



Trane Precedent Packaged Rooftop

Unit Overview - THK210A4S0N**H4B0A1B1A000000000000000000

Application	Unit Size	Supply Fan		External Dimensions (in.)			Operating Weight	Elevation
DX Cooling / Electric Heat	17.5 Ton	Airflow	Total Static Pressure	Height	Width	Length	2158.0 lb	0.00 ft
		7000 cfm	1.932 in H2O	4.92 ft	7.25 ft	10.25 ft		

Unit Features

Unit Efficiency	High Efficiency
Refrigerant	R-454B Refrigerant
EER @ AHRI	12.10
IEER @ AHRI	17.20
Hinged Service Access/Filters	Standard Panels with 2-in MERV 8 Filter
Through the Base Provisions	Electric
Disconnect / Circuit Breaker	Non-Fused Disconnect Switch
Convenience Outlet	Powered 15A Convenience Outlet
Fresh Air Selection	Economizer, Comparative Enthalpy with BR
Refrigeration Systems Option	Modulating Hot Gas Reheat (HGRH)



Unit Electrical

Voltage	460/60/3
MCA	67.00 A
MOP	70.00 A
Condenser Fan FLA	2.50 A
Evaporator Fan FLA	4.60 A
Electric Heat FLA	43.30 A
Electric heat FLA (230V)	0.00 A
Compressor 1 RLA	17.80 A
Compressor 2 RLA	10.50 A
Compressor Power	14.69 kW
System Power	19.21 kW

Controls

Unit Controls	Symbio 700
Communications Option	Advanced Controls and BACnet BAS
SupplyFan/Drive/MotorType	Multiple Zone VAV with Standard Motor

Cooling Section

Entering Dry Bulb		Capacity	
Entering Dry Bulb	80.00 F	Gross Total	219.09 MBh
Entering Wet Bulb	67.00 F	Gross Latent	52.19 MBh
Ambient Temp	95.00 F	Gross Sensible	166.90 MBh
Leaving Coil Dry Bulb	57.77 F	Net Total	209.57 MBh
Leaving Coil Wet Bulb	56.77 F	Net Sensible	157.39 MBh
Leaving Unit Dry Bulb	59.55 F	Net Sensible Heat Ratio	75.10 %
Leaving Unit Wet Bulb	57.48 F	Fan Motor Heat	3.71 MBh
Saturated Discharge Temperature	120.72 F	Refrig Charge-Circuit 1	13.9 lb
Saturated Suction Temperature	51.67 F		

Reheat Section

Hot Gas Reheat		Capacity	
Hot Gas Reheat	Modulating Hot Gas Reheat (HGRH)	Dehumidification/Hot Gas Reheat	159.59 MBh
Entering Dry Bulb (in HRGH)	73.00 F	Reheat Mode Leaving Unit Temp	75.30 F
Entering Wet Bulb (in HRGH)	64.00 F	Leaving Unit Dew Point in HGRH	51.99 F
Evap Coil LAT DB (HGRH)	53.03 F	Reheat Coil Temperature Rise	20.89 F
Evap Coil LAT WB (HGRH)	52.41 F	Reheat Mode Moisture Removal	9.23 gph
Ambient DB (in HGRH)	70.00 F	Reheat Coil LAT (HGRH)	73.92 F
		Reheat Coil LWB (HGRH)	60.58 F



Heating Section

Heating	36 kW Electric Heat
Output Heating Capacity	122.94 MBh
Heating EAT	55.00 F
Heating LAT	71.04 F
Heating Temp Rise	16.04 F

Fan Section

Indoor Fan Data		Indoor Fan Performance	
Airflow Application	Downflow	Airflow	7000 cfm
Design ESP	1.500 in H2O	Supply Motor Horsepower	3.000 hp
Component SP	0.372 in H2O	Total Supply Motor Operating Power	4.181 hp
Heat SP	0.060 in H2O	Indoor RPM	1475 rpm
Total SP	1.932 in H2O	Outdoor Fan Data	
Indoor Fan Drive Type	Variable Direct	Outdoor Fan Drive Type	Direct
Indoor Fan Quantity	2	Outdoor Fan Quantity	2
Indoor Fan Type	BC Plenum	Outdoor Fan Type	Propeller
		Filters	
		1st Filter Size and Qty	8 - 20 x 24 x 2

Acoustics

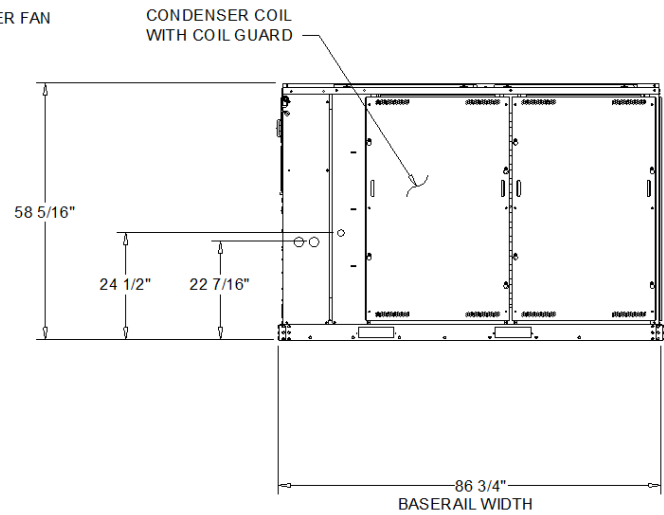
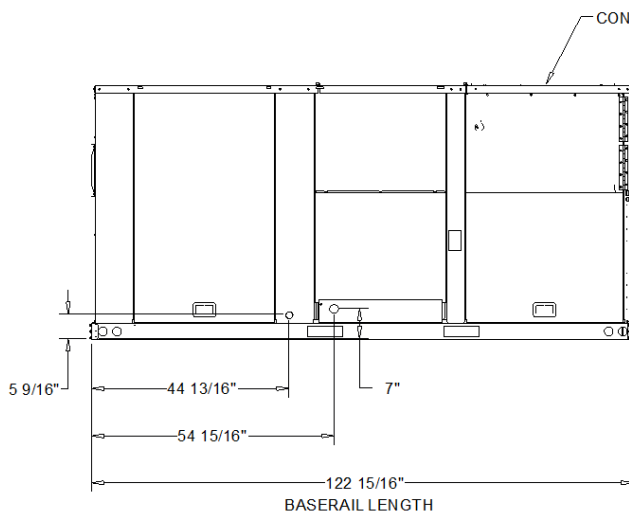
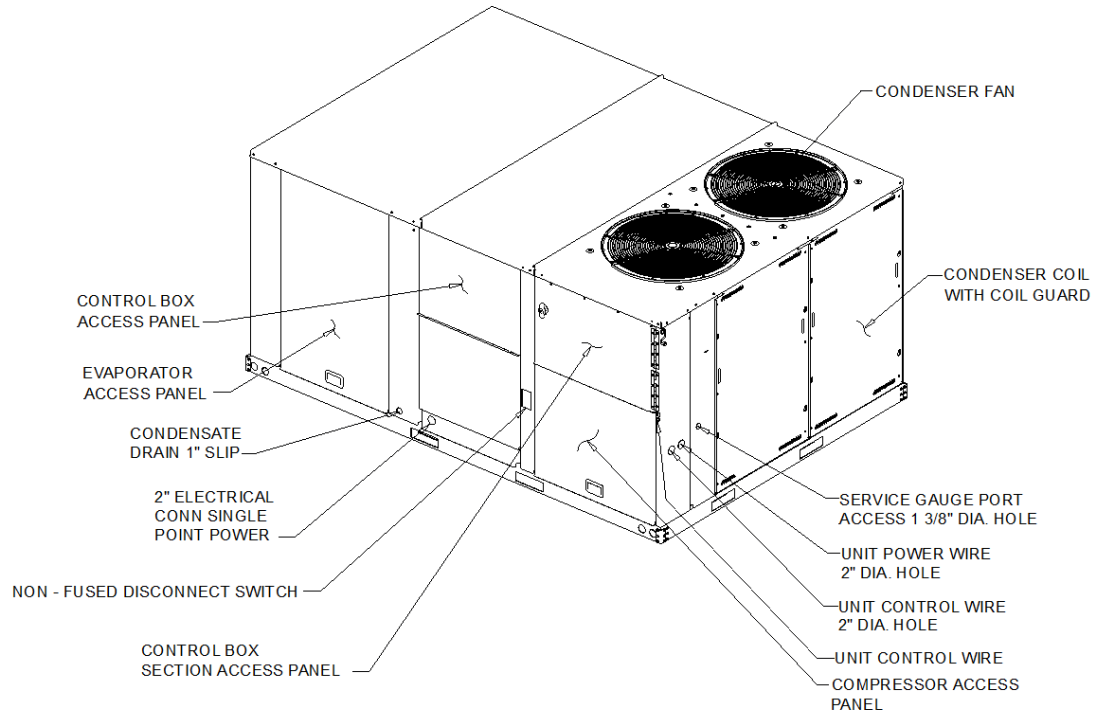
Sound Path	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz
Ducted Discharge	81 dB	95 dB	82 dB	76 dB	70 dB	67 dB	67 dB	66 dB
Ducted Inlet	79 dB	85 dB	75 dB	69 dB	65 dB	62 dB	62 dB	60 dB
Outdoor Noise	88 dB	90 dB	91 dB	89 dB	86 dB	82 dB	79 dB	73 dB

Note:Ducted Discharge/Ducted Inlet prediction data conform to AHRI 260



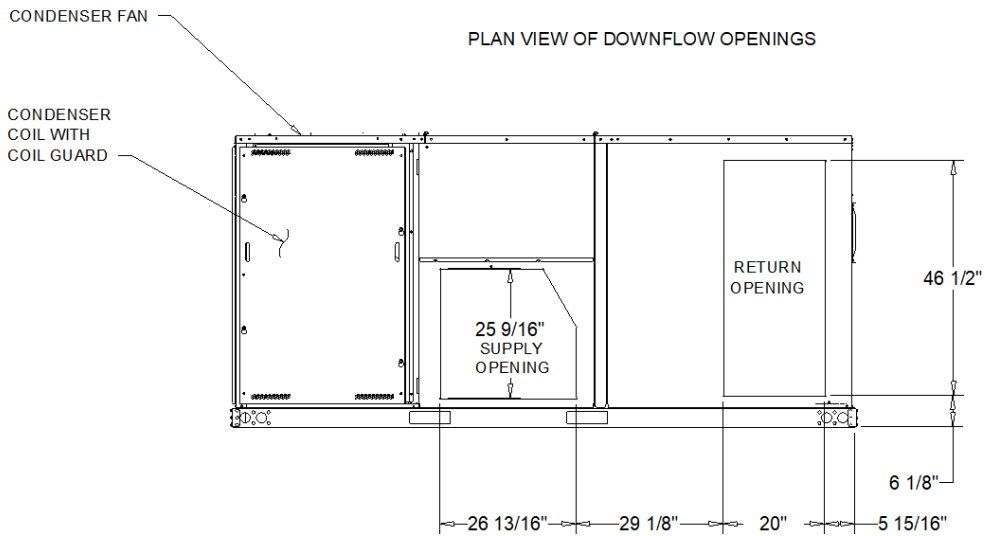
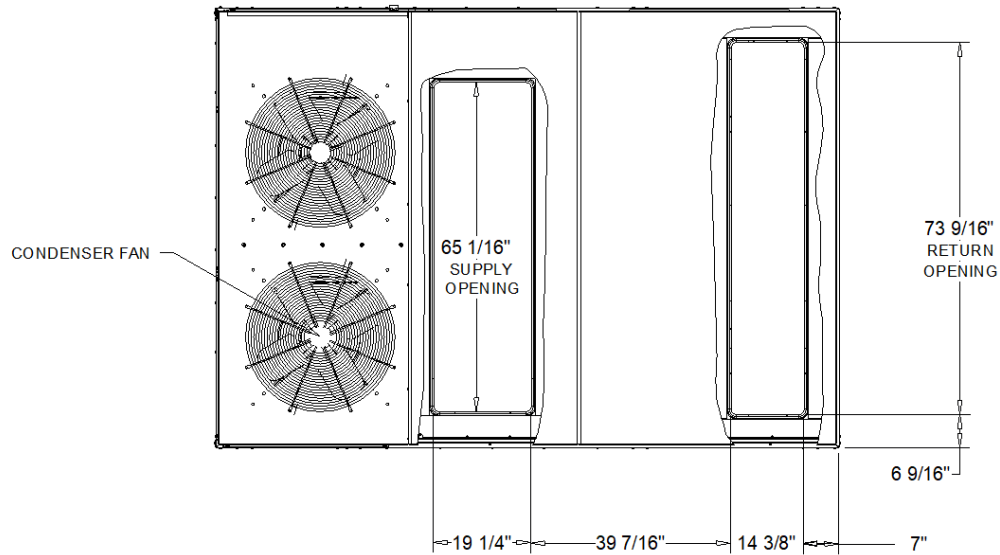
NOTES:

1. THRU -THE -BASE ELECTRICAL IS NOT STANDARD ON ALL UNITS.
2. VERIFY WEIGHTS, CONNECTIONS, AND ALL DIMENSIONS WITH INSTALLER DOCUMENTS BEFORE INSTALLATION



DX COOLING / ELECTRIC HEAT HIGH EFFICIENCY

DIMENSION DRAWING



HORIZONTAL AIR FLOW OPENING

DX COOLING / ELECTRIC HEAT HIGH EFFICIENCY

DIMENSION DRAWING



Job Name: Greenwood High School
Prepared For:
Unit Tag: RTU-eheat
Quantity: 1

NOTES:

1. APPROX. INSTALLED WEIGHT INCLUDES ALL SELECTED OPTIONS AND ACCESSORIES.
2. CORNER WEIGHTS ARE FOR BASE UNIT ONLY AND DO NOT INCLUDE OPTIONS OR ACCESSORIES.
3. WEIGHT INCLUDES BOTH FACTORY AND FIELD INSTALLED ACCESSORY.

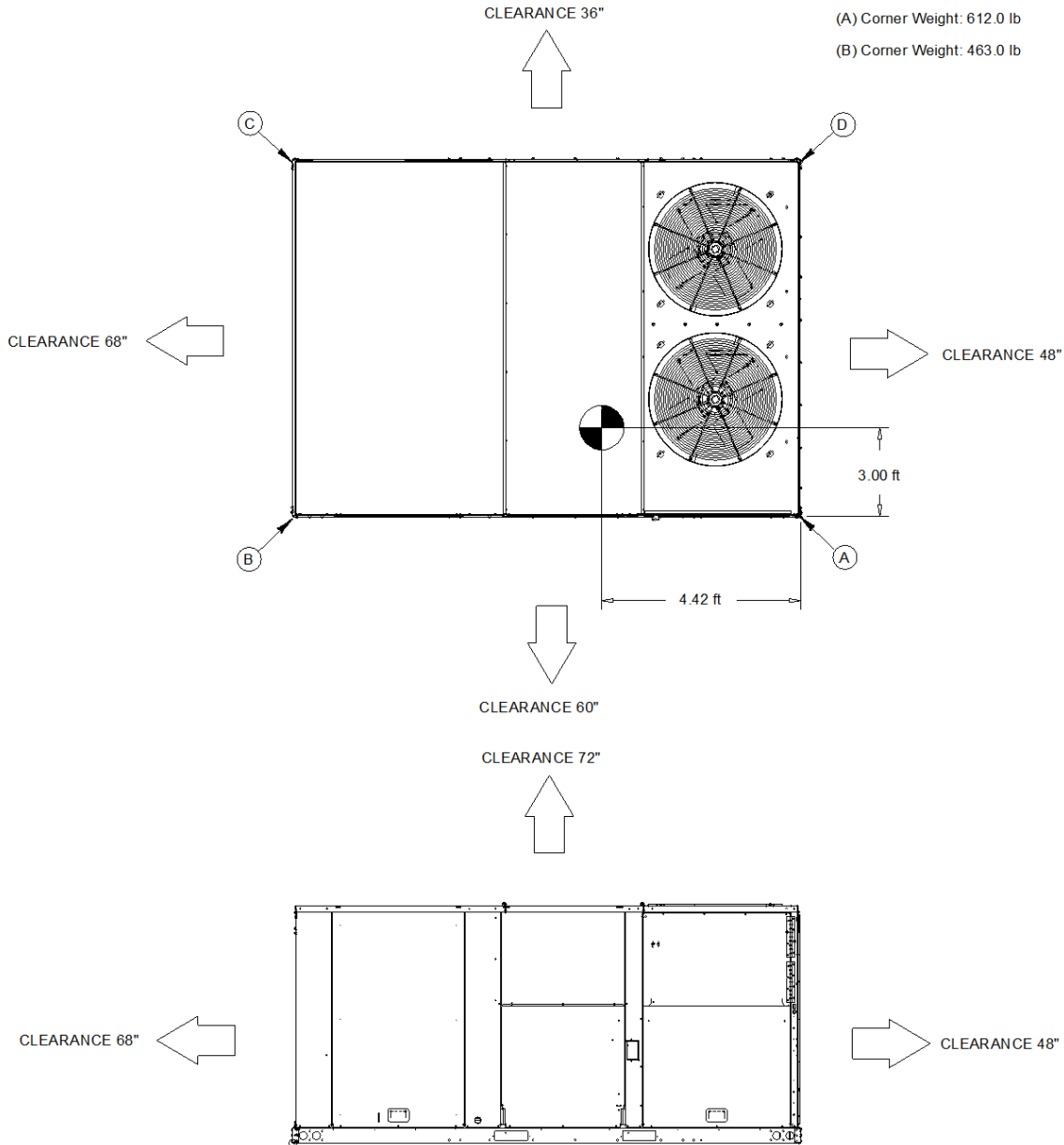
Approximate Installed Weight: 2,158.0 lb

(A) Corner Weight: 612.0 lb

(C) Corner Weight: 334.0 lb

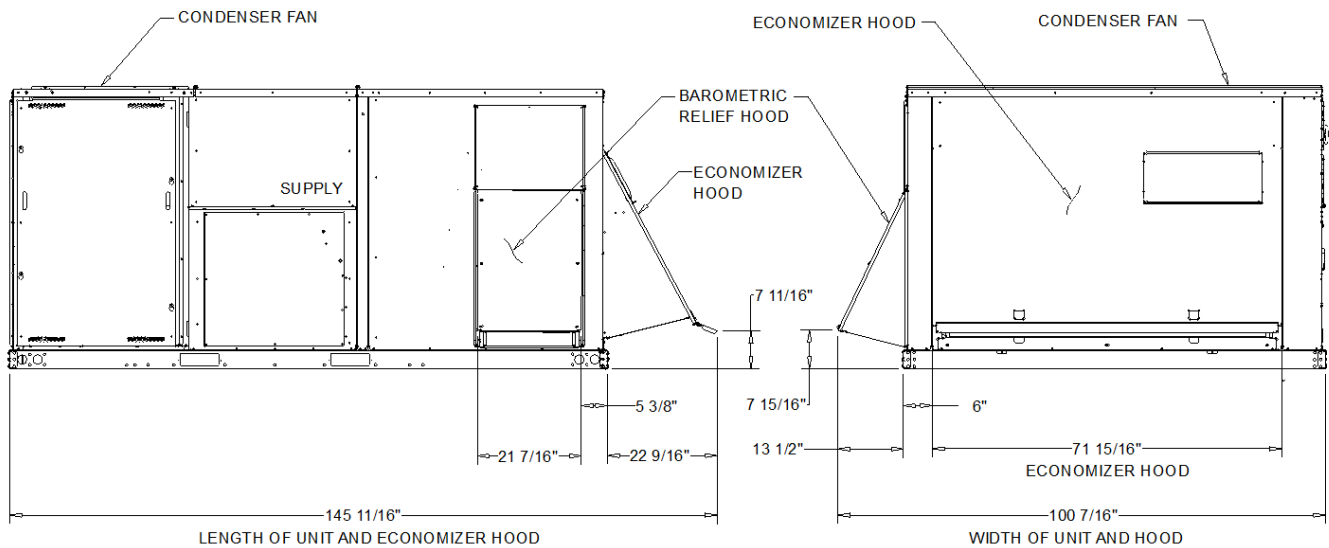
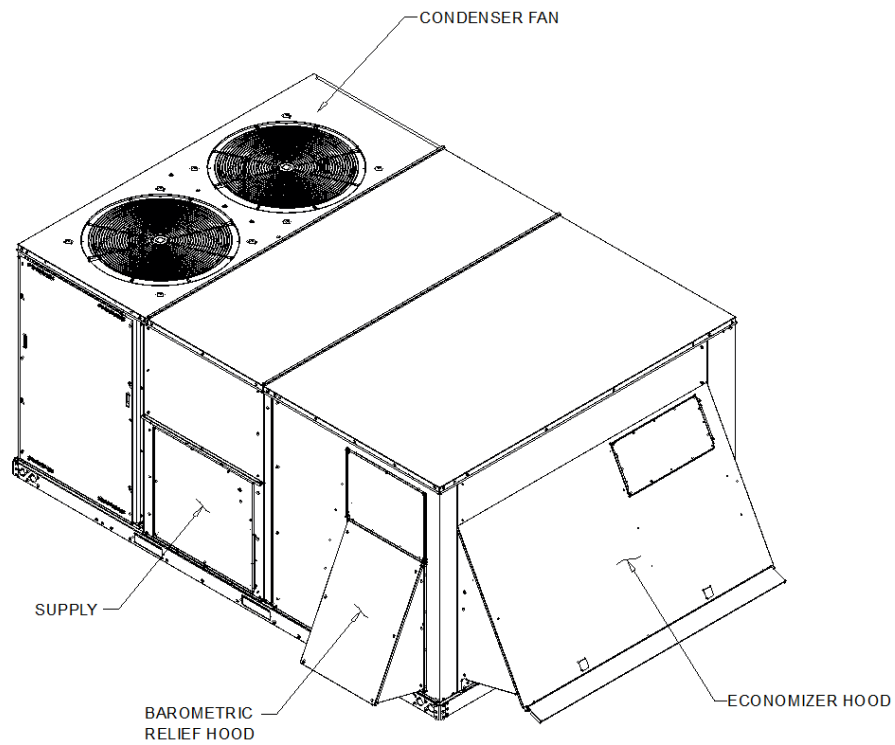
(B) Corner Weight: 463.0 lb

(D) Corner Weight: 441.0 lb



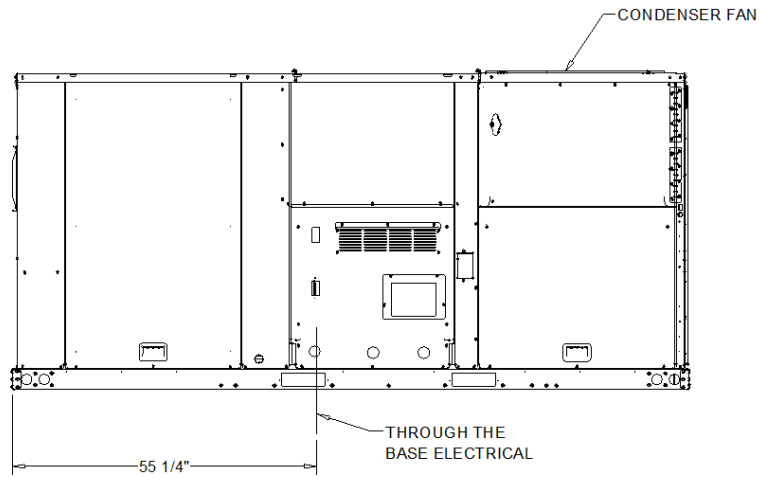
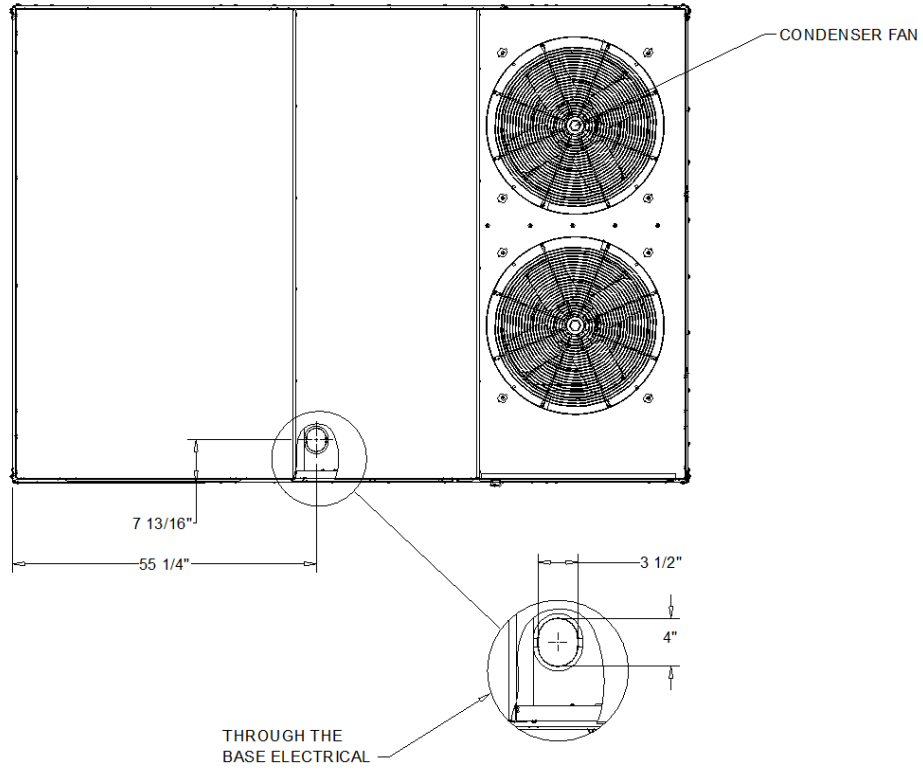
DX COOLING / ELECTRIC HEAT HIGH EFFICIENCY

WEIGHTS AND CLEARANCES



ECONOMIZER AND BAROMETRIC AIR DAMPER(S) (OPTION)

DX COOLING / ELECTRIC HEAT HIGH EFFICIENCY



THROUGH-THE-BASE ELECTRICAL (OPTION)

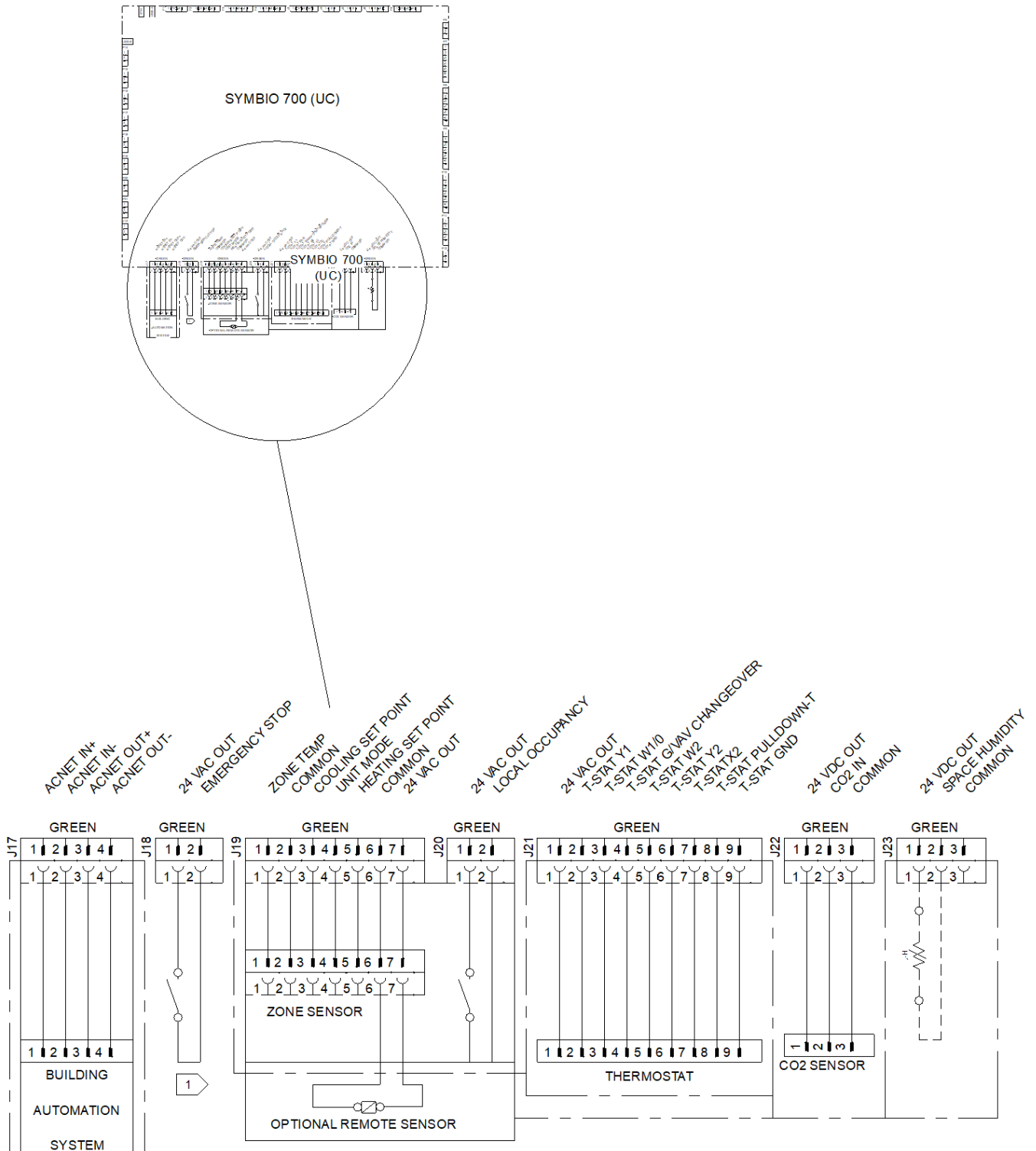
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NOTES:

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SYMBIO 700 (J17, J18, J19, J20, J21, J22, AND J23)

FIELD WIRING DRAWING



General

Packaged rooftop unit cooling capacities, heating capacities, and efficiencies are certified to the following standards:

- 3 to 5 ton units: AHRI Standard 210/240.
- 6 to 25 ton units: AHRI Standard 340/360.
- Gas Heating Units: ANSI Z21.47 and 10 CFR Part 431 for Commercial Warm Air.
- Convertible airflow.
- Symbio? controls operating range between 40°F and 125°F in cooling mode standard from the factory. Field-installed low ambient kit extends operating range down to 0°F.
- Factory assembled, internally wired, fully charged, and 100 percent run tested to verify cooling operation, fan and blower rotation, and control sequence.
- Colored and numbered wiring internal to the unit for simplified identification.
- cULus listed and classified in accordance for Central Cooling Air Conditioners.
- Unit shall be furnished with a leak detection system from the factory

Casing

- Zinc coated, heavy gauge, galvanized steel.
- Weather resistant pre-painted metal with galvanized substrate.
- Meets ASTM B117, 672 hour salt spray test.
- Removable single side maintenance access panels.
- Lifting handles in maintenance access panels (can be removed and reinstalled by removing fasteners while providing a water and air tight seal).
- Exposed vertical panels and top covers in the indoor air section insulated with a cleanable foil-faced, fire-retardant permanent, odorless glass fiber material.
- Base pan shall have no penetrations within the perimeter of the curb other than the raised 1 inch high downflow supply/return openings to provide an added water integrity precaution, if the condensate drain backs up.
- Base of the unit insulated with 1/8 inch, foil-faced, closed-cell insulation.
- Unit base provisions for forklift and/or crane lifting on three sides of unit.

Hail Guards

- Provides condenser coil protection.

Powered or Unpowered Convenience Outlet

- Powered GFCI, 120V/15A, 2 plug, convenience outlet or unpowered GFCI, 120V/20A, 2 plug, convenience outlet.
- When convenience outlet is powered, a service receptacle disconnect will be available.
- Convenience outlet is powered from the line side of the disconnect or circuit breaker, and therefore will not be affected by the position of the disconnect or circuit breaker.
- Available to order when through-the-base electrical with disconnect switch or circuit breaker option is ordered.

Microchannel Coils

- Optimal heat transfer performance due to flat, streamlined tubes with small ports, and metallurgical tube-to-fin bond.
- Reduce system refrigerant charge by up to 50% leading to better compressor reliability.
- Compact all-aluminum microchannel coils reduce the unit weight.
- Recyclable all aluminum coils All aluminium construction minimizes galvanic corrosion.
- Strong aluminum brazed structure provides better fin protection.
- Flat streamlined tubes more dust resistant and easy to clean.
- Coils leak tested at the factory to ensure the pressure integrity.

Compressors

- All units have direct-drive, hermetic, scroll type compressors with centrifugal type oil pumps.
- Suction gas-cooled motor with voltage utilization range of plus or minus 10 percent of unit nameplate voltage.
- Internal overloads standard with scroll compressors.
- Three stages of cooling available on 6 to 17.5 tons units and four stages of cooling available on 20 and 25 tons units.

Filters



- Two inch pleated media filters shall be available on all models.

Frostat

- Utilized as a safety device.
- Opens to prevent freezing temperatures on evaporator coil.
- Temperature will need to rise to 50°F before closing.
- Utilized in low airflow or high outside air applications (cooling only).

Indoor Fan

- Direct drive plenum fan design - 6 to 25 tons units.
- Plenum fan design - backward-curved fan wheel along with an external rotor direct drive variable speed indoor motor.
- Supply fan speed adjustments can be made using the Symbio 700 or Mobile App.
- Motors are thermally protected.
- Variable speed direct drive motors are high efficiency - 6 to 25 tons.

Through-the-Base Electrical with Disconnect Switch

- 3-pole, molded case, disconnect switch with provisions for through-the-base electrical connections.
- Disconnect switch installed within unit in a water tight enclosure.
- Wiring provided from the switch to the unit high voltage terminal block.
- Switch cULus agency recognized.

Note: Disconnect switch sized per NEC and cULus guidelines but will not be used in place of unit overcurrent protection.

Economizer (Standard)

- Available with or without barometric relief.
- Fully modulating 0-100 percent motor and dampers, minimum position setting, preset linkage, wiring harness with plug, spring return actuator and fixed dry bulb control.
- Barometric relief shall provide a pressure operated damper that shall be gravity closing.
- Barometric relief shall prohibit entrance of outside air during the equipment ?off? cycle.
- Optional solid state or differential enthalpy control.
- Arrives in shipping position and shall be moved to the operating position by the installing contractor.

Reference or Comparative Enthalpy

- Reference enthalpy used to measure and communicate outdoor humidity.
- Unit receives and uses information to provide improved comfort cooling while using the economizer.
- Comparative enthalpy measures and communicates humidity for both outdoor and return air conditions, and return air temperature.
- Unit receives and uses information to maximize use of economizer cooling, and to provide maximum occupant comfort control.
- Reference or comparative enthalpy available when a factory or field installed downflow economizer ordered.