Bid Title	Derby Public Library HVAC Upgrades - April 2026
Bid ID	1131
Submitter Name	<Louis Savarese> lsavarese@controlledair.com (https://prod1.evo.cloud/derbyct/dashboard/?url=/derbyct/dashboard/administrator/staff/user/detail/173041/)
Submitter Email Address	lsavarese@controlledair.com (mailto:lsavarese@controlledair.com)
Company Name	Controlled Air Inc.
Company Street Address	15 NE industrial rd
Company City	Branford
Company State	CT
Company ZIP Code	06405
Company Phone Number	6312553285
Company Fax Number	
Comments	
Date Submitted	Apr 27, 2026 at 09:03:17 AM
Submission Documents	ODY_O - ODY_O-1 - Consolidated Customer Package.pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2946/) ODY_I - ODY_I-2 - Consolidated Customer Package.pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2945/) ODY_I - ODY_I-1 - Consolidated Customer Package.pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2944/) magic air model #'s 4 20 26 .pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2943/) Magic Air Mixing Box Submittal GM0839-25R0.pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2942/) 1766092645-75f-hyperstat-split-spec-sheet.pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2941/) Derby Library Quote Re- bid April 27 2026 .pdf (https://prod1.evo.cloud/derbyct/dashboard/bid/bid_submission/bid_submission_upload/download/2940/)

Received
APR 27 2026
Derby, CT Town Clerk's Office

Controlled Air INC.
HVAC, Building Controls & Energy Systems
YANMAR GROUP

AA/EOE

RESPONSE TO REQUEST FOR PROPOSAL

Derby Public Library – RFQ 2
4/25/2026



Prepared for:
Mr. Brian Hall
Town of Derby Finance Director
1 Elizabeth Street
Derby, CT 06418
203-736-1450

Prepared by:
Louis Savarese

Equipment Site:
Derby Public Library
313 Elizabeth Street
Derby, CT 06418
203-736-1482
www.derbypubliclibrary.org

Dear Brian,

Thank you for again considering Controlled Air, Inc. as your HVAC contractor. We strive to be a leader in creating environmentally sound, energy-efficient HVAC designs that save money for our customers and promote the conservation of energy.

We have experience in the following, as well as what is included in your quote: chillers, cooling towers, evaporative coolers, condensing units, large roof top units, ice thermal storage, product refrigeration, cleanrooms, surgery centers and energy management systems. We can design build a custom solution for your building system, that is energy efficient and affordable.

After your project is complete, we offer custom maintenance contracts to meet your service needs. Routine maintenance is scheduled at your convenience and our team of service professionals is on call 24/7 to respond to any emergencies. All our work is performed by technicians who receive direct factory instruction and our own in-house training.

We are committed to offering the best service, installation, and design work in class and the highest-level in customer satisfaction. We guarantee all of our work, including installation, design and service. If the job is not done to your satisfaction or if a problem is discovered that is due to our error, we will make the necessary corrections and/or repairs at no cost to you. All parts come with a 1 year warranty unless otherwise noted.

We are pleased to offer flexible financing options to help you acquire the solutions you need. Our financing process is quick and simple, often much faster than traditional bank loans.

Option 1: For projects ranging from **$5,000 to $1,000,000**. All businesses receive the same competitive rate, regardless of building ownership status or the need for real estate liens. They also offer solutions for small non-profit projects and religious organizations. For financing up to **$250,000**, no personal financials are required.

Option 2: For larger scale projects, from **$50,000 to $28 Million and beyond**, with terms available from 7 to 20 years, interest rates vary. Ideal option for schools, non-profits, government, and municipal entities. To learn more or get started, please let us know of your interest.

To find out more about Controlled Air, Inc. please contact me or visit our website www.controlledair.com.

Sincerely,
Louis Savarese

Scope Of Work:

Section 1, is to be work included for **ALL** HVAC units.
Section 2 includes specific work, **broken out for each** HVAC unit.

Section 1- Scope of work to be completed on all HVAC systems 1 through 6:

Site Preparation, Demolition:

1. Site protection rigging and demolition of the existing HVAC equipment.

HVAC Electric:

2. We will extend the existing outdoor condenser unit line voltage wiring to new disconnect boxes.
3. We will extend existing indoor air handler line voltage feeders and existing disconnect safety switches to new three phase Air Handler Units motor contactors.
    a. We will replace damaged seal tight external wire covers jackets, if found in poor condition.

Condensate Drain Piping:

4. We will extend the existing indoor air handler condensate water drain piping to the new air handler condensate drip pan. Condensate piping in poor condition will be replaced.

Sheet metal:

5. Each new Air Handler Unit will be fitted with a new outdoor air mixing plenum box.
    a. The plenum box will have a new damper and include a new damper actuator.
    b. We will install a second new duct damper actuator for the existing return duct mounted damper rod.

Hydronic Piping:

6. We will supply and install new hot water heating matching the existing BTU heating capacity.
7. We will supply and install new hot water three-way heating control valve marching existing.

R454B - A2L Refrigerant Compliance Requirements HVAC 1 through 6:

13. We shall furnish all labor, materials, equipment, devices, and coordination necessary to provide a complete A2L (R454B) refrigerant-compliant HVAC installation in accordance with the International Mechanical Code (IMC), NFPA standards, manufacturer installation requirements, and all applicable State of Connecticut codes.

    a. All new HVAC equipment shall be factory-charged and commissioned using Refrigerant R454B, in strict accordance with manufacturer specifications and applicable codes.

14. We shall install all required A2L refrigerant safety and mitigation devices necessary to achieve code compliance under the IMC and NFPA, including but not limited to the following:

    a. Each air-handling unit shall be provided with factory-installed UL Listed flammable refrigerant gas detection approved for A2L refrigerants.

    b. We shall supply and install refrigerant release mitigation measures for refrigerant piping systems and all associated ceiling plenum and occupied spaces to ensure that the full refrigerant charge of the 4 ton, 5-ton and 15-ton HVAC systems cannot be released into occupied areas beyond permitted thresholds.

    d. Activation of any air handler mounted flammable gas or combustion gas detection device shall automatically:
        i. Disable mechanical cooling operation associated with the affected system, and
        ii. Close all associated refrigerant isolation valves serving that system.
        iii. A dry contact output shall be provided for alarm signaling purposes.

    b. We shall coordinate with the Derby Libraries' fire alarm contractor, for them to extend alarm wiring from the provided refrigerant monitoring system dry contact points to the building fire alarm system panel.
        i. Fire alarm panel wiring programming and final integration shall be performed by others.

15. All A2L refrigerant safety systems, controls, and interlocks shall be tested, commissioned, and documented as part of project closeout to demonstrate full compliance with IMC, NFPA, and manufacturer requirements.

R454B – A2L Refrigerant Line Set and Vertical Riser Requirements (HVAC Units 5 and 6)
Due to the historic classification of the building, the horizontal refrigerant piping for HVAC 5 and 6 may not be installed outside the building, from the ground floor up to the attic space level). The piping must be installed within the interior walls of the building, as required and approved by the AHJ.

16. In accordance with the Connecticut State Building Code, IMC, and applicable UL-listed fire-resistance assemblies, we shall:
    a. Supply and install all required floor and ceiling penetrations assemblies, to achieve a minimum one (1) hour fire-resistance rating around the vertical refrigerant piping riser.
    b. Supply and install refrigerant release mitigation measures for refrigerant piping to ensure that the full 15-ton and 5-ton system refrigerant charges cannot be released into the vertical enclosure in excess of permissible limits, in compliance with IMC and applicable NFPA standards for A2L refrigerants.

Contingency- Mechanical Ventilation for the Vertical Refrigerant Piping Enclosure:
Where refrigerant release mitigation, containment, and interlock controls are provided as specified, mechanical ventilation of the vertical refrigerant shaft is **not** anticipated to be required under the IMC as amended by the State of Connecticut. However, if the interpreted to be required by the town, the following will be added to scope:

17. Contingency: We shall supply and install a ventilation fan on the lower level to discharge out the side wall of the building.
    a. We shall install: 18" stone wall penetration, line voltage electric. ventilation fan assembly ductwork and Exhaust Grill w/ backdraft damper. Connect makeup air to existing attic ventilation grill above proposed shaft.
    o. Add Alternate Contingency: $5,700 dollars.

Air and water Balancing Testing and Commissioning:

19. We shall provide third party air and water balancing reports, as specified.

Building Automation Controls:

20. We shall supply install program commission and provide training for the 75F controls HIPERSTAT SPLIT technology system we specified **includes:**

    a. Web based graphics and control of the existing boiler, pumps, heating coil valves and combustion air fan.
    b. This system includes relative humidity and temperature setpoint ability in the HVAC sequence of operations for humidity control for each HVAC zone.
    c. The controls system sequences and devices to monitor and control temperature, humidity.
    d. The system monitors light, sound, CO2, occupancy, and particulate matter in each HVAC zone.
    e. Includes two-year data storage for 15 minute intervals building trend data of temperature, humidity, light, sound, CO2, occupancy, and particulate matter in each HVAC zone.
    f. Space sensors with override temperature setpoint capability
    g. Smart Start / Smart Stop technology based on the 24 hour weather conditions.
    h. Web accessible from any computer device
    i. The system provides electric energy usage data.
    j. Training is included
    k. See 75 F submittal for specifications.

Fire Alarm Interface:

21. We shall provide a complete and coordinated interface between all HVAC systems and the building fire alarm system as specified.
    a. We shall coordinate all work with the fire alarm contractor, participate in integrated testing, and support final inspection and acceptance of the project as specified.

Temporary Heating/Cooling:

22. Not included, as specified

Licensing, Insurance, and Bonding Requirements:

23. We shall provide Licensing, Insurance, and Bonding Requirements, **as specified.**

References:

Rick Norrie, Comprehensive Air Systems LLC, 203-710-8763, compairct@gmail.com

F. Todd Renz, President, O,R&L CONSTRUCTION CORPORATION, 203.643.1005, ftrenz@orlconstruction.com | www.orlconstruction.com

Kristin Dolan, Vice President, THEHURLEYGROUP REAL ESTATE DEVELOPMENT AND MANAGEMENT, 55 CHURCH STREET, SUITE 204 NEW HAVEN, CT 06510
PHONE: 203-848-6474 X105

Section 2- Specific Scope of Work for Each HVAC Unit:

AC Condenser 1 & AHU 1:

1. Supply and install the following equipment:
   a. One 5 Ton Trane condenser, Model: 5TTA3060A3000A R454B,
   b. New copper line set from condenser to ground floor mechanical room AHU.
   c. One 5 Ton Magic Air, Model: BMB20AWAAH2AGB1L5BAAM air handler unit.

HC 1 and HC 2 Removal and Replacement. as specified:

2. We shall protect the front area of the reference desk (Approx. 6 feet x 20 feet) to accommodate temporary removal of the drop ceiling grid.
   a. Demolish and remove the two existing heating coils and associated three-way control valves.
   b. Install new HC 1 and HC 2 duct mounted heating coils and new three-way control vales. Hot water coils to match the existing BTUs and airflow.
      - HC 1: 107 MBH cap
      - HC 2: 70 MBH cap
   c. Extend heating valve control wiring to two new zone space sensors.
   d. Reinstall ceiling grid and tiles.
   e. Included on Base price.

HC 1 and HC 2 Coil Face Cleaning Alternate - Deduct Form Base Price:

3. In order to avoid significant disruption to the circulation desk area, we recommend cleaning the coil fins within the ductwork and flushing of the existing coil water piping.
   a. Base Price Deduct in leu of coil replacement: $25,786.00

AC Condenser 2 & AHU 2 - AC Condenser 3 & AHU 3:

4. Supply and install the following equipment:
   a. Two 4 Ton Trane condenser, Model: 5TTA3048A3000A R454B
   b. New copper line sets from condensers to mechanical room AHUs 2 & 3.
   c. Two hot water coils to match existing heating capacity:
      - AHU 2 coil: 106 MBU / 2 row/ 8 gpm / 180 EWT
   d. Two 4 Ton Magic Air, Model: BMB16AWAAH4AG6BL3BABAAM Air handler.
   e. Two hot water coils to match existing heating capacity:
      - AHU 3 coil: 148 MBU / 4 row / 10 gpm / 180 EWT

AC Condenser 4 & AHU 4:

In order to complete the demolition of existing units and install new air handler, temporary removal of the ceiling grid and relocation of book shelving is required.

5. Supply and install the following equipment:
   a. One 5 Ton Trane condensers, Model: STTA3048A3000A
   b. New copper line set from outdoor condenser to air handler in the ceiling above the children's library.
   c. One 5 Ton Magic Air, Model: BMB20AWAAH2AG8CL4ABADCM air handler.
   d. One hot water coil: 106 MBU / 2 row/ 8 gpm / 180 EWT

AC Condenser 5 & AHU 5 and AC Condenser 6 & AHU 6:

Air Handler Unit 5 (5 Ton cooling capacity) and Air Handler Unit 6 (15 ton cooling capacity) have very restricted access in the attic space. In order to complete the HVAC unit replacement, as specified, significant temporary removal and reconstruction of the buildings ceilings and temporary removal of one sprinkler head, and line voltage wiring in this area, is required.

6. We shall supply and install the following Equipment.
   1. One 15 Ton Trane condensers, Model: TTA180K3DAAEO2Q
   2. One 15 Ton Magic Air, Model: BMB60KYAAH2AGB4GL6BABAAM air handler complete air handler unit.
   3. One AHU 6 hot water coil: 288 MBU / 3 row / 10 gpm / 180 EWT
   4. One 5 Ton Trane condensers, Model: 5TTA3060A3000A
   5. One 5 Ton Magic Air, Model: BMB20AWAAH2AGBDL4ABAAM air handler complete air handler unit
   6. One AHU 5 hot water coil: 106 MBU / 2 row/ 8 gpm / 180 EWT

The following approach significantly reduces the disruption and cost of removing, cutting and patching the exiting building materials and refrigerant piping pathway for AC 5 and 6.

7. We shall supply and install new copper line set piping and one hour fire rated enclosure for the vertical riser from the outdoor condensers ground floor level to the top of the second floor space.
   a. The location of the new vertical piping riser has been selected on the inside of the perimeter wall next to the steel vertical support beam.
   b. Both the 15ton and 5 ton refrigerant line sets will be in the same fire rated enclosure.
   c. The horizontal refrigerant piping will be installed Including A2L mitigation release controls from the perimeter wall back to the attic space patrician wall.

8. Attic space access:
    1. We identified the equipment access / rigging location to be in the hallway near bathrooms - on the site of the catwalk – opposite the ladder access. Cutting and patching / ceiling grid work required to accommodate the rigging of the equipment to the catwalk in the attic is required
    a. We will remove and replace the ductwork adjacent to the catwalk.
    b. Relocate electric power wiring.
    c. Temporary relocate one sprinkler pipe.
    d. Rebuild the plaster ceiling and walls affected by the installation of the HVAC equipment, as needed.

Exclusions and Clarifications:

1. System components that exist, in good condition, to remain and be extended to the new AC units.
    a. HVAC Electric circuit breakers.
    b. Duct mounted smoke detectors will remain.
    c. The outdoor condenser unit outdoor line voltage feeders – shall be fitted with new disconnect boxes to be mounted on each condenser. The existing seal tight jackets will be replaced, if found in poor condition.
2. Any and all work required to rectify pre-existing building conditions (beyond the scope of this project) that need to be addressed in order to pass the final inspections to close out project, is not included. Any required solutions will be addressed and quoted separately.
3. It is assumed the core drilling of the floor building materials will not require remediation. Asbestos testing and abatement, if required, is not included.
4. Temporary HVAC – cooling and heating is excluded.
5. Painting color to best match existing walls as closely as possible- painting of the new installed materials only. Paining the entire room is excluded.
6. This project is tax exempt – no tax is carried in the budget.
7. This project is priced for Prevailing Wage.
8. Working after hours (7:00 am to 5:00 pm Monday thru Friday weekend and overtime, if required, will be billed separately.
9. Roof penetrations and flashings are not included.
10. Structural or dunnage steel is not included.
11. All electrical equipment not listed in this proposal.
12. Stamped mechanical Engineering drawings.
13. No repairs, modifications or service to any existing HVAC equipment, mechanical, hot water boiler system, pumps elevator systems, reheat boxes, stand-alone unit heaters, ductwork or piping unless specifically mentioned above.

Construction Workflow and Estimated Installation Schedule:

1. Outdoor Condenser 1, through 6 Replacement and Mechanical Room AHUs 1, 2, 3 Removal and Replacement and AHU 1 Duct Mounted Coils HC1 & HC 2 replacement:
   a. Four Weeks
2. AHU 4 - Children's Library Replacement and Refrigerant Piping:
   a. Two weeks
3. AHU 5 and 6 Replacement with New Refrigerant Piping:
   a. Five weeks
4. Final inspections and project close out:
   a. Two weeks

Project Budgets:

BASE PROJECT SCOPE:	
TOTAL PREVAILING WAGE LABOR COST:	$344,424
SUB CONTRACTOR WORK	$120,484
MATERIAL COST TOTAL:	$258,912
TOTAL INSTALLATION COST:	$723,820
PERFORMANCE BOND:	$15,861
TAX:	NONE
PROJECT TOTAL:	**$739,683**

Base Scope Refrigerant Piping Alternate: Install HVAC 5 and 6 refrigerant piping outside the building from ground floor to roof level - Cover with rain gutter leader pipe.	
TOTAL INSTALLATION COST:	$678,936
PERFORMANCE BOND:	$15,184
PROJECT TOTAL:	**$694,120**

ALTERNATE SCOPE:	
Base project alternate **credit** for duct cleaning H1 & H2 Coils in leu of Coil replacement	$23,786
Contingency- Mechanical Ventilation for the Vertical Refrigerant Piping Enclosure	$5,700

Thank you for the opportunity to quote this project. If you have any questions, please contact us.

Please note that pricing is only valid for 30 days. Signed proposals returned after 30 days will be updated due to continuous price increases and shortages in the current manufacturing climate. Price changes will reflect only the manufacturer-imposed increases. Additionally, any timelines provided are estimated. We will do our best to provide timing for installation but our suppliers no longer offer guaranteed delivery dates or express shipping. Please contact us with any questions.

TERMS AND CONDITIONS

DEFINITIONS: For purposes of this Agreement terms shall have the following meanings:

(a) Contractor: Controlled Air, Inc.
(b) Owner: the purchaser named in this Agreement.
(c) System: the air conditioning equipment, heating equipment, and/or temperature controls to be installed by the Contractor under this Agreement.
(d) Component: either the air conditioning equipment or the heating equipment to be installed under this Agreement, if both types of equipment are to be so installed.
(e) Use Commencement Date: as to an entire System, the date when the System or any Component of the System is first turned on for operation for any reason.
(f) Warranty Period: a period of one (1) year beginning on the Use Commencement Date.

PAYMENT OF PURCHASE PRICE: The purchase price set forth in this Agreement shall be payable to the Contractor by certified check, bank check, money order, or other form acceptable to the Contractor, as follows:
Monthly Requisitions: 100% Payment: Net 30 Days

Upon failure of the Owner to pay any installment when due, the Contractor shall have the option (without prejudice to any other rights of the Contractor hereunder) to suspend its performance of this Agreement until it has received all installments then due and owing.

Contractor shall have no obligation to execute all full or partial waiver of any lien rights it may have to secure payment hereunder unless and until payment of the full contract price (including any agreed extras) has been made.

Upon Owner's default in any payment hereunder for a period of thirty (30) days after the same is due, Owner shall be obligated to pay the Contractor interest at the rate of twelve (12%) percent per annum on any unpaid balance. If suit is brought to collect any amount due to the Contractor under this Agreement, the Contractor shall be entitled to collect all reasonable costs and expenses of suit, including reasonable attorney's fees.

TIME FOR PERFORMANCE: The Contractor will use its best efforts to complete the project within the time set forth in this Agreement, but will not be liable for delay or failure to perform due to accidents, natural disasters, fire or casualty, strikes, war, civil commotion, act of God, or other causes beyond its control. In no event shall the Contractor be liable for consequential damages arising from a breach of this Agreement.

LIMITED WARRANTY: Subject to the exclusions described below, the Contractor warrants that the System will be free from defects in materials or workmanship during the Warranty Period. In the event of a defect covered by the Warranty, the Contractor will provide at no cost to the Owner the parts and labor reasonably required to eliminate or repair the defect, so as to place the System in good operating condition. Preventive maintenance items such as belts and filters are not provided by the warranty.

However, this Warranty shall not extend to or cover defects caused or aggravated, in whole or in part, by any of the following: misuse or abuse of the System; failure of the Owner to notify the Contractor promptly in the event of a malfunction or other evidence of a defect; power surges; freezing pipes; weather related conditions; fire or other casualty; natural disasters; or acts of God.

This Warranty shall be void and of no further effect if at any time, without the prior written authorization of the Contractor, any person other than the Contractor makes or attempts any repair or modification of any portion of the System.

The warranty set forth herein shall be in lieu of all other warranties, expressed or implied, including any otherwise applicable warranty of merchantability or fitness for a particular purpose.

Any modifications or addendums to these terms or contract must be initialed and approved by a Controlled Air, Inc. representative.

REMITTANCE ADDRESS FOR PAYMENTS:
Controlled Air, Dept 000305, PO Box 2200, Hartford, CT 06145-2200

CONTRACT ACCEPTANCE:

We both acknowledge that this proposal contains our entire agreement.

Acceptance:

Company: _____

Print Name: _____

Title: _____

Date: _____

Acceptance
Signature:_____

Our Acceptance:

Date: 4/25/2026

EQUIPMENT SITE: Derby Public Library – RFQ 2

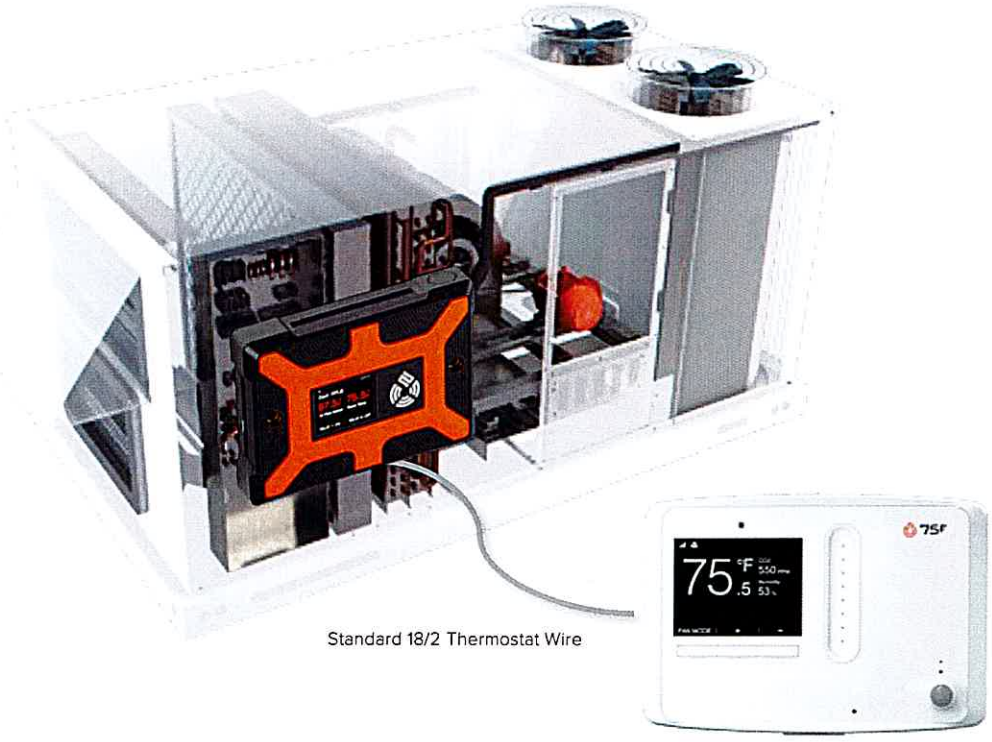
CONTRACT AMOUNT: **$$739,683** INCLUDES ANY APPLICABLE TAX

PLEASE SIGN AND DATE ABOVE.
RETURN A FULL COPY OF THIS DOCUMENT.

SPEC SHEET

75F® HyperStat Split

Advanced Rooftop Controls Over Two Wires



- Dual enthalpy economizer, demand-control ventilation (DCV), and variable frequency drive (VFD) control
- (7) Onboard sensors for occupancy, temperature, light, humidity, sound, CO2 & optional particulate matter
- (8) Relays
- (4) Analog outputs
- (8) Universal Inputs
- BACnet and Modbus control

75F® HyperStat Split



The HyperStat Split empowers contractors to upgrade rooftop units with Advanced Rooftop Control with unprecedented ease, bringing energy efficiency to more buildings than ever before. Using only two existing wires from the RTU to the thermostat, the HyperStat Split provides dual enthalpy economizer, demand-control ventilation, and VFD control. An onboard PIR occupancy sensor enhances energy savings with auto away, and its hefty I/O package enables alerts like condensate overflow and dirty filters.

OVERVIEW

The HyperStat Split facilitates ARC over the existing two wires in retrofit applications using a HyperLite and a Connect Module. Both an occupant interface and a powerful indoor air quality sensing station, the HyperLite takes user input and collects data on temperature, humidity, light, sound, CO2, occupancy, and particulate matter. The Connect Module communicates with the HyperLite over two wires from the RTU or FCU and performs stage or modular control. With the ability to accept eight universal analog inputs, the back half of the Connect Module moves load control away from the zone.

KEY FEATURES

- Dual enthalpy economizer, demand-control ventilation, and VFD control for full Advanced Rooftop Controls over two wires
- Condensate overflow and dirty filter sensors with notifications for advanced alerts
- Real-time access to sensor data and remote control over building parameters through Facilisight, 75F's building intelligence suite of web and mobile apps
- Secure and proprietary encrypted 900 MHz wireless mesh network allows for lightweight, reliable communications between devices, eliminating the need to run wires throughout a space

ADDITIONAL FEATURES

- Over-the-air firmware updates
- Works over the two wires provided for the thermistor to report temperature to the RTU
- Plug-and-Play solution for Advanced Rooftop Control

EQUIPMENT CONTROL

Up to three stages of cooling/heating/fan or fully modulating:

- Rooftop Units
- Unit Heaters



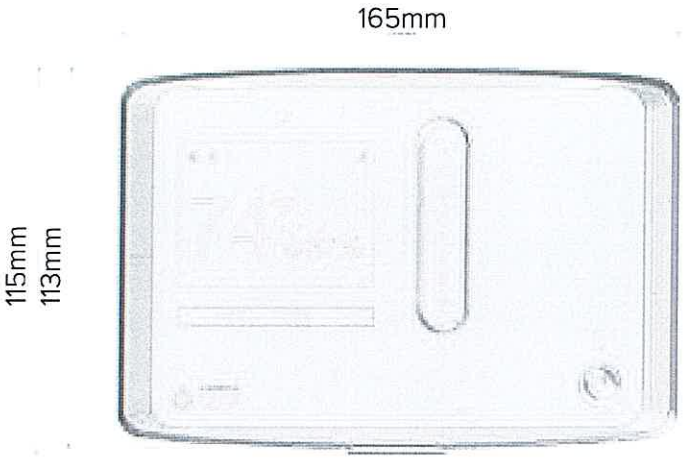
INCLUDED

(1) Each of HyperLite and Connect Module
(1) Mounting Adapter plate
(2) Mounting Screws

75F® HyperLite

MECHANICAL

Dimensions	6.5" x 4.5" x 1.15" (165mm x 115mm x 29 mm)
Mounting	(2) screws in drywall
Screen	2.8" 240x320 pixel TFT LCD
Operating Range	-4°F to 122°F (-20°C to 50°C)



SENSORS

Temperature	Operating range between -4°F to 122°F (-20°C to 50°C); typical accuracy of +/- 1°F or 0.2°C
Humidity	Operating range between 20 to 85% noncondensing; Typical accuracy of +/- 2% RH
Dedicated CO_2 Sensor	Range 0-40'000 ppm; Accuracy +/-30ppm over range of 400-10,000ppm and lifetime of 15 years
Light	Ambient light sensor; high-accuracy UV index sensor; matches erythemal curve; < 100 mix resolution
Sound	40-120dB response for 100 Hz to 10Khz
Occupancy	Passive Infra Red (PIR) with detection range of 4m with 30-degree angle

OPTIONAL SENSORS

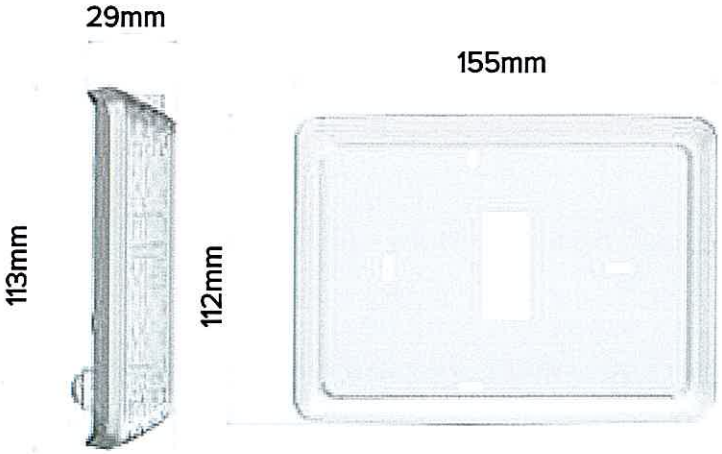
PM2.5, PM10	Detection range of 0-1000ug/m3 and accuracy of +/- 10ug/m3 (PM2.5, 0-100 ug/m3) or +/- 25ug/m3 (PM10, 0-100ug/m3)

ELECTRICAL

Power	24V AC/DC (+/-15%) with nominal power consumption 1.0W and maximum consumption of 2.5W

COMMUNICATIONS

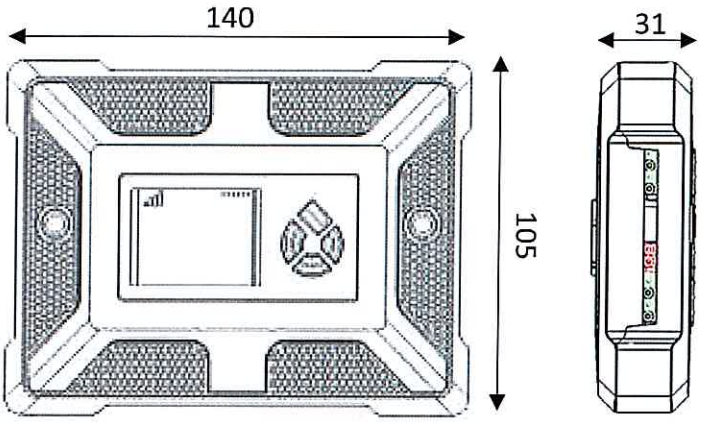
Bluetooth	BLE5.4; used during commissioning
Mesh	900 MHz IEEE 802.15.4-compliant; used for device communication on mesh network
Wired	4 wire RS-485 interface 3 wire connector for low-power sensor bus

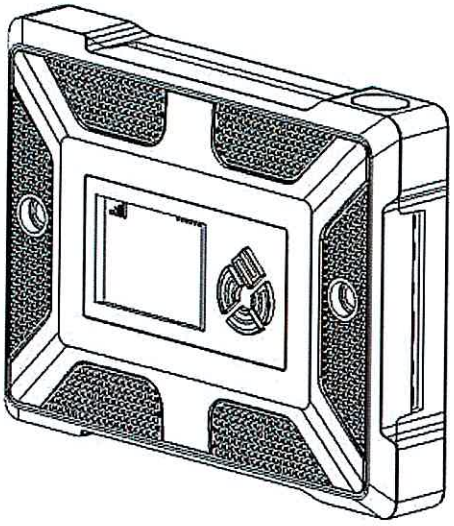


75F® Connect Module

MECHANICAL

Dimensions	5.5" x 4.13" x 1.22" (140 mm x 105 mm x 31mm)
Mounting	Wall
Screen	TFT LCD, 1.77", 128(RGB)* 160 Pixels





COMMUNICATIONS

Bluetooth	Bluetooth – Available for future use.
Wired	• Modbus RTU / BACnet over RS485 communication • Sensor bus • Power over RS485 to enable communication with the HyperLite and power the unit over standard thermostat wires. • Dedicated Modbus/BACnet MSTP ports to interface with 3rd party BMS devices.

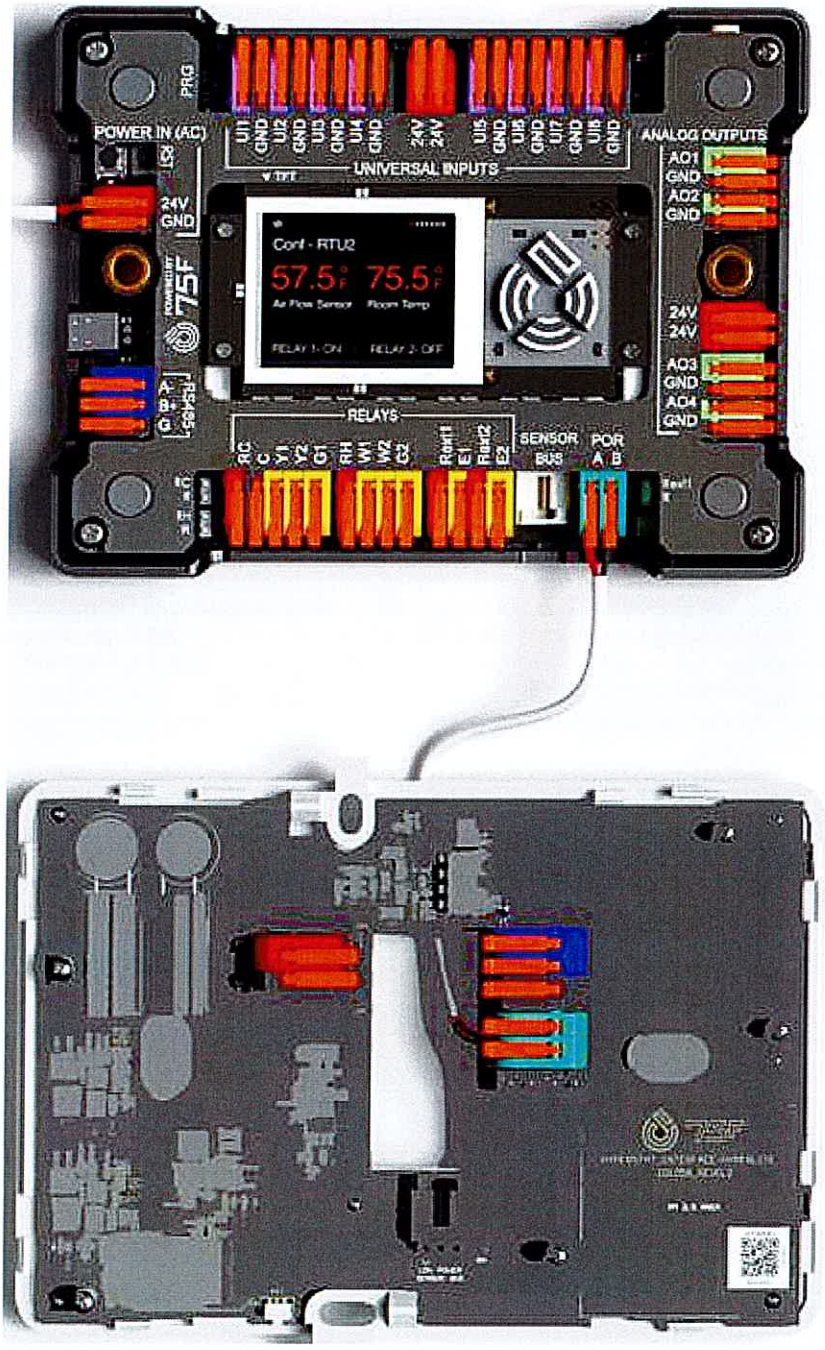
I/O

Inputs	A. (8) Universal inputs. B. (1) Sensor Bus
Outputs	C. (4) 0-10V dc or 4-20mA analog outputs D. (8) relays rated at 1A, 120V ac or 24 V ac/dc resistive load

ELECTRICAL

Power	24V AC/DC (+/-15%) with nominal power consumption 1.0W and maximum consumption of 2.5W

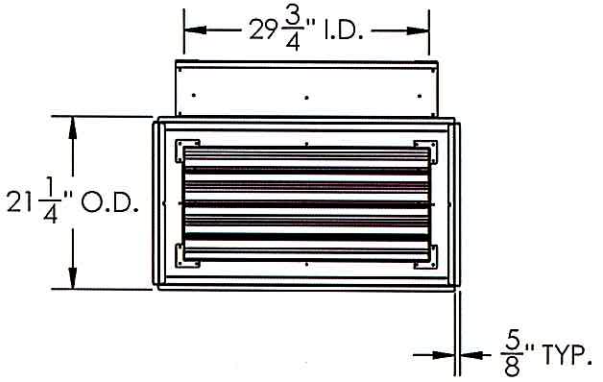
75F® HyperStat Split

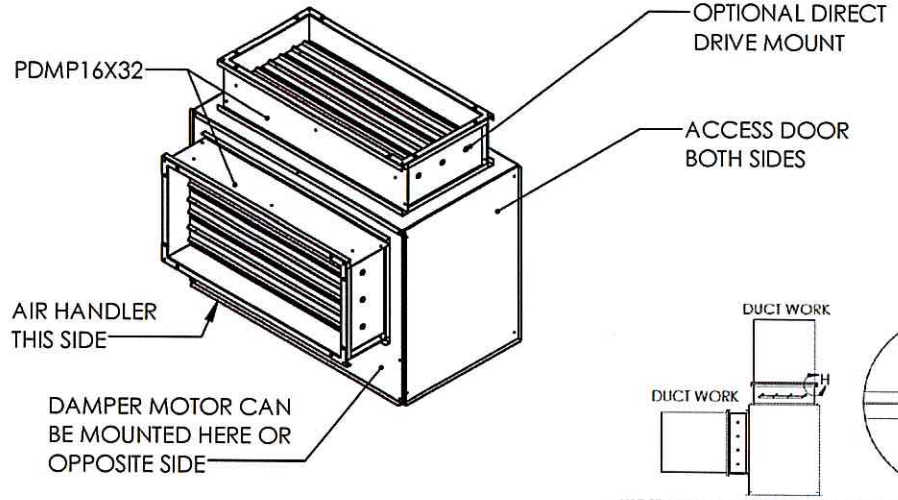


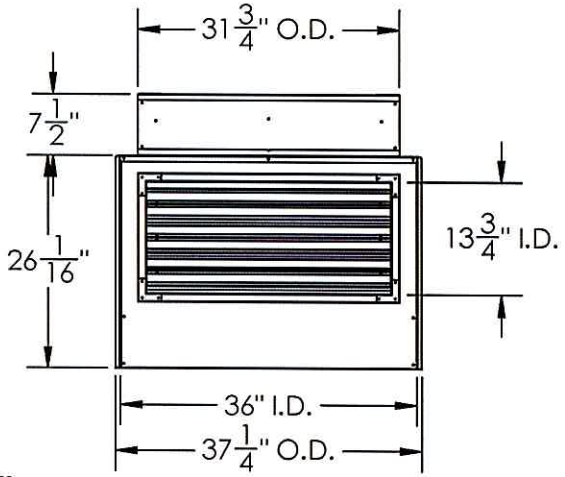
STANDARD MIXING BOX, INSULATED, FITS 20" W X 36" D

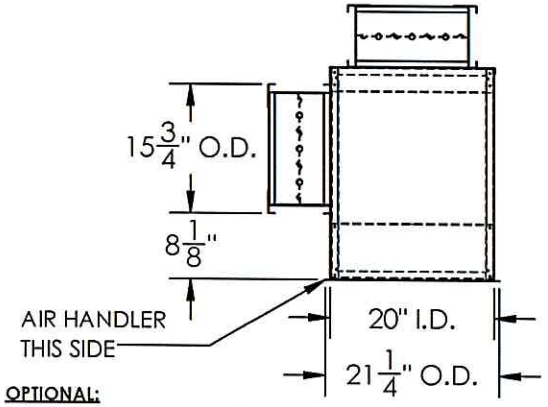
REVISION				
NO.	DESCRIPTION	DATE	APPROVED	
			CHK	ENG

TOTAL WEIGHT: 97 LBS

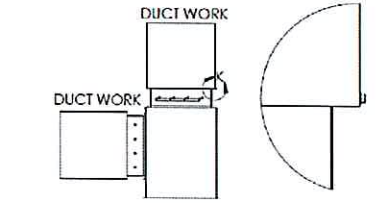








- USE TEK SCREWS NO LONGER THAN 3/4"
- ATTACH DUCT WORK TO THE **TOP FLANGE**



- USE TEK SCREWS NO LONGER THAN 3/4"
- ATTACH DUCT WORK TO THE **SIDE FLANGE**

FEATURES:

1. 20 GA GALVANIZED STEEL
2. FULLY INSULATED WITH 1" 1.5 PCF INSULATION
3. PARALLEL BLADE DAMPERS WITH BRONZE BUSHINGS
4. DAMPER LINKAGE AND HARDWARE
5. SHIPPED FULLY ASSEMBLED
6. ACCESS DOOR BOTH SIDES

OPTIONAL:

1. ECONOMIZER CONTROL SYSTEMS
2. LOW LEAK DAMPERS
3. OPTIONAL DIRECT DRIVE MOUNT
4. FILTER RAIL

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS SHOWN ARE IN INCHES [MILLIMETERS] MILLIMETERS ARE REFERENCE ONLY	APPROVALS	DATE
UNLESS OTHERWISE SPECIFIED TOLERANCES ON:	DR: MDC	11/3/2023
X.X [X.X] ±.1 [X.XX] ±.25 ANGLES ±1°	CHK'D	
THIRD ANGLE	APP'D	
MATERIAL	ELEC ENG'R	
	MECH ENG'R	

Plenums of Florida Incorporated

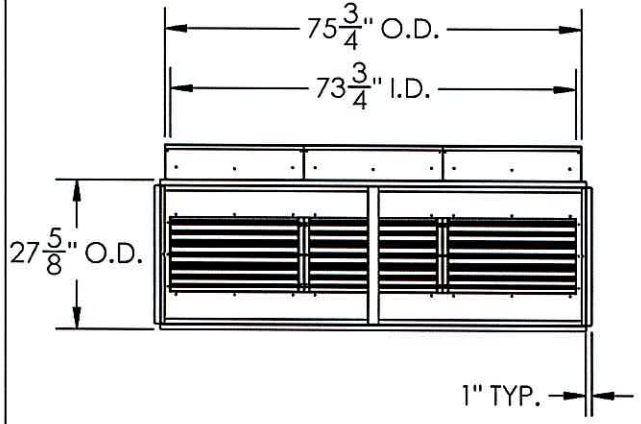
TMB60S1

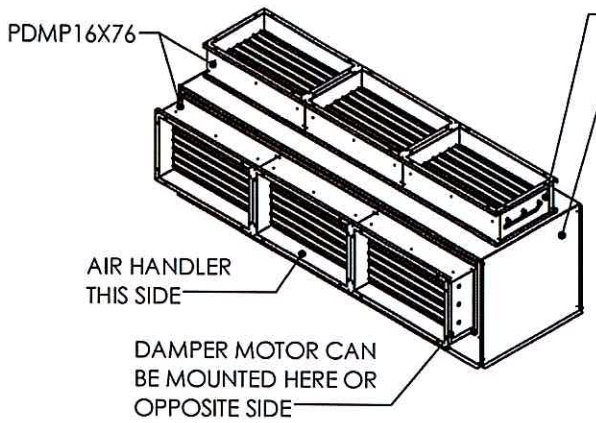
DWG NO. A	11/3/2023	REV
SCALE 1:12	SHEET 1 OF 1	

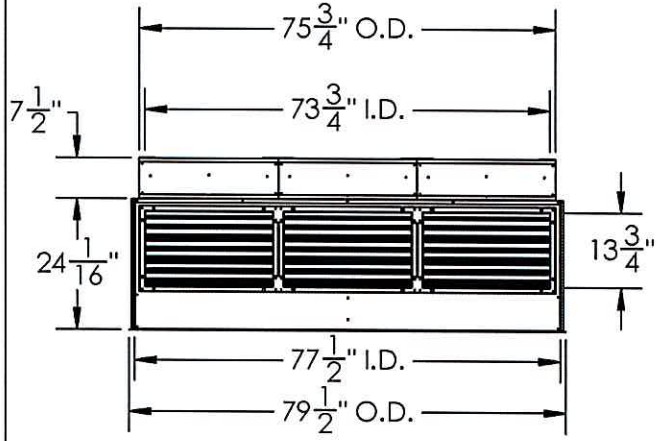
STANDARD MIXING BOX, INSULATED, FITS 27 5/8" W X 79 1/2" D

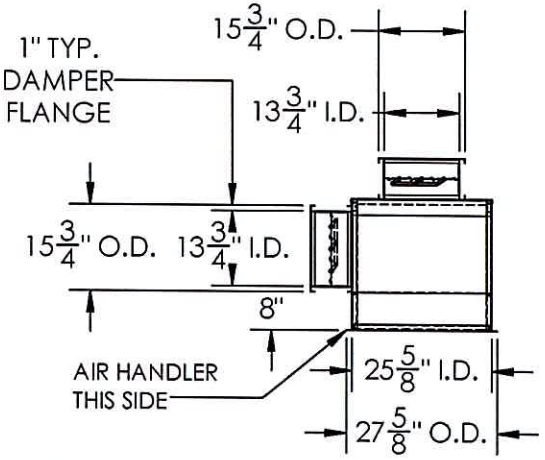
TOTAL WEIGHT: 234 LBS

REVISION				
ES	DESCRIPTION	DATE	APPROVED CHK	ENG

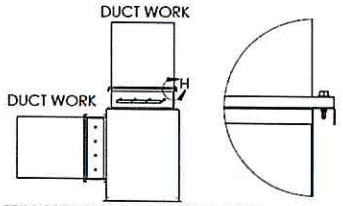






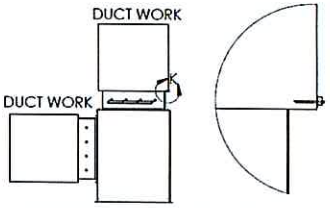


OPTION 1



- USE TEK SCREWS NO LONGER THAN 3/4"
- ATTACH DUCT WORK TO THE **TOP FLANGE**

OPTION 2



- USE TEK SCREWS NO LONGER THAN 3/4"
- ATTACH DUCT WORK TO THE **SIDE FLANGE**

FEATURES:

1. 18 GA GALVANIZED STEEL
2. FULLY INSULATED WITH 1" 1.5 PCF INSULATION
3. PARALLEL BLADE DAMPERS WITH BRONZE BUSHINGS
4. DAMPER LINKAGE AND HARDWARE
5. SHIPPED FULLY ASSEMBLED
6. ACCESS DOOR BOTH SIDES

OPTIONAL:

1. ECONOMIZER CONTROL SYSTEMS
2. LOW LEAK DAMPERS
   - A. LOW LEAK BOTH DAMPERS "LL"
   - B. LOW LEAK TOP OR BOTTOM "LT"
   - C. LOW LEAK BACK DAMPER "LB"
3. OPTIONAL DIRECT DRIVE MOUNT
4. FILTER RAIL

APPROVALS	DATE
DRN RO	4/12/2021
CHKR	
SUPV	
ELEC ENGR	
MECH ENGR	

Plenums of Florida Incorporated

TMB180S

DWG NO A | 4/12/2021 | ES

SCALE 1:12 | SHEET 1 OF 1

Equipment Details

Derby Lib..mtj

Qty: 1 Tag: ahu-1 Model Code: BMB20AWAAH2AGB1L5BABAAM

Field	Code	Description	Weight
Unit Type	BMB	BM (Belt Drive - Modular, Generation: B)	0
Cabinet Size	20	2000 CFM Basic Unit (5 Ton) .	207
Discharge Air Arrangement	A	Blower - Vertical / Coil - Upflow .	0
Cooling Coil	W	Std Capacity (4-Row) R-454B DX Coil (6T TXV, heat pump ready)	31
Coil Treatment	A	No Coil Treatment	0
TXV/Nozzle	A	6-Ton Nominal TXV (standard)	0
Heating Coil	H2	2 Row Hot Water Coil .	26
Coil Configuration	A	Pre-Heat - Right Hand Cooling Connections - Right Hand Heating Connections .	0
Unit Voltage	G	208/240V Three Phase Electrical .	0
Nominal CFM	B	2500 CFM Nominal .	0
Total Static Pressure (TSP)	1	TSP Range 1 (0.20 - 0.30) .	0
Motor	L5	ODP, NEMA Prem 208-230/460/3 Inverter Rdy (2 HP)	65
Filter Type	B	2" Pleated Filter (MERV 8)	0
Insulation Type	A	Standard - Fiberglass	0
Motor Starter Option	B	Motor Start/Stop Station and Refrigerant Detection System (RDS) for A2L DX Coil	17
Drain Pan Option	A	Galvanized Steel Drain Pan	0
Tracking	M	Magic Aire 12-12-2025	0
Accessories	Acc	No Additional Optional Accessories	0
		Totals:	346

Equipment Details

Derby Lib..mtj

Qty: 1 Tag: ahu-2 Model Code: BMB16AWAAH2AGBEL4BABAAM

Field	Code	Description	Weight
Unit Type	BMB	BM (Belt Drive - Modular, Generation: B)	0
Cabinet Size	16	1600 CFM Basic Unit (4 Ton) .	207
Discharge Air Arrangement	A	Blower - Vertical / Coil - Upflow .	0
Cooling Coil	W	Standard Capacity R-454B DX Coil (4T TXV, heat pump ready)	26
Coil Treatment	A	No Coil Treatment	0
TXV/Nozzle	A	4.5-Ton Nominal TXV (standard)	0
Heating Coil	H2	2 Row Hot Water Coil .	20
Coil Configuration	A	Pre-Heat - Right Hand Cooling Connections - Right Hand Heating Connections .	0
Unit Voltage	G	208/240V Three Phase Electrical .	0
Nominal CFM	B	2000 CFM Nominal .	0
Total Static Pressure (TSP)	E	TSP Range 14 (1.51 - 1.60) .	0
Motor	L4	ODP, NEMA Prem 208-230/460/3 Inverter Rdy (1.5HP)	54
Filter Type	B	2" Pleated Filter (MERV 8)	0
Insulation Type	A	Standard - Fiberglass	0
Motor Starter Option	B	Motor Start/Stop Station and Refrigerant Detection System (RDS) for A2L DX Coil	17
Drain Pan Option	A	Galvanized Steel Drain Pan	0
	A		0
Tracking	M	Magic Aire 12-12-2025	0
Accessories	Acc	No Additional Optional Accessories	0
		Totals:	324

Equipment Details

Derby Lib..mtj

Qty: 1 Tag: ahu-3 Model Code: BMB16AWAAH4AG6BL3BABAAM

Field	Code	Description	Weight
Unit Type	BMB	BM (Belt Drive - Modular, Generation: B)	0
Cabinet Size	16	1600 CFM Basic Unit (4 Ton) .	207
Discharge Air Arrangement	A	Blower - Vertical / Coil - Upflow .	0
Cooling Coil	W	Standard Capacity R-454B DX Coil (4T TXV, heat pump ready)	26
Coil Treatment	A	No Coil Treatment	0
TXV/Nozzle	A	4.5-Ton Nominal TXV (standard)	0
Heating Coil	H4	4 Row Hot Water Coil .	41
Coil Configuration	A	Pre-Heat - Right Hand Cooling Connections - Right Hand Heating Connections .	0
Unit Voltage	G	208/240V Three Phase Electrical .	0
Nominal CFM	6	1600 CFM Nominal .	0
Total Static Pressure (TSP)	B	TSP Range 11 (1.21 - 1.30) .	0
Motor	L3	ODP, NEMA Prem 208-230/460/3 Inverter Rdy (1 HP)	41
Filter Type	B	2" Pleated Filter (MERV 8)	0
Insulation Type	A	Standard - Fiberglass	0
Motor Starter Option	B	Motor Start/Stop Station and Refrigerant Detection System (RDS) for A2L DX Coil	17
Drain Pan Option	A	Galvanized Steel Drain Pan	0
	A		0
Tracking	M	Magic Aire 12-12-2025	0
Accessories	Acc	No Additional Optional Accessories	0
		Totals:	332

Equipment Details

Derby Lib..mtj

Qty: 1 Tag: AHU-4 Model Code: HBB20AWAAH2AG8CL4BADACM

Field	Code	Description	Weight
Unit Type	HBB	HB (Belt Drive - Horizontal, Generation: B)	0
Cabinet Size	20	2000 CFM Basic Unit	192
	A		0
Primary Coil	W	Standard Capacity DX/R-454B Coil (6T TXV, heat pump ready)	62
Coil Treatment	A	No Coil Treatment	0
TXV/Nozzle	A	6-Ton Nominal TXV (standard)	0
Secondary Coil	H2	2 Row HW	31
Coil Configuration	A	Pre-Heat, Right Hand (Cooling & Heating Coil)	0
Unit Voltage	G	208/240V Three Phase Electrical	0
Nominal CFM	8	2200 CFM Nominal	0
Total Static Pressure (TSP)	C	TSP Range 12 (1.31 - 1.40)	0
Motor	L4	ODP, NEMA Prem 208-230/460/3 Inverter Rdy (1.5HP)	54
Filter Type	B	2" Pleated Filter (MERV 8)	0
Insulation Type	A	Standard IAQ	0
Motor Starter Option	D	Motor Start/Stop Station, Refrigerant Detection System (RDS) (not for use w/BHGP)	15
Drain Pan Option	A	Plastic Drain Pan	0
Minor Revision	C	HB Minor Revision (04-80)	0
Tracking	M	Magic Aire 12-12-2025	0
Accessories	Acc	No Additional Optional Accessories	0
		Totals:	354

Equipment Details

Qty: 1 Tag: ahu-5 Model Code: BMB20AWAAH2AGBDL4BABAAM

Field	Code	Description	Weight
Unit Type	BMB	BM (Belt Drive - Modular, Generation: B)	0
Cabinet Size	20	2000 CFM Basic Unit (5 Ton) .	207
Discharge Air Arrangement	A	Blower - Vertical / Coil - Upflow .	0
Cooling Coil	W	Std Capacity (4-Row) R-454B DX Coil (6T TXV, heat pump ready)	31
Coil Treatment	A	No Coil Treatment	0
TXV/Nozzle	A	6-Ton Nominal TXV (standard)	0
Heating Coil	H2	2 Row Hot Water Coil .	26
Coil Configuration	A	Pre-Heat - Right Hand Cooling Connections - Right Hand Heating Connections .	0
Unit Voltage	G	208/240V Three Phase Electrical .	0
Nominal CFM	B	2500 CFM Nominal .	0
Total Static Pressure (TSP)	D	TSP Range 13 (1.41 - 1.50) .	0
Motor	L4	ODP, NEMA Prem 208-230/460/3 Inverter Rdy (1.5HP)	54
Filter Type	B	2" Pleated Filter (MERV 8)	0
Insulation Type	A	Standard - Fiberglass	0
Motor Starter Option	B	Motor Start/Stop Station and Refrigerant Detection System (RDS) for A2L DX Coil	17
Drain Pan Option	A	Galvanized Steel Drain Pan	0
	A		0
Tracking	M	Magic Aire 12-12-2025	0
Accessories	Acc	No Additional Optional Accessories	0
		Totals:	335

Standard Magic Aire design and construction unless noted otherwise. Must include copy of this quote with order.
Prices Subject to change without notice 30 days after date on this quote.
Reference Magic Aire Terms and Conditions.

Equipment Details

Derby Lib..mtj

Qty: 1 Tag: AHU-6 Model Code: BMB60KYAAH2AG4GL6BABAAM

Field	Code	Description	Weight
Unit Type	BMB	BM (Belt Drive - Modular, Generation: B)	0
Cabinet Size	60	6000 CFM Basic Unit (15 Ton) .	495
Discharge Air Arrangement	K	Blower - Horizontal / Coil - Horizontal .	0
Cooling Coil	Y	Std Capacity (4-Row) R-454B DX Coil - Dual Circuit, 50/50 Face Split (2ea x 7T TXV, Use Field HPK's for heat pump operation)	80
Coil Treatment	A	No Coil Treatment	0
TXV/Nozzle	A	2ea x 7-Ton Nominal TXV	0
Heating Coil	H2	2 Row Hot Water Coil .	59
Coil Configuration	A	Pre-Heat - Right Hand Cooling Connections - Right Hand Heating Connections .	0
Unit Voltage	G	208/240V Three Phase Electrical .	0
Nominal CFM	4	5600 CFM Nominal .	0
Total Static Pressure (TSP)	G	TSP Range 16 (1.71 - 1.80) .	0
Motor	L6	ODP, NEMA Prem 208-230/460/3 Inverter Rdy (3 HP)	93
Filter Type	B	2" Pleated Filter (MERV 8)	0
Insulation Type	A	Standard - Fiberglass	0
Motor Starter Option	B	Motor Start/Stop Station and Refrigerant Detection System (RDS) for A2L DX Coil	17
Drain Pan Option	A	Galvanized Steel Drain Pan	0
	A		0
Tracking	M	Magic Aire 12-12-2025	0
Accessories	Acc	No Additional Optional Accessories	0
		Totals:	744

Their wiring will be similar to the attached.

INTERCONNECT WITH COMPRESSOR: The installer must wire the NO and COM terminals to the compressor start signal in series with any other safety devices such as the LLR or condensate switch if provided .

SEQUENCE OF OPERATION:

1. When the gas concentration of the refrigerant exceeds the threshold level allowed, the leak mitigation board will disable power to the thermostat and the fan override will activate. Ensure compressor and electric heat operation if equipped is interfaced through the thermostat using the provid[1]ed unit controls terminal block.
2. Normal unit operation shall resume when the gas concentration is below the threshold value for 5 minutes and the mitigation board closes the compressor contactor.
3. See Fault Table Below for Status LED Indications.

SERVICE:

If the refrigerant sensor has a fault, is at the end of its life, or is disconnected, the unit will initiate the mitigation actions. Mitigation actions may be verified by

disconnecting the sensor. The refrigerant sensors do not need service. Use only manufacturer-approved sensors when replacement is required

FAULT CODE	
Status LED	**Mode**
Off	Normal Operation
On	Sensor "warm up"
1-blink	LFL Fault
2-blink	Communication Fault

Thanks,

Ty Healer

Application Engineer

Magic Aire

(940)397-2100

From: James Mach <james@ranovia.com>
Sent: Monday, April 13, 2026 9:40 AM
To: techsupport <techsupport@magicaire.com>
Subject: Re: Refrigerant Detection system

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Ty,

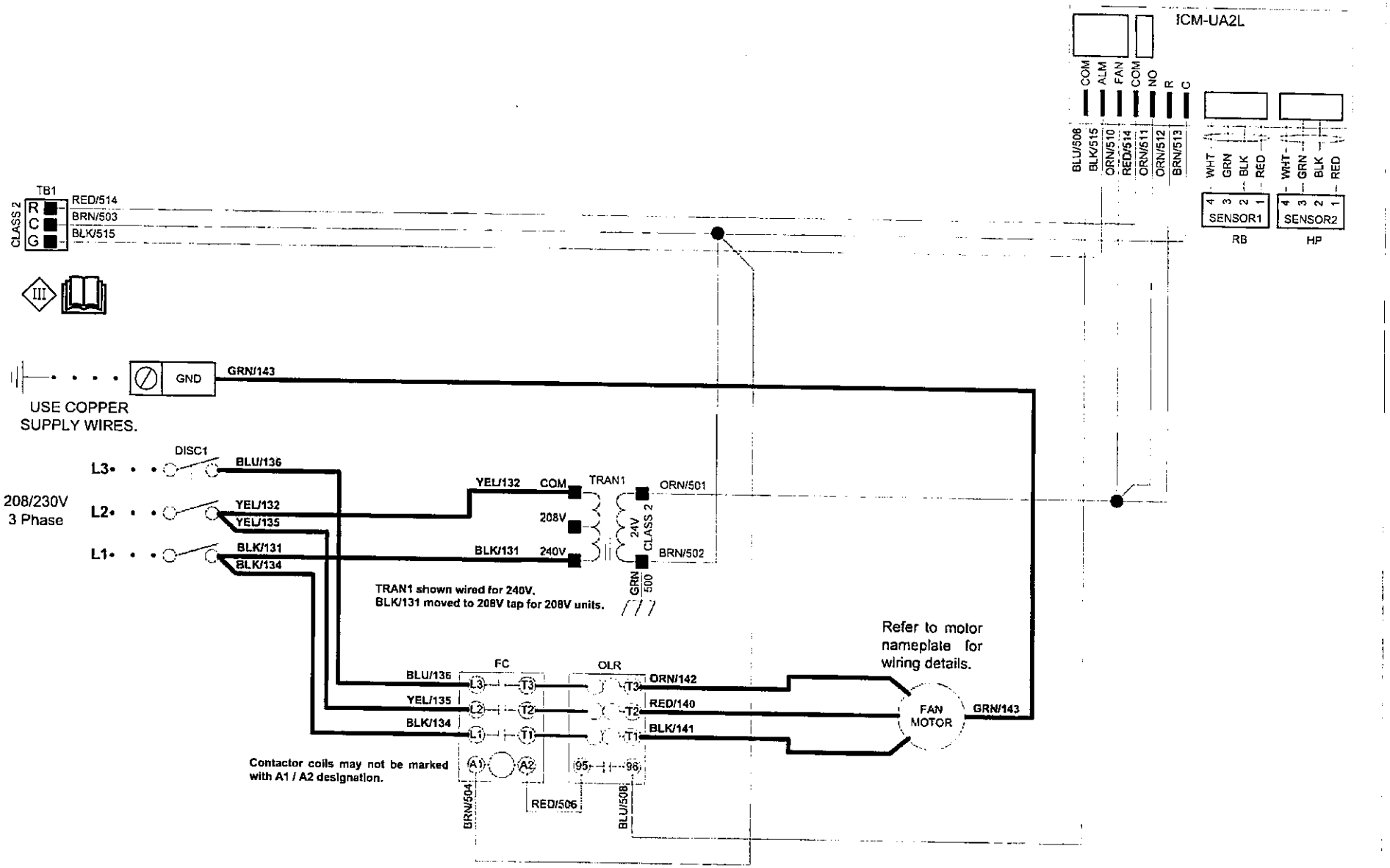
See attached. Jus looked and it is in New Magic under Derby Lib.

On Mon, Apr 13, 2026 at 10:14 AM techsupport <techsupport@magicaire.com> wrote:

James,

When I search Derby nothing pops up. Please send a code string you are referencing.

Thanks,



REV. NO.
DATE
BY
DESC

>>-	HARNESS CONNECTION	DISC	DISCONNECT
●	SPLICE	CNS	CONDENSATE SW
■	CONNECTION POINT	CRS	CURRENT SWITCH
X	INSULATED WIRE	FC	FAN CONTACTOR
——	FACTORY WIRING	FR	FAN RELAY
·····	OPTIONAL WIRING	OLR	OVERLOAD RELAY
	WIRES BY OTHERS	TRAN	TRANSFORMER
⏚	CHASSIS GROUND	TB	TERMINAL BLOCK
⏚	EARTH GROUND	TDR	TIME DELAY RELAY

TITLE	208/230V-3 PHASE MOTOR START STOP STATION (STARTER), RDS		
DRAWN BY	CHECKED BY	DRAWING NO.	
RM	PL		
DATE	DATE	053-001783	REV 1
12/08/2025	12/08/2025		

HVAC Guide Specifications

Fan Coil Unit
Modular Cabinet Model, Ducted

HVAC Guide Specifications
Size Range: **800 to 8000 Nominal CFM**
MagicAire Model Number: **BM**

Part 1 — General
1.01 SYSTEM DESCRIPTION
Horizontal, 2-pipe or 4-pipe, belt-driven fan coil unit. External parts are to be made with polyurethane based powder coated galvanealed, while internal parts are to be built from heavy gauge galvanized steel casing model fan coil unit for ducted installation above the ceiling, with full access to internal components.

1.02 QUALITY ASSURANCE
Each coil shall be factory tested for leakage at minimum of 450 psig air pressure with coil submerged in water. Insulation and adhesive shall meet NFPA-90A requirements for flame spread and smoke generation.

1.03 DELIVERY, STORAGE AND HANDLING
Unit shall be handled and stored in accordance with the manufacturer's instructions.

Part 2 — Products
2.01 EQUIPMENT
A. General:
Factory-assembled, horizontal return air, modular discharge air, draw-thru type fan coil unit suitable for ducted installation above the ceiling or exposed. Unit shall be complete with water, DX or steam coil(s); fan(s); motor; belt drive; drain pan; and filters. 8 rows of coil total, maximum.

(Optional) Horizontal configuration for sizes 16-80.

B. Casing:
Construction shall be heavy gauge galvannealed steel, painted with baked on polyurethane based powder coating, colored beige, lined with 3/4-in. thick fiberglass Tufskin II® thermal/acoustical insulation. Supply and return duct connections shall be approx. one inch long. Removable side panels shall be provided for access to the fan/motor assembly. Drainpans shall have 3/4-in FPT connection. BM 16-80 drainpans shall be galvanized steel, extending under the full length and width of the coil(s). BM 08 & 12 standard drain pans are Type 304 stainless steel coated with Aquaban.

(Optional) Stainless steel drain pan for sizes BM 16-80.

C. Fans:
Belt-driven, double-width fan wheels shall have forward-curved blades and be statically and dynamically balanced. Fan drive shall consist of variable-pitch motor pulley, fixed-pitch fan pulley and V-belt. Fans and scrolls shall be of galvanized steel.

D. Coils:
Unit shall be equipped with a standard capacity (3) or (4)-row CW/HW or DX coil for installation in a 2-pipe system. Additional coils shall be provided for installation in a 4-pipe system. Water coils shall have 3/8-in. (sizes 08-20) and 1/2-in. (sizes 30-80) copper tubes with aluminum fins bonded to the tubes by mechanical expansion. Coil(s) shall have a minimum working pressure of 400 psig at 200 F. Each coil shall have sweat connections for copper tubes. Water coil(s) shall have manual air vent(s).

E. Operating Characteristics:
A single-circuit coil unit installed in a 2-pipe CW/HW system shall be capable of providing heating or cooling. DX coils are suitable for R-22 or R-410A. A two coil unit installed in a 4-pipe system shall be capable of providing sequenced heating and cooling as determined by the controls provided by others.

F. Motor(s):
Fan motors shall be open, drip-proof, single-speed, 60 Hz, 1750 rpm single or 3-phase, suitable for continuous duty at 104-deg F (40 C) in 115, 208, 230, or 277 volts (60 Hz). Three-phase motors are available in 208, 230, or 460 volts (60 Hz). Single-phase motors shall be provided with resilient mount. Three-phase 575 volt motors are by others.

G. Filters:
a. 2" throwaway filter(s) shall be installed in the unit.

b. (Optional) 2" pleated filter(s), MERV-7, shall be installed as indicated on the equipment schedule.

H. Insulation:
a. Units shall be equipped with 3/4-in thick, 1.5-lbs/ft³ Tufskin II®

b. (Optional) Units shall be equipped with 1-in. thick, 1.5-lbs/ft³, Exact-O-Kote® IAQ insulation.

c. (Optional) 3/4" closed cell insulation.

I. Coil Options:
a. Unit shall be equipped with a high-capacity coil for installation in a 2-pipe system.

b. For installation in a 4-pipe CW/HW system, unit shall be equipped with either a 4-row cooling/2-row hot water heating coils, or 4/4, 6/2 or 6/4 coils as required with 10 rows maximum total rows. 1-row HW coil available in sizes 08-12.

c. Unit shall be equipped with either a standard capacity DX (direct expansion) cooling coil or a high capacity (single or split face) DX cooling coil as required.

d. For installation in a 4-pipe system the unit shall be equipped with either a 3 or 4-row DX cooling/2-row heating coil or a 3 or 4/2, 3 or 4/4, 6/2 or 6/4 coils as required with 10 rows maximum total rows. (Note: Use of DX cooling with Hot water coil re-heat requires field supplied and installed heating coil low limit). 1-row HW coil available in sizes 08-12.

e. Provide High or Standard capacity steam distributing coil.

Optional Accessories:
a. Mixing Boxes shall include low leak damper assemblies constructed of steel channel frames with 18 gauge galvanized steel blades, die formed stiffeners with stops. Vinyl blade seals or equivalent to reduce leakage shall be standard. All hardware shall be zinc plated with brass pivot points and bronze oilite bearings. Shafts shall be corrosion resistant steel. Mixing box shall be fully insulated with 3/4-in. Tufskin II® insulation.

Optional - Provide actuators suitable for field mounting for (1) 3-position or (2) fully modulating control packages.

b. Units to be provided with ETL listed motor start stop station with 24v transformer, terminal strip and interlocking on-off switch with lockout/tagout capability. Motors without thermal overload will have motor starters with overload protection.

c. Provide discharge grille plenum with 4-way double deflection grille, painted with baked on polyurethane based powder coating, colored beige, lined with 3/4-in. thick fiberglass Tufskin II® thermal/acoustical insulation.

d. Provide return air grille.

e. Provide 6" leg kits.

f. Provide return air grille with baked on polyurethane based powder coating, colored beige.

6 - 25 Ton Unitary Split Systems Indoor

Unit Overview

Model	TWE180K3BAA**BD400000000000 0000000000000
AHU Tonnage	15 Ton
Refrigerant	R-454B Refrigerant
AHU Voltage	208-230/60/3
AHU Refrigeration Circuit	Dual Circuit
AHU Controls	SZVAV (not for 24V t-stat control)
Liquid Line Connection Size	0.500 in
Suction Line Connection Size	1.375 in

Note: For line lengths other than 25', please refer to the Application Guide (SS-APG008*-EN) for charge levels, oil addition and line sizes.



Matched Outdoor Unit

Matched System EER	11.2 EER
Matched System IEER	14.20 Number

Fan Information

Airflow	6300 cfm	**Supply fan motor BHP**	3.75 bhp
External Static Pressure	1.000 in H2O	**Supply fan motor RPM**	996 rpm
External plus component static pressure	1.000 in H2O	**Fan motor heat**	3.74 MBh

Cooling Information

Cooling EDB	80.00 F	**Gross sensible capacity**	158.94 MBh
Cooling EWB	67.00 F	**Latent capacity**	44.10 MBh
Summer outdoor ambient	95.00 F	**Net total capacity**	197.24 MBh
Unit Leaving Dry Bulb	57.84 F	**Net sensible capacity**	153.35 MBh
Unit Leaving Wet Bulb	57.04 F		
Gross total capacity	202.83 MBh		

Electrical Information

MCA - A.H.	19.00 A
MOP - A.H.	30.00 A
Supply Fan Motor FLA	15.10 A

Heating Information

Heat Information	
Winter EDB	70.00 F
Winter outdoor ambient DB	47.00 F

Refrigerant Information

Refrigerant	R-454B Refrigerant	**Evaporator face velocity**	403 ft/min
Liquid Line Connection Size	0.500 in	**Evaporator face area**	16.33 sq ft
Suction Line Connection Size	1.375 in	**Supply Fan Motor FLA**	15.10 A
Evaporator Rows	4		
Evaporator fin spacing	168 Per Foot		

Filter

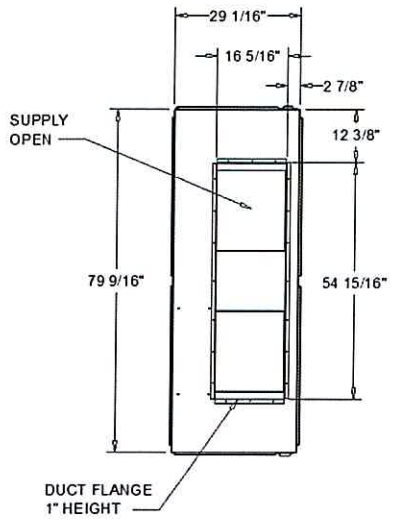
Filter	Standard 1" throwaway filters	8 - 15" x 20" x 2"

Weights

Max/Min Airhandler Operating Weight		Vertical Corner Weight				Horizontal Corner Weight			
Max	742.0 lb	**Corner A**	171.0 lb	**Corner C**	184.0 lb	**Corner A**	199.0 lb	**Corner C**	148.0 lb
Min	688.0 lb	**Corner B**	195.0 lb	**Corner D**	139.0 lb	**Corner B**	167.0 lb	**Corner D**	175.0 lb

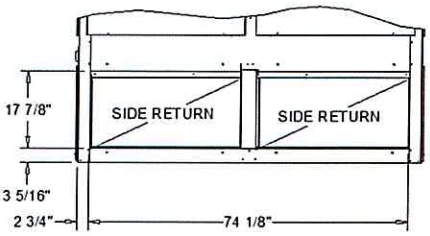
Field Installed Accessories

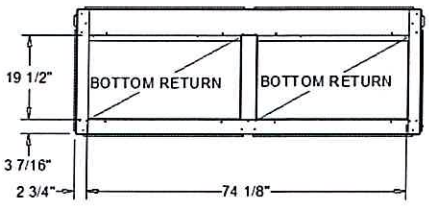
Coil enclosure	Hot water coil enclosure & asmbly

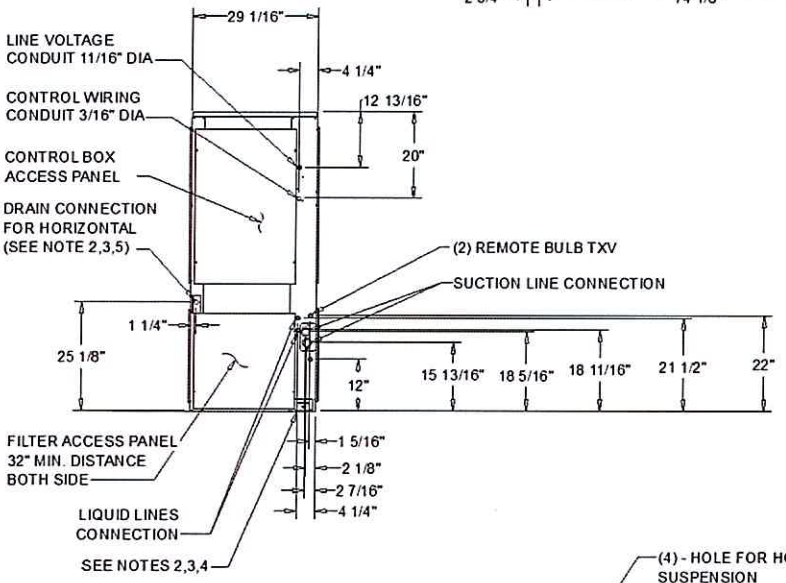


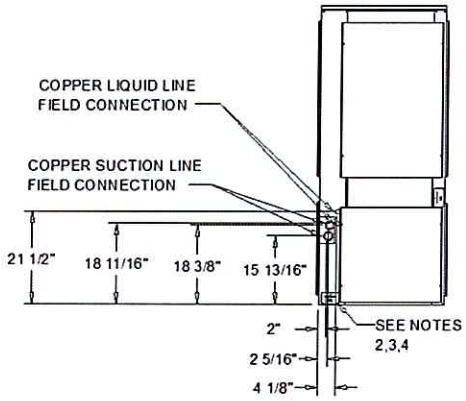
NOTES:
1. PANEL DEPTH 1/2" (TYP.ALL PANELS).
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION, PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF DRAIN PAN CONNECTION AT END OF UNIT.
4. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION VERTICAL CONFIGURATION.
5. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION HORIZONTAL CONFIGURATION.

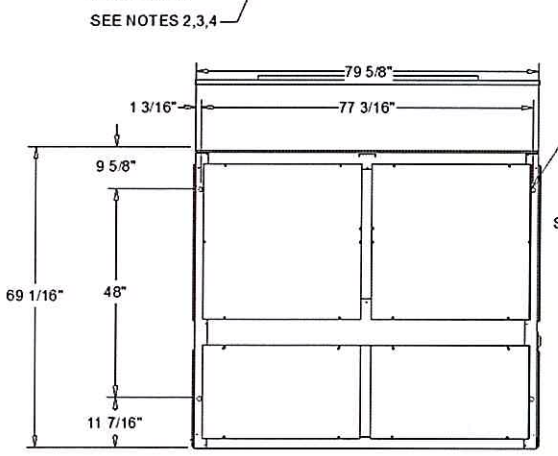
REFRIGERANT
1. SUCTION CONNECTION (1 3/8"OD) AND LIQUID CONNECTION (1/2" OD)

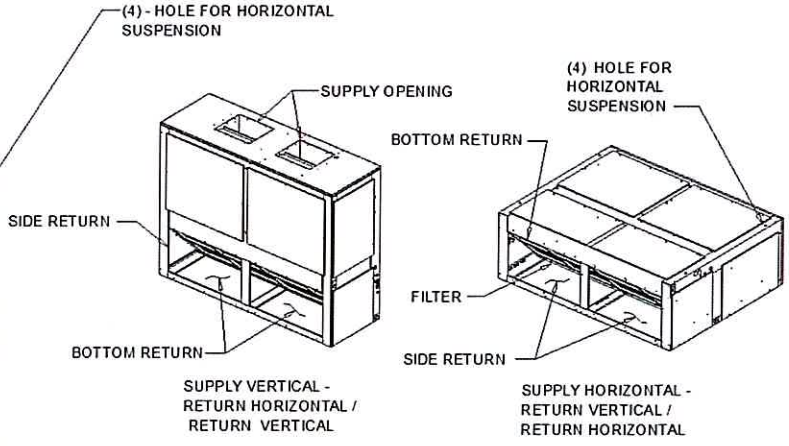






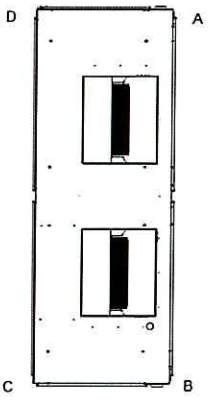


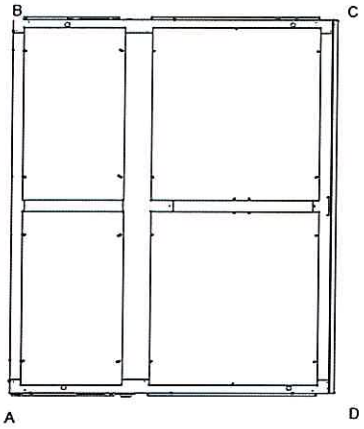




12.5 -15 TON AIR HANDLER (DUAL CIRCUIT)

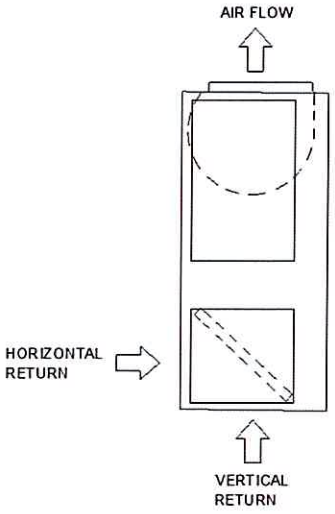
DIMENSIONAL DRAWING



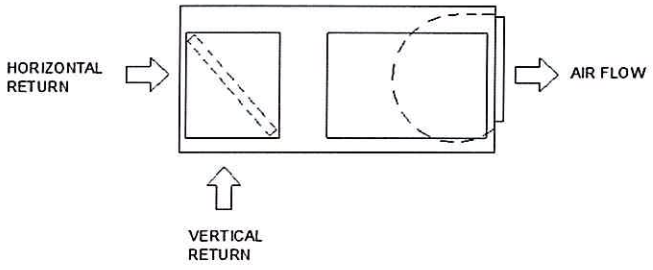


WEIGHTS AND CORNER WEIGHTS

Unit Weights:	
Max A.H. operating weight:	742.0 lb
<<2070527~FD>>	688.0 lb
Vertical Corner Weights:	
Vertical corner weight A:	171.0 lb
Vertical corner weight B:	195.0 lb
Vertical corner weight C:	184.0 lb
Vertical corner weight D:	139.0 lb
Horizontal Corner Weights:	
Horizontal corner weight A:	199.0 lb
Horizontal corner weight B:	167.0 lb
Horizontal corner weight C:	148.0 lb
Horizontal corner weight D:	175.0 lb



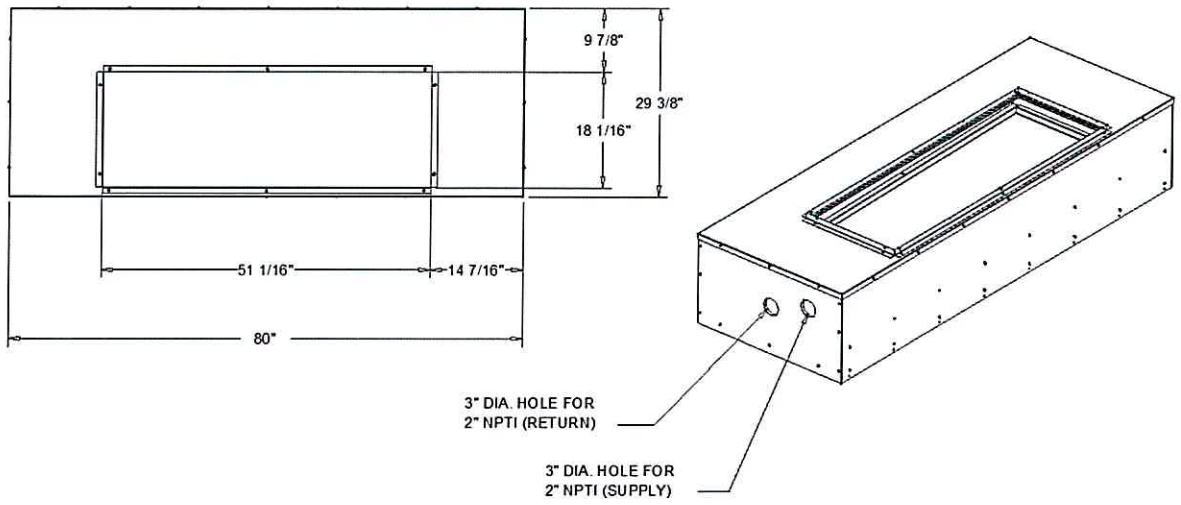
VERTICAL APPLICATION

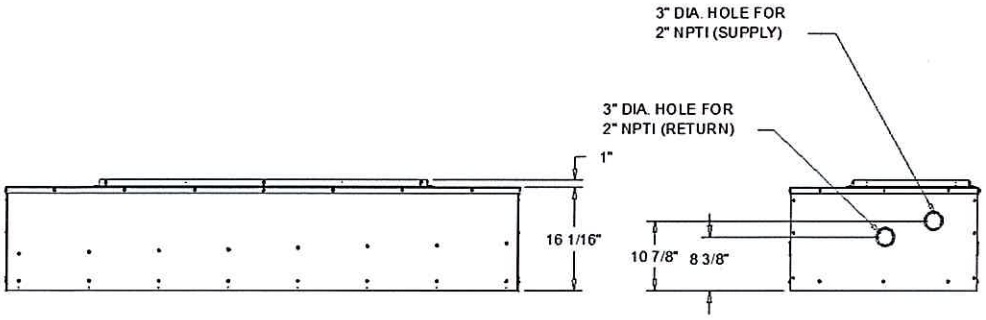


HORIZONTAL APPLICATION

WEIGHTS AND LOAD POINT LOCATION

WEIGHT AND RIGGING





BAYWATR030

ACCESSORY

General - *(TWE)*
- Completely factory assembled
- Convertible for horizontal or vertical configuration
- Convertible for cooling only or heat pump application
- Convertible for left or right external connections (refrigerant and/or electrical)
- Convertible for front or bottom air return
- Nitrogen holding charge
- Certified to UL 1995 for indoor blower coil units
- Unit shall be furnished with a leak detection system from the factory. The leak detection system shall consist of one or more refrigerant detection sensors. When the system detects a leak, the unit controller shall initiate mitigation actions.

Casing - *(TWE)*
- Zinc coated, heavy gauge, galvanized steel
- Weather resistant baked enamel finish
- Access panels with captive screws
- Completely insulated with foil faced, cleanable, fire retardant, permanent, odorless glass fiber materi al
- Captured or sealed insulation edges
- Electrical connection bushings or plugs
- Refrigerant connection bushings or plugs
- Withstand elevated internal static pressure

Refrigeration System - *(TWE)*
- Single or dual circuit
- Distributor(s)
- Thermal expansion valves (TXVs)

Evaporator Coil - *(TWE)*
- 3/8" internally enhanced copper tube mechanically bonded to lanced aluminum plate fins
- Factory pressure and leak tested to 449 psig.
- Draw-through airflow
- Dual circuits are interlaced/intertwined
- Double sloped, removable, cleanable, composite drain pan
- Four drain pan positions

Indoor Fan - *(TWE)*
- Double inlet, double width, forward curved, centrifugal type fan
- Dual fans on 12.5-25 ton air handlers-Adjustable belt drive
- Permanently lubricated bearings

Indoor Motor - *(TWE)*
- Adjustable motor sheaves (constant volume units)
- Fixed motor sheaves (SZVAV and 2-Speed VFD)
- Thermal overload protection
- Permanently lubricated bearings
- Meet energy policy of 1992 (EPACT)
- Optional oversized motors for high static applications

Controls - *(TWE)*
- Completely internally wired
- Colored and keyed connectors, colored wires
- Magnetic indoor fan contactor
- Detachable low voltage connectors
- Single point power entry
- Evaporator defrost control

Single Zone Variable Air Volume - *TWE*
- Variable Frequency Drive (VFD)
- Motor soft start - avoids start up belt noise and increases belt life
- Programmable VFD keypad accessible outside of airstream
- Airflow adjustment via display/keypad on SymbioTM 700 controller in condenser
- Discharge air sensor
- Symbio 700 Options Module
- VFD rated motor
- Factory installed oversized motor available

Electric Heaters - *(TWE)*
- Heavy duty nickel chromium elements
- Agency approved
- Installs directly on fan discharge
- One or two stage control (dependent upon capacity)
- Single point power entry
- Terminal strip connections

230V Heaters
- Internally delta connected
- Automatic reset of high limit controls through pilot duty with secondary backup fuse links

Hydronic Heat Coils - (*TWE*)
- One row steam
- Two row hot water
- Installs directly on fan discharge
- Heavy gauge sheet metal casing matches air handler
- Convertible for horizontal or vertical configurations

6 - 25 Ton Unitary Split Systems Indoor

Unit Overview

Model	TWE060K3AAA**B10000000000000000000000000
AHU Tonnage	5 Ton
Refrigerant	R-454B Refrigerant
AHU Voltage	208-230/60/3
AHU Refrigeration Circuit	Single Circuit
AHU Controls	Constant Volume - Symbio

Note: For line lengths other than 25', please refer to the Application Guide (SS-APG008*-EN) for charge levels, oil addition and line sizes.



Fan Information

Airflow	1600 cfm	**Supply fan motor BHP**	0.50 bhp
External Static Pressure	0.500 in H2O	**Supply fan motor RPM**	888 rpm
External plus component static pressure	0.500 in H2O		

Cooling Information

Cooling EDB	80.00 F
Cooling EWB	67.00 F
Summer outdoor ambient	95.00 F

Electrical Information

MCA - A.H.	4.00 A
MOP - A.H.	15.00 A
Supply Fan Motor FLA	2.80 A

Heating Information

Winter EDB	70.00 F
Winter outdoor ambient DB	47.00 F

Refrigerant Information

Refrigerant	R-454B Refrigerant	**Supply Fan Motor FLA**	2.80 A

Filter

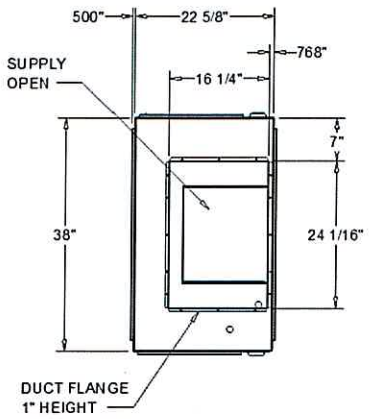
Filter	Standard 1" throwaway filters	1 - 16" x 20" x 1", 1 - 20 "x 20 x 1"

Weights

Max/Min Airhandler Operating Weight		Vertical Corner Weight				Horizontal Corner Weight			
Max	431.0 lb	**Corner A**	55.0 lb	**Corner C**	51.0 lb	**Corner A**	54.0 lb	**Corner C**	50.0 lb
Min	232.0 lb	**Corner B**	71.0 lb	**Corner D**	55.0 lb	**Corner B**	67.0 lb	**Corner D**	61.0 lb

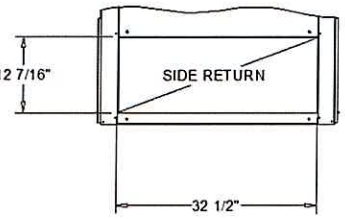
Field Installed Accessories

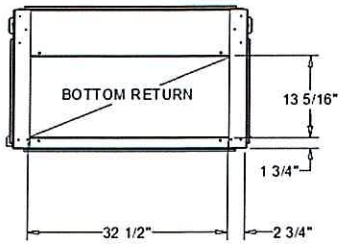
Coil enclosure	Hot water coil enclosure & asmbly

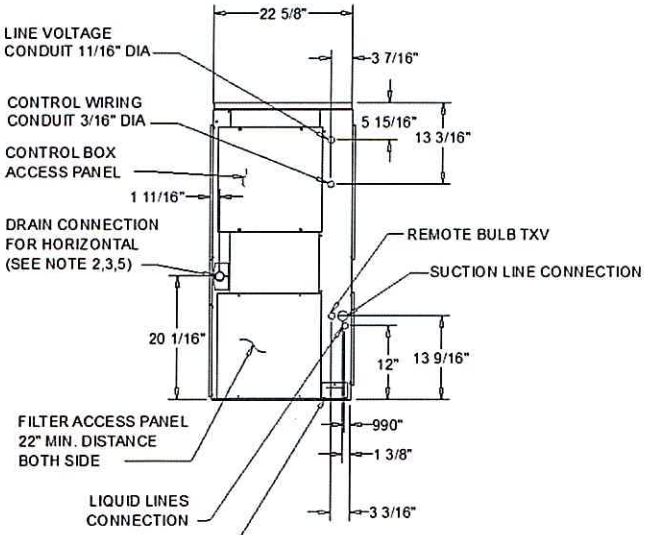


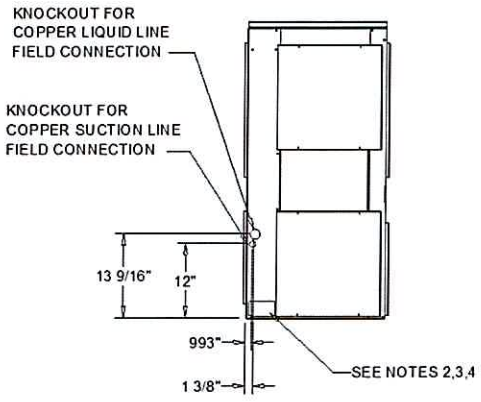
NOTES:
1 PANEL DEPTH 1/2" (TYP.ALL PANELS).
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON END OF UNIT IN EITHER THE VERTICAL OR HORIZONTAL CONFIGURATION, PLASTIC DRAIN PAN ACCESS PLATE ON THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF DRAIN PAN CONNECTION AT END OF UNIT.
4. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION VERTICAL CONFIGURATION.
5. 1" FEMALE SCHED. 40 PVC PIPE DRAIN CONNECTION HORIZONTAL CONFIGURATION.

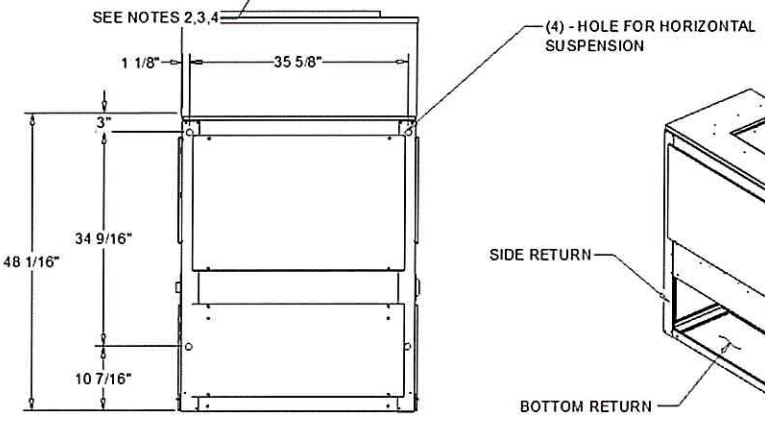
REFRIGERANT
1.

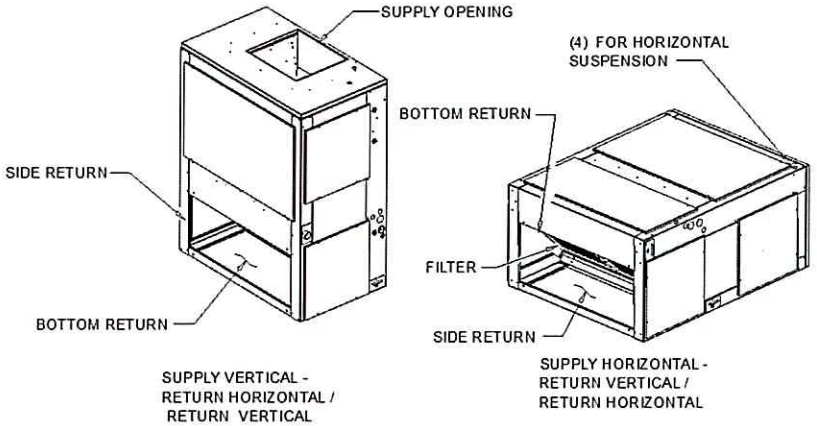






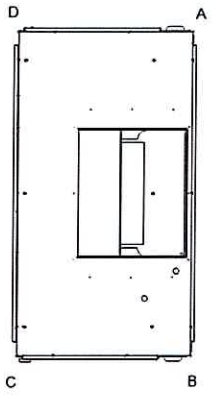


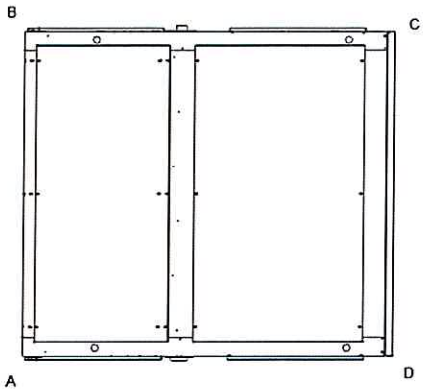




5 TON AIR HANDLER (SINGLE CIRCUIT)

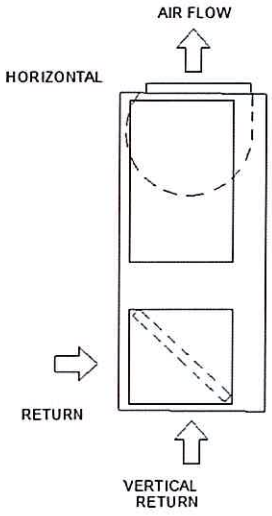
DIMENSIONAL DRAWING

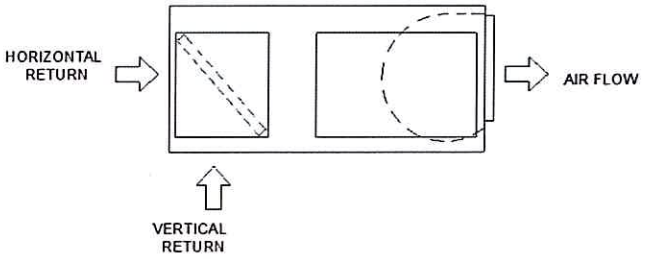




WEIGHTS AND CORNER WEIGHTS

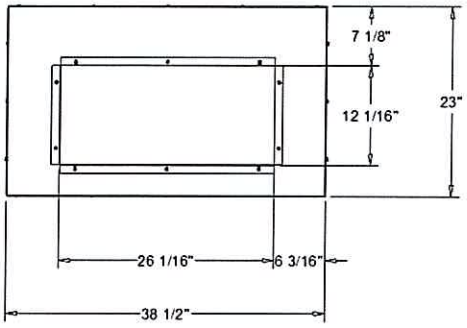
Unit Weights:	
Max A.H. operating weight:	431.0 lb
<<2070527~FD>>	232.0 lb
Vertical Corner Weights:	
Vertical corner weight A:	55.0 lb
Vertical corner weight B:	71.0 lb
Vertical corner weight C:	51.0 lb
Vertical corner weight D:	55.0 lb
Horizontal Corner Weights:	
Horizontal corner weight A:	54.0 lb
Horizontal corner weight B:	67.0 lb
Horizontal corner weight C:	50.0 lb
Horizontal corner weight D:	61.0 lb

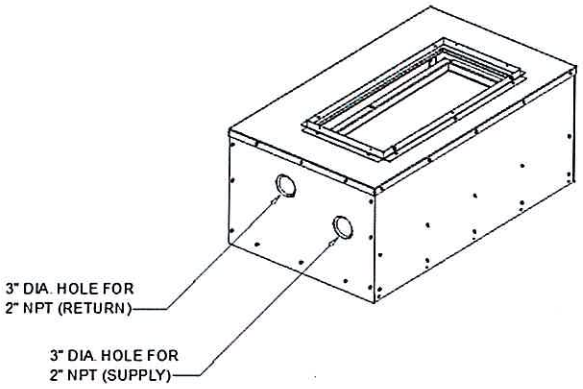


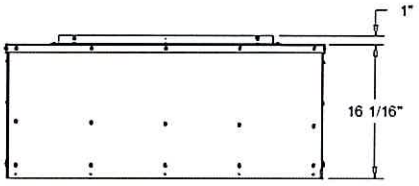


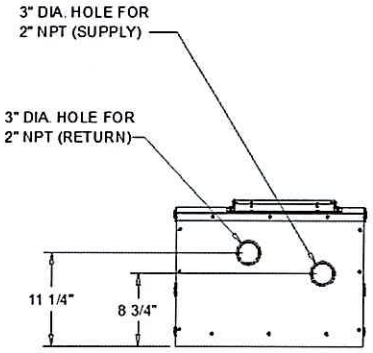
WEIGHTS AND LOAD POINT LOCATION

WEIGHT AND RIGGING









BAYWATR027

ACCESSORY - THERMOSTAT

General - *(TWE)*
- Completely factory assembled
- Convertible for horizontal or vertical configuration
- Convertible for cooling only or heat pump application
- Convertible for left or right external connections (refrigerant and/or electrical)
- Convertible for front or bottom air return
- Nitrogen holding charge
- Certified to UL 1995 for indoor blower coil units
- Unit shall be furnished with a leak detection system from the factory. The leak detection system shall consist of one or more refrigerant detection sensors. When the system detects a leak, the unit controller shall initiate mitigation actions.

Casing - *(TWE)*
- Zinc coated, heavy gauge, galvanized steel
- Weather resistant baked enamel finish
- Access panels with captive screws
- Completely insulated with foil faced, cleanable, fire retardant, permanent, odorless glass fiber materi al
- Captured or sealed insulation edges
- Electrical connection bushings or plugs
- Refrigerant connection bushings or plugs
- Withstand elevated internal static pressure

Refrigeration System - *(TWE)*
- Single or dual circuit
- Distributor(s)
- Thermal expansion valves (TXVs)

Evaporator Coil - *(TWE)*
- 3/8" internally enhanced copper tube mechanically bonded to lanced aluminum plate fins
- Factory pressure and leak tested to 449 psig.
- Draw-through airflow
- Dual circuits are interlaced/intertwined
- Double sloped, removable, cleanable, composite drain pan
- Four drain pan positions

Indoor Fan - *(TWE)*
- Double inlet, double width, forward curved, centrifugal type fan
- Dual fans on 12.5-25 ton air handlers-Adjustable belt drive
- Permanently lubricated bearings

Indoor Motor - *(TWE)*
- Adjustable motor sheaves (constant volume units)
- Fixed motor sheaves (SZVAV and 2-Speed VFD)
- Thermal overload protection
- Permanently lubricated bearings
- Meet energy policy of 1992 (EPACT)
- Optional oversized motors for high static applications

Controls - *(TWE)*
- Completely internally wired
- Colored and keyed connectors, colored wires
- Magnetic indoor fan contactor
- Detachable low voltage connectors
- Single point power entry
- Evaporator defrost control

Constant Volume Airflow - *(TWE)*
- Factory installed high static motor available

Electric Heaters - *(TWE)*
- Heavy duty nickel chromium elements
- Agency approved
- Installs directly on fan discharge
- One or two stage control (dependent upon capacity)
- Single point power entry
- Terminal strip connections

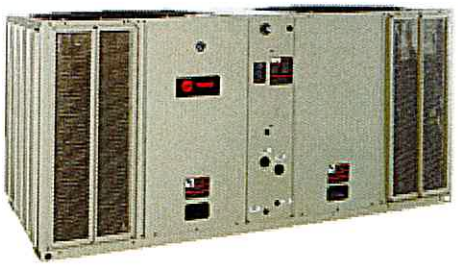
230V Heaters
- Internally delta connected
- Automatic reset of high limit controls through pilot duty with secondary backup fuse links

Hydronic Heat Coils - (*TWE*)
- One row steam
- Two row hot water
- Installs directly on fan discharge
- Heavy gauge sheet metal casing matches air handler
- Convertible for horizontal or vertical configurations

6 - 25 Ton Unitary Split Systems Outdoor

Unit Overview

Model	TTA180K3DAA**BS0100000000000000000000000
Construction	Replacement
Unit Tonnage	15 Ton
Controls	Symbio (Cooling)
Voltage	208-230/60/3
Refrigeration Circuit / Stage	Dual Compressors / Dual Circuit
Refrigerant	R-454B Refrigerant
Unit Function	Cooling
Max. Cond. Operating Weight	714.2 lb



Electrical Information

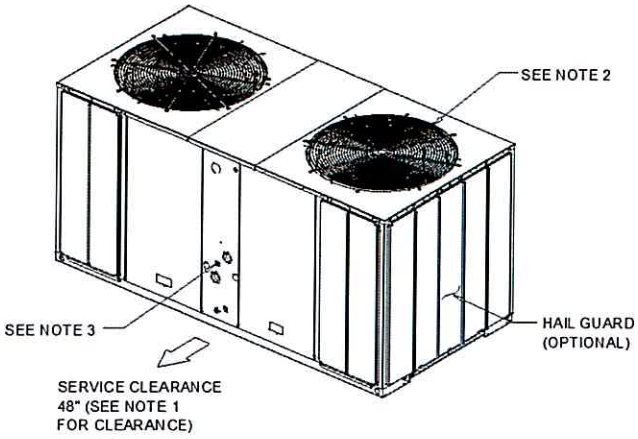
MCA	74.00 A	**Compressor 1 RLA**	28.50 A	**Cond. Motor 1 FLA**	4.30 A
MOP	100.00 A	**Compressor 2 RLA**	28.50 A	**Cond. Motor 2 FLA**	4.30 A

Refrigerant Information

Refrigerant	R-454B Refrigerant
Suction Line Connection Size	1.375 in
Liquid Line Connection Size	0.500 in

Weights

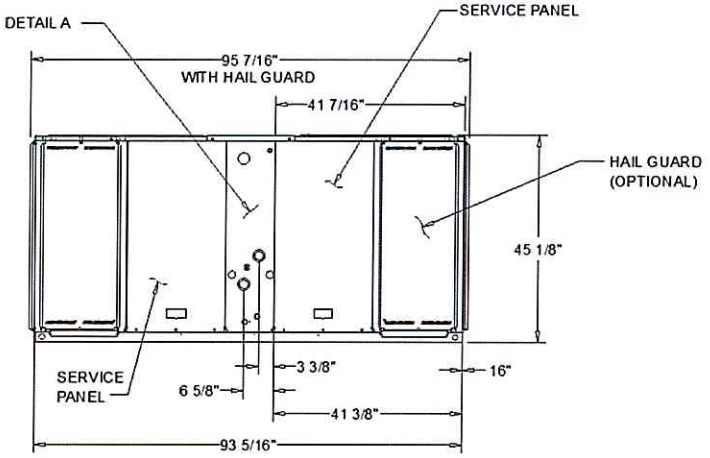
Approx Installed Weight	Corner Weight A	Corner Weight B	Corner Weight C	Corner Weight D
714.2 lb	197.0 lb	198.0 lb	160.0 lb	160.0 lb

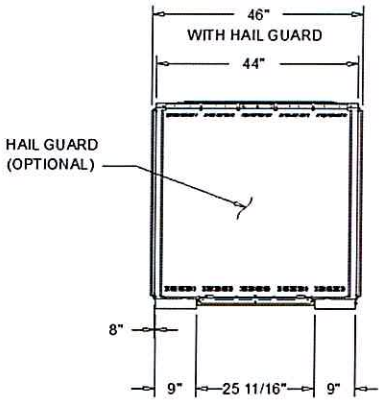


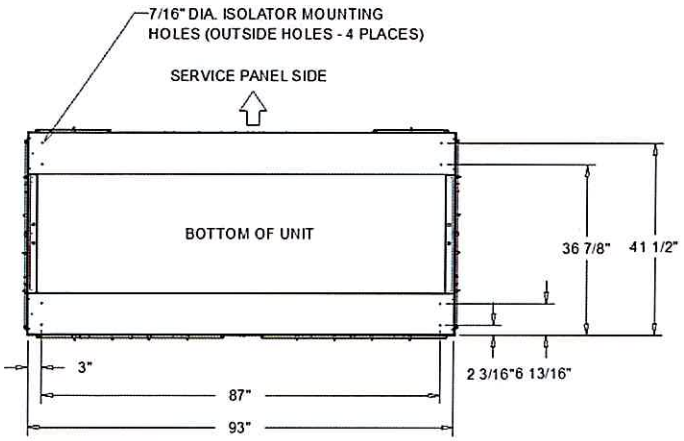
NOTES:
1. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN ADJACENT UNITS IS 72". RECOMMENDED SERVICE CLEARANCE 48"
2. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 100" MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER DOES NOT POUR DIRECTLY ON UNIT
3. OUTDOOR AIR TEMPERATURE SENSOR OPENING (DO NOT BLOCK OPENING)

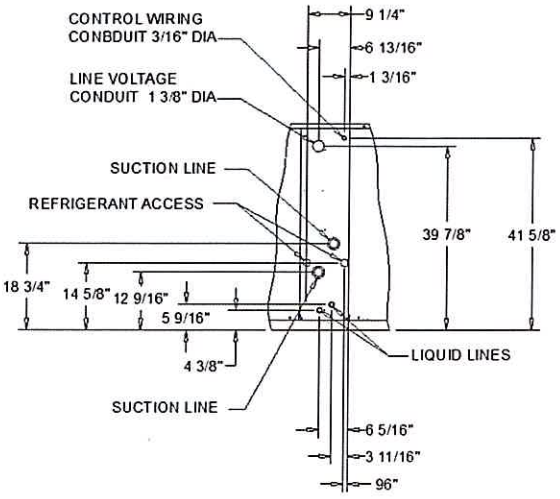
REFRIGERANT

1.







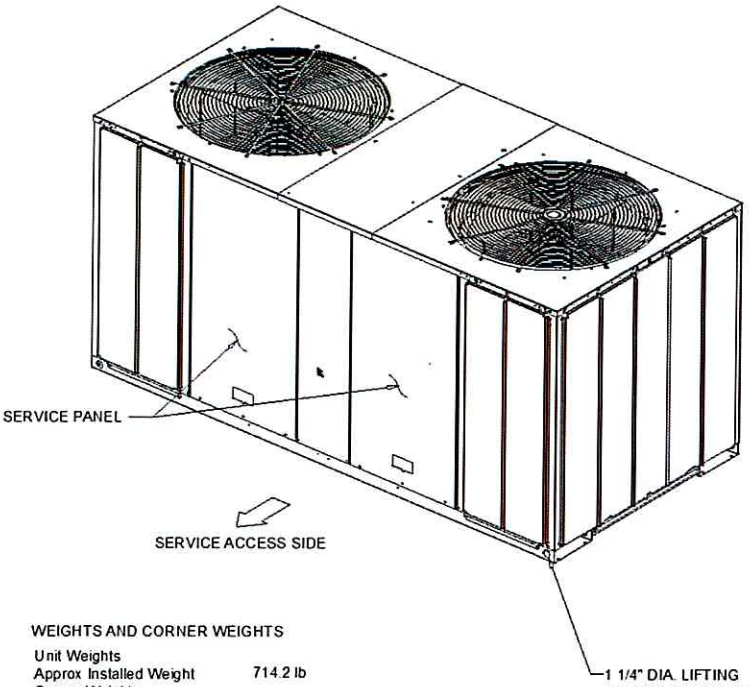


FRONT DETAIL A

DIMENSIONAL DETAIL

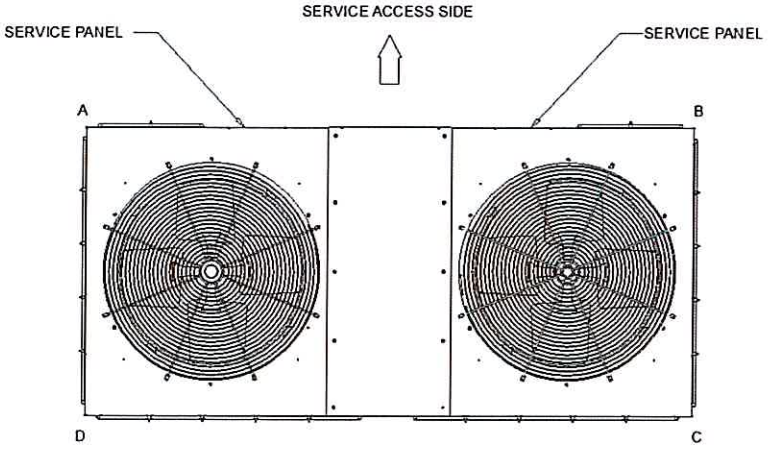
15 - 20 TON COOLING CONDENSER (DUAL COMPRESSOR)

DIMENSIONAL DRAWING



WEIGHTS AND CORNER WEIGHTS

Unit Weights	
Approx Installed Weight	714.2 lb
Corner Weights	
Corner Weight A:	197.0 lb
Corner Weight B:	198.0 lb
Corner Weight C:	160.0 lb
Corner Weight D:	160.0 lb



WEIGHTS AND LOAD POINT LOCATION FOR CONDENSER

WEIGHT AND RIGGING

General - (TTA)
- Weatherproofed steel mounting/lifting rails
- Hermetic scroll compressors
- Microchannel condenser coils
- Fans and motors
- Standard operating range 50.0 F-125.0 F (min. 0.0 F with low ambient accessory)
- Nitrogen holding charge
- Certified and rated in accordance with AHRI and DOE standards
- Certified to UL 1995
- Capacities and efficiencies for split systems are rated within the scope of the Air-Conditioning, Heating, & Refrigeration Institute (AHRI) certification program and display the AHRI Standard 340-360 (I-P) mark. This standard applies to units between 65,000 and 250,000 btu/hr.
- Capacities and efficiencies for split system cooling condensers are rated within the scope of the Air -Conditioning, Heating, & Refrigeration Institute (AHRI) certification program and display the AHRI Standard 365 (I-P) mark. This standard applies to cooling units between 135,000 and 250,000 btu/hr.
- Unit shall be furnished with a leak detection system from the factory. The leak detection system shall consist of one or more refrigerant detection sensors. When the system detects a leak, the unit controller shall initiate mitigation actions.

Factory installed perforated steel hail guards
- Condenser coil protection from hail, vandals, etc.
- Perforated, painted galvanized steel

Phase Monitor/Reversal Protection
Phase monitor shall provide 100% protection for motors and compressors against problems caused by phase loss, phase imbalance, and phase reversal. Phase monitors are equipped with an LED that provides an ON or FAULT indicator. Quick-Access Panels

- Remove a few screws for access to the standardized internal components and wiring.

Bid Title	Derby Public Library HVAC Upgrades - April 2026
Bid ID	1120
Submitter Name	<Louis Savarese> lsavarese@controlledair.com (https://prod1.evo.cloud/derbyct/dashboard/?url=/derbyct/dashboard/administrator/staff/user/detail/173041/)
Submitter Email Address	lsavarese@controlledair.com (mailto:lsavarese@controlledair.com)
Company Name	Controlled Air Inc.
Company Street Address	15 NE industrial rd
Company City	Branford
Company State	CT
Company ZIP Code	06405
Company Phone Number	6312553285
Company Fax Number	
Comments	Dear Fire Mashal, We are looking at installing a A2L HVAC system in the Derby Public Library. In this case, 1 of the split AC units has refrigerant piping that needs to be routed inside the building envelope in ceiling plenums. What code sections are will you be referring to when making your evaluation to close out the project, in regard to evaluating refrigerant piping installed in a return air ceiling plenum. Please advise. Thank you.
Date Submitted	Apr 9, 2026 at 11:50:46 AM
Submission Documents	No Bid Submission Uploads