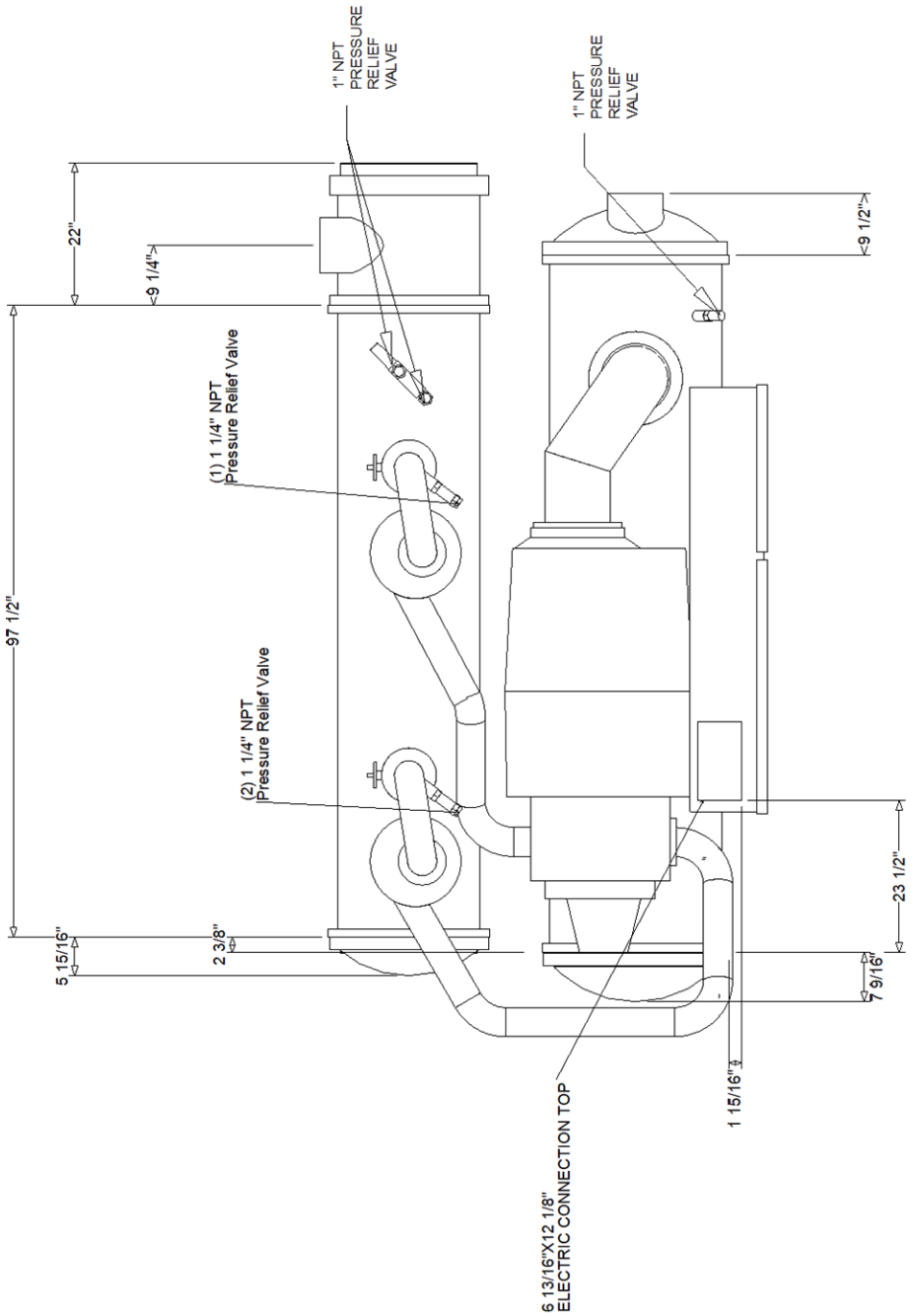
Evaporator Water Connection Size	8 in (203.2 mm)	NPS Pipe Size
Condenser Water Connection Size	8 in (203.2 mm)	NPS Pipe Size
Short Circuit Withstand Rating (RMS Symmetrical AMPS)	65,000.00 A	

Dimensional Drawings - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

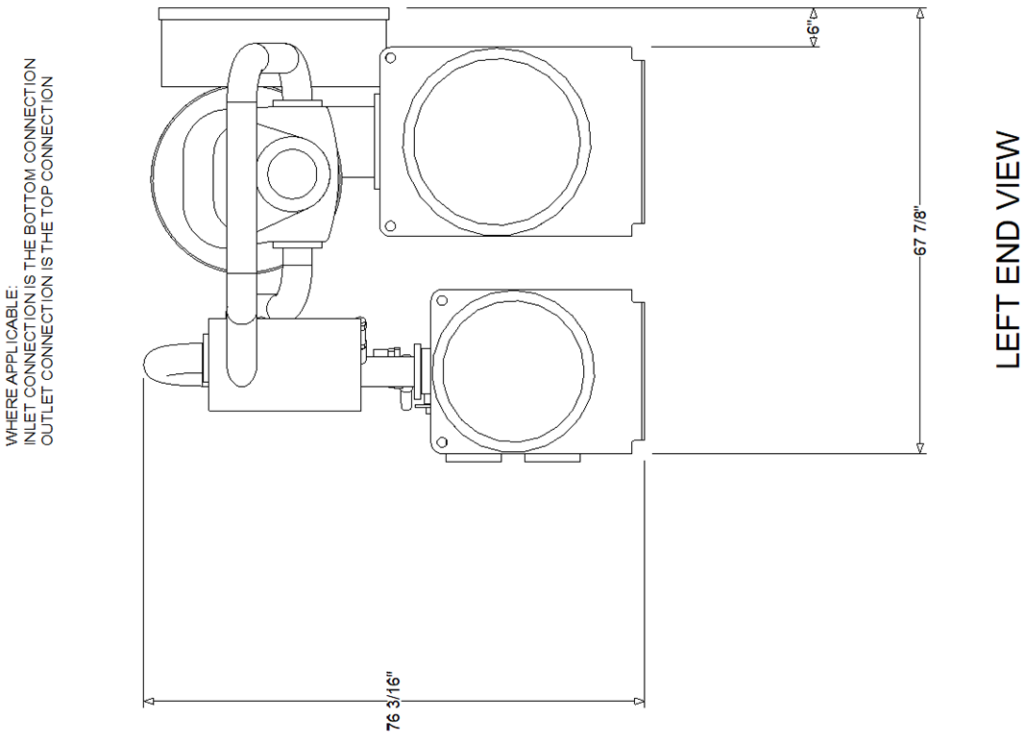


FRONT VIEW

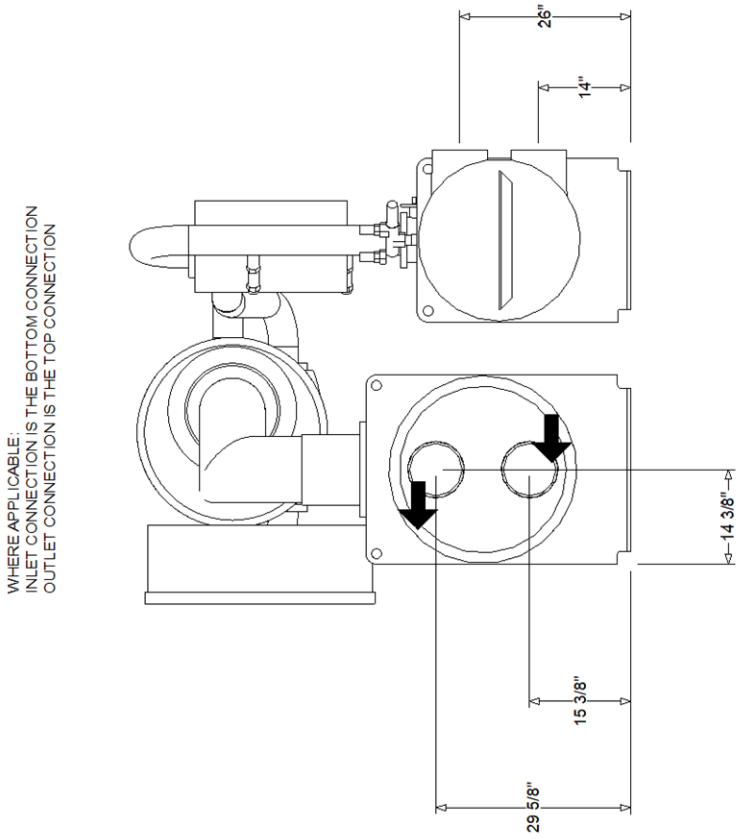
Dimensional Drawings - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1



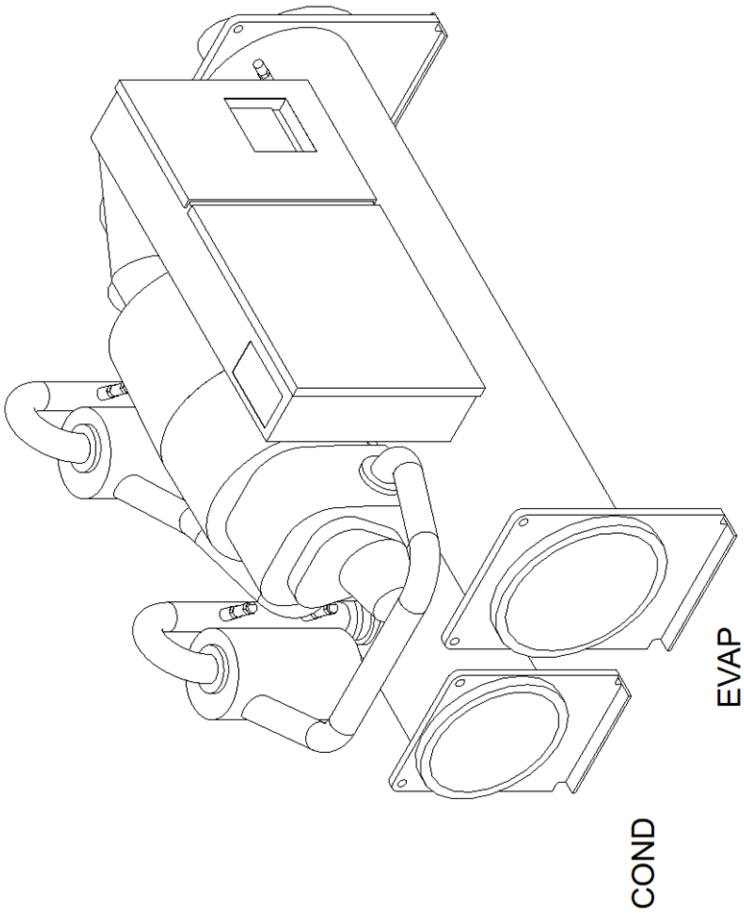
Dimensional Drawings - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1



Dimensional Drawings - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

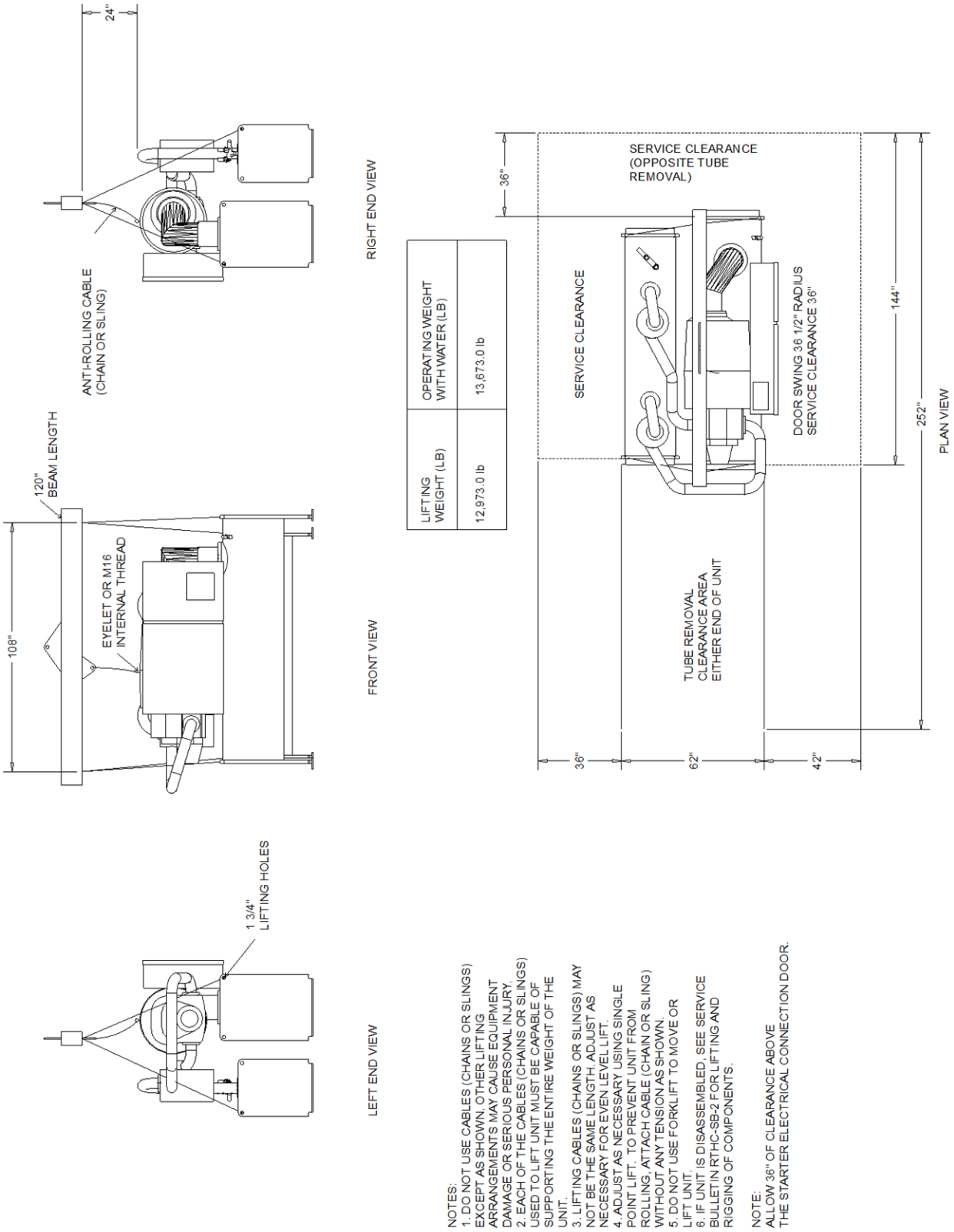


Dimensional Drawings - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1



ISOMETRIC VIEW

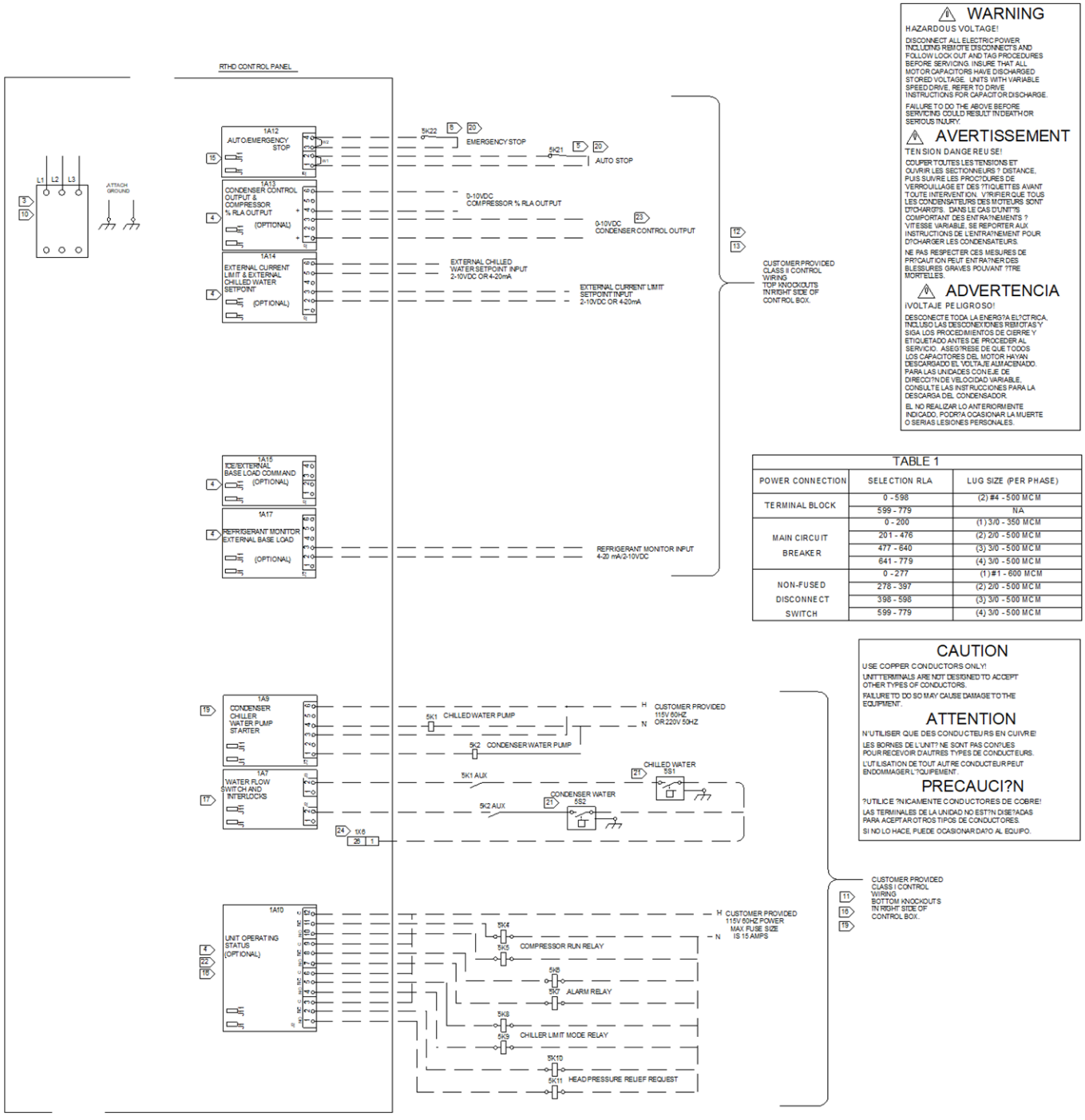
Weight, Clearance & Rigging - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1



NOTES:
1. DO NOT USE CABLES (CHAINS OR SLINGS) EXCEPT AS SHOWN. OTHER LIFTING ARRANGEMENTS MAY CAUSE EQUIPMENT DAMAGE OR SERIOUS PERSONAL INJURY.
2. EACH OF THE CABLES (CHAINS OR SLINGS) USED TO LIFT UNIT MUST BE CAPABLE OF SUPPORTING THE ENTIRE WEIGHT OF THE UNIT.
3. LIFTING CABLES (CHAINS OR SLINGS) MAY NOT BE THE SAME LENGTH. ADJUST AS NECESSARY FOR EVEN LEVEL LIFT.
4. ADJUST AS NECESSARY USING SINGLE POINT LIFT. TO PREVENT UNIT FROM ROLLING, ATTACH CABLE (CHAIN OR SLING) WITHOUT ANY TENSION AS SHOWN.
5. DO NOT USE FORKLIFT TO MOVE OR LIFT UNIT.
6. IF UNIT IS DISASSEMBLED, SEE SERVICE BULLETIN RTHC-SB-2 FOR LIFTING AND RIGGING OF COMPONENTS.

NOTE:
ALLOW 36" OF CLEARANCE ABOVE THE STARTER ELECTRICAL CONNECTION DOOR.

Field Wiring - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1



⚠ WARNING

HAZARDOUS VOLTAGE!

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

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

⚠ AVERTISSEMENT

TENSION DANGEREUSE!

COUPER TOUTES LES TENSIONS ET OUVRIR LES SECTIONNEURS ? DISTANCE, PUIS SUIVRE LES PROCÉDURES DE VERROUILLAGE ET DES ?TIQUETTES AVANT TOUTE INTERVENTION. V?RIFIER QUE TOUS LES CONDENSATEURS DES MOTEURS SONT D?CHARG?S. DANS LE CAS D'UNIT?S COMPORTANT DES ENTRA?NEMENTS ? VITESSE VARIABLE, SE REPORTER AUX INSTRUCTIONS DE L'ENTRA?NEMENT POUR D?CHARGER LES CONDENSATEURS.

NE PAS RESPECTER CES MESURES DE PR?CAUTION PEUT ENTRA?NER DES BLESSURES GRAVES POUVANT ?TRE MORTELLES.

⚠ ADVERTENCIA

¡VOLTAJE PELIGROSO!

DESCONECTE TODA LA ENERG?A EL?CTRICA, INCLUSO LAS DESCONEXIONES REMOTAS Y SIGA LOS PROCEDIMIENTOS DE CIERRE Y ETIQUETADO ANTES DE PROCEDER AL SERVICIO. ASEG?RESE DE QUE TODOS LOS CAPACITORES DEL MOTOR HAYAN DESCARGADO EL VOLTAJE ALMACENADO. PARA LAS UNIDADES CON EJE DE DIRECCI?N DE VELOCIDAD VARIABLE, CONSULTE LAS INSTRUCCIONES PARA LA DESCARGA DEL CONDENSADOR.

EL NO REALIZAR LO ANTERIORMENTE INDICADO, PODR?A OCASIONAR LA MUERTE O SERIAS LESIONES PERSONALES.

TABLE 1

POWER CONNECTION	SELECTION RLA	LUG SIZE (PER PHASE)
TERMINAL BLOCK	0 - 598	(2) #4 - 500 MCM
	599 - 779	NA
MAIN CIRCUIT BREAKER	0 - 200	(1) 3/0 - 350 MCM
	201 - 476	(2) 2/0 - 500 MCM
	477 - 640	(3) 3/0 - 500 MCM
	641 - 779	(4) 3/0 - 500 MCM
NON-FUSED DISCONNECT SWITCH	0 - 277	(1) #1 - 600 MCM
	278 - 397	(2) 2/0 - 500 MCM
	398 - 598	(3) 3/0 - 500 MCM
	599 - 779	(4) 3/0 - 500 MCM

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'UNIT? NE SONT PAS CONÇUES POUR RECEVOIR D'AUTRES TYPES DE CONDUCTEURS.

L'UTILISATION DE TOUT AUTRE CONDUCTEUR PEUT ENDOMMAGER L'?QUIPEMENT.

PRECAUCI?N

?UTILICE ?NICAMENTE CONDUCTORES DE COBRE!

LAS TERMINALES DE LA UNIDAD NO EST?N DISE?ADAS PARA ACEPTAR OTROS TIPOS DE CONDUCTORES.

SI NO LO HACE, PUEDE OCASIONAR DA?O AL EQUIPO.

Field Wiring - Water Cooled Helical Rotary Chillers
Item: A1 Qty: 1 Tag(s): CH-1

GENERAL NOTES:

1. CAUTION-DO NOT ENERGIZE THE UNIT UNTIL CHECK OUT AND STARTUP PROCEDURES HAVE BEEN COMPLETED.
2. COMPRESSOR MOTOR IS PROTECTED FROM PRIMARY SINGLE PHASE FAILURE.
3. ALL UNIT POWER WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM TEMPERATURE INSULATION RATING OF 75 DEGREE C (MRLA = 0-598) OR 90 DEGREE C (MRLA = 779). SEE UNIT NAMEPLATE FOR MINIMUM CIRCUIT AMPACITY AND MAXIMUM FUSE SIZE REQUIREMENTS. USE 600 VOLT COPPER CONDUCTORS ONLY. 200 TO 600 VOLT CIRCUIT, PROVIDE AN EQUIPMENT GROUND IN ACCORDANCE WITH APPLICABLE ELECTRIC CODES.
4. THESE FEATURES ARE OPTIONAL AND MAY OR MAY NOT BE PROVIDED. CUSTOMER PROVIDED WIRING FOR ALL STANDARD FEATURES AND OPTIONS IS SHOWN ON THIS DIAGRAM. OPTIONAL FEATURES ARE SO NOTED.
5. OPENING THE EXTERNAL AUTO-STOP CONTACT WILL INITATE A SHUT DOWN SEQUENCE OF THE CHILLER. CLOSURE OF THE CONTACT WILL ALLOW THE CHILLER TO RETURN TO NORMAL AUTOMATIC OPERATION.
6. AN OPENING OF THE EMERGENCY STOP CONTACT WILL SHUT THE CHILLER DOWN IMMEDIATELY AND TRIGGER AN EMERGENCY STOP INPUT DIAGNOSTIC. CLOSURE OF THE CONTACT AND A MANUAL RESET OF THE UNIT CONTROL DIAGNOSTIC WILL ALLOW THE CHILLER TO RETURN TO NORMAL OPERATION.
7. ICE BUILDING CONTROL 1A8 MODULE IS OPTIONAL.

WIRING REQUIREMENTS

8. RECOMMENDED FIELD WIRING CONNECTIONS ARE SHOWN BY DASHED LINES
9. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND STATE AND LOCAL REQUIREMENTS. EXPORT UNIT WIRING MUST COMPLY WITH LOCAL APPLICABLE CODES.
10. LINE VOLTAGE OPTIONS:
UNIT MOUNTED TERMINAL BLOCK, DISCONNECT OR HACR CIRCUIT BREAKER. THE POWER WIRING LUG SIZE PROVIDED ON THE VARIOUS UNITS IS SHOWN IN TABLE 1.
11. CLASS I WIRING ,14 AWG, 600 VOLT CONDUCTORS. 115 VOLT CIRCUIT
12. ALL CUSTOMER CONTROL CIRCUIT WIRING MUST BE COPPER CONDUCTORS ONLY AND HAVE A MINIMUM INSULATION RATING OF 300 VOLTS. EXCEPT AS NOTED ALL CUSTOMER WIRING CONNECTIONS ARE MADE TO CIRCUIT BOARD MOUNTED BOX LUGS WITH A WIRE RANGE OF 14 TO 18 AWG.
13. DO NOT RUN LOW VOLTAGE CONTROL WIRING (30 VOLTS OR LESS) IN CONDUIT WITH 110 VOLT OR HIGHER WIRING. DO NOT EXCEED THE FOLLOWING MAXIMUM RUN LENGTHS FOR A GIVEN SIZE: 14 AWG, 5000 FT; 16 AWG, 2000 FT; 18 AWG, 1000 FT.
14. TRANE TRACER SUMMIT RECOMMENDED WIRE:
TRANE ICS SHIELDED TWISTED PAIR COMMUNICATION CABLE 14-18 AWG. 600V CABLE, 30 VOLT CIRCUIT. THE SUM TOTAL LENGTH OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 5000 FEET. GROUND THE SHIELD AT THE TRACER END ONLY. REFER TO THE IOM FOR COMPLETE CABLE AND INSTALLATION REQUIREMENTS. TRANE TRACER SUMMIT MAY ALSO USE LCI WIRING RECOMMENDED BELOW.

LONTALK COMMUNICATION INTERFACE (LCI) RECOMMENDED WIRE:
22 AWG LEVEL 4 UNSHIELDED COMMUNICATION WIRE RECOMMENDED. THE SUM TOTAL LENGTH OF ALL INTERCONNECTED CABLE SEGMENTS NOT TO EXCEED 4500 FEET. CONNECTION TOPOLOGY SHOULD BE DAISY CHAIN. REFER TO BUILDING AUTOMATION SYSTEM (BAS) COMMUNICATION INSTALLATION LITERATURE FOR END OF LINE TERMINATION RESISTOR REQUIREMENTS.

15. THE CONTACTS FOR THESE FEATURES ARE JUMPERED AT THE FACTORY BY JUMPERS W1 & W2 TO ENABLE UNIT OPERATION. IF REMOTE CONTROL IS DESIRED REMOVE THE JUMPERS AND CONNECT TO THE DESIRED CONTROL CIRCUIT.
16. FIELD PROVIDED 115 VOLT 60HZ OR 220 VOLT 50HZ CONTROL POWER SUPPLIES ARE REQUIRED. THE MAX FUSE SIZE FOR ALL FIELD PROVIDED WIRING IS 15 AMPS. GROUND ALL CUSTOMER PROVIDED POWER SUPPLIES AS REQUIRED BY CODE. GREEN GROUND SCREWS ARE PROVIDED IN UNIT CONTROL PANEL.
17. CHILLED/CONDENSER WATER PUMP STARTER AUXILIARY CONTACTS TO BE WIRED IN SERIES WITH FLOW SWITCHES.
18. WHEN ORDERED THE OUTDOOR AIR TEMP SENSOR ELECTRONICS IS FACTORY MOUNTED INSIDE THE CONTROL PANEL AND THE IPC BUS IS FACTORY WIRED. THE SENSOR IS TO BE FIELD WIRED EXTERNALLY WITH THE SENSOR LEADS EXTENDED BACK TO THE CONTROL PANEL. THESE WIRES CAN BE SPLICED WITH TWO 14-18 AWG 600V WIRES, WITH A MAXIMUM LENGTH OF 1000 FEET (305 METERS). SPLICE AT SENSOR END MUST BE WATER TIGHT. REFER TO UNIT IOM FOR DETAILS.

CONTACT RATINGS AND REQUIREMENTS

19. UNIT PROVIDED DRY CONTACTS FOR THE CONDENSER/CHILLED WATER PUMP CONTROL. THE UNIT OPERATING STATUS RELAYS AND ICE MAKING STATUS RELAY ARE RATED FOR 7.2 AMPS RESISTIVE, 2.88 AMPS PILOT DUTY, OR 1/3 HP, 7.2 FLA AT 120 VOLTS 60 HZ, CONTACTS ARE RATED FOR 5 AMPS GENERAL PURPOSE DUTY AT 240 VOLTS.
20. CUSTOMER SUPPLIED CONTACTS FOR ALL LOW VOLTAGE CONNECTIONS MUST BE COMPATABLE WITH DRY CIRCUIT 24 VOLTS DC FOR A 12 MA RESISTIVE LOAD. SILVER OR GOLD PLATED CONTACTS ARE RECOMMENDED.
21. FLOW SWITCH AND INTERLOCK CONTACTS MUST BE ACCEPTABLE FOR USE IN A 120 VOLT 1mA CIRCUIT. OR A 220 VOLT 2mA CIRCUIT.
22. THE FIELD PROVIDED INDICATORS MAY BE RELAYS, LIGHTS OR AUDIBLE DEVICES. EACH FUNCTION IS ASSOCIATED WITH A SPDT RELAY. THE INDICATORS FUNCTIONS MAY BE CONNECTED TO EITHER OR BOTH OF THE NORMALLY OPEN OR NORMALLY CLOSED RELAY CONTACTS OF EACH OF THE 4 SPDT RELAYS ON THE OPTIONAL UNIT OPERATING STATUS MODULE.
THE FUNCTIONS OF THE OPERATING STATUS MODULE RELAYS ARE PROGRAMABLE. SEE IOM FOR DETAILS. DEFAULT FUNCTIONS ARE SHOWN.
THE NORMALLY OPEN CONTACTS ON EACH RELAY OPERATE AS FOLLOWS:

COMPRESSOR RUNNING	THE NO CONTACTS CLOSE WHEN COMPRESSOR STATUS FROM STARTER MODULE IS EITHER STARTING OR RUNNING.
ALARM RELAY	THE NO CONTACTS CLOSE WHEN THERE IS AN DIAGNOSTIC THAT HAS CAUSED A CHILLER SHUTDOWN WITH EITHER A MANUAL RESET REQUIRED OR AN AUTOMATIC RESET POTENTIAL.
CHILLER LIMIT MODE RELAY	THE NO CONTACTS CLOSE WHENEVER THE CHILLER HAS BEEN RUNNING IN ONE OF THE UNLOADING TYPES OF LIMIT MODES (CONDENSER, EVAPORATOR, CURRENT LIMIT OR PHASE IMBALANCE LIMIT) CONTINUOUSLY FOR THE LAST 20 MINUTES.
HEAD PRESSURE RELIEF REQUEST	THE NO CONTACTS CLOSE ANYTIME THE CHILLER IS RUNNING IN ONE OF THE FOLLOWING MODES: ICE MAKING MODE OR CONDENSER PRESSURE LIMIT CONTROL MODE CONTINUOUSLY FOR THE DURATION SPECIFIED BY THE CHILLER HEAD RELIEF RELAY FILTER TIME.

23. FIELD SELECTABLE AS: CONDENSER PRESSURE, DELTA PRESSURE OR CONTROL OUTPUT SIGNAL FOR CONDENSER HEAD PRESSURE CONTROL.
24. THE FIELD WIRING FOR THE 115V HOT LEG IS TERMINATED TO 1X6 TERMINAL BLOCK. SEE INSTRUCTION LABEL IN CONTROL PANEL FOR WIRE INSERTION INSTRUCTIONS. SPLICE FIELD WIRES TOGETHER AND WIRE TO 1X6.
25. CLOSED CONTACT COMMANDS BASE LOADING OPERATION.
26. ACTUAL BASE LOADING SETPOINT USED IS SETABLE AT FRONT PANEL. REFER TO IOM FOR DETAILS.

ESTIMATED LEAD TIMES as of January 12, 2026*

Item	Tag(s)	Qty	Description	Estimated Lead Time	Duration**
A1	CH-1	1	175-400 Ton Water-Cooled (RTHD)	14	weeks

* Estimated lead times are provided for informational purposes only and are subject to change without notice.
** Estimated lead times are in business days or weeks; they do not reflect holidays or shipping time.

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 - Water Cooled Helical Rotary Chillers

Item	Tag(s)	Qty	Description	Model Number
A1	CH-1	1	175-400 Ton Water-Cooled (RTHD)	RTHDUC1FX**EAD5W2RALE4A2RCLAVCQ*EXCBCXY***FEUTB2XXRXVBX***X

Field Installed Option Description	Part/Ordering Number
6" 150 psi 115V 2-Way Water Reg. Valve	WR1