Carrier

62X 03-55
Dedicated Vertical or Horizontal Outdoor Air Unit with Optional Energy Conservation Wheel

Installation Instructions

IMPORTANT: This installation instruction contains basic unit installation information including installation of field control devices. For information on unit start-up, service, and operation, refer to the unit Controls, Start-Up, Operation, Service, and Troubleshooting Instructions also enclosed in the unit literature packet.

CONTENTS

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform the basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply. Refer to Fig. 1 to locate label placement.

Follow all safety codes, including ANSI (American National Standards Institute) Z223.1. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguishers available for all brazing operations.

⚠ WARNING

Before performing service or maintenance operations on unit, turn off main power switch to unit. Electrical shock could cause personal injury.

⚠ WARNING

UNIT OPERATION AND SAFETY HAZARD

Failure to follow this warning could cause personal injury, death and/or equipment damage.

R-410A refrigerant systems operate at higher pressures than standard R-22 systems. Do not use R-22 service equipment or components on R-410A refrigerant equipment.

⚠ WARNING

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or loss of life.

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS

- Do not try to light any appliance.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

Installation and service must be performed by a qualified installer, service agency or the gas supplier.

⚠ AVERTISSEMENT

RISQUE D´INCENDIE OU D´EXPLOSION

Si les consignes de sécurité ne sont pas suivies à la lettre, cela peut entraîner la mort, de graves blessures ou des dommages matériels.

Ne pas entreposer ni utiliser d´essence ni autres vapeurs ou liquides inflammables à proximité de cet appareil ou de tout autre appareil.

QUE FAIRE SI UNE ODEUR DE GAZ EST DÉTECTÉE

- Ne mettre en marche aucun appareil.
- Ne toucher aucun interrupteur électrique; ne pas utiliser de téléphone dans le bâtiment.
- Quitter le bâtiment immédiatement.
- Appeler immédiatement le fournisseur de gaz en utilisant le téléphone d´un voisin. Suivre les instructions du fournisseur de gaz.
- Si le fournisseur de gaz n´est pas accessible, appeler le service d´incendie.

L´installation et l´entretien doivent être effectués par un installateur ou une entreprise d´entretien qualifié, ou le fournisseur de gaz.

INSTALLATION

Step 1 — Provide Unit Support

ROOF CURB

Assemble or install accessory roof curb in accordance with instructions shipped with this accessory. See submittal drawings for roof curb dimensions. Install insulation, cant strips, roofing, and counter flashing, if required. For vertical supply and return connections, ductwork can be installed to roof curb before unit is set in place. Ductwork must be attached to curb and not to the unit. Curb must be level. This is necessary to permit unit drain to function properly. Unit leveling tolerance is $\pm$ $^1/_{16}$ in. per linear ft in any direction. Refer to Accessory Roof Curb Installation Instructions for additional information as required. When accessory roof curb is used, unit may be installed on class A, B, or C roof covering material. Carrier roof curb accessories are for flat roofs or slab mounting.

IMPORTANT: The gasketing of the unit to the roof curb is critical for a watertight seal. Install gasket with the roof curb. Improperly applied gasket can also result in air leaks and poor unit performance. Do not slide unit to position on roof curb.

Step 2 — Rig and Place Unit

Inspect unit for transportation damage. See Tables 1-5 for physical data. See Fig. 2 for illustrations on lifting small and large units. File any claim with transportation agency.

⚠ CAUTION

UNIT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage.

All panels must be in place when rigging. Unit is not designed for handling by fork truck when packaging is removed.

If using top crate as spreader bar, once unit is set, carefully lower wooden crate off building roof top to ground. Ensure that no people or obstructions are below prior to lowering the crate.

Do not drop unit; keep upright. Use wooden top skid or spreader bars over unit to prevent sling or cable damage. Rollers may be used to move unit across a roof. Level by using unit rail as a reference; leveling tolerance is $\pm$ $^1/_{16}$ in. per linear ft in any direction. Refer to the DOAS (Dedicated Outdoor Air System) Builder generated submittal for weights and dimensions of a unit.

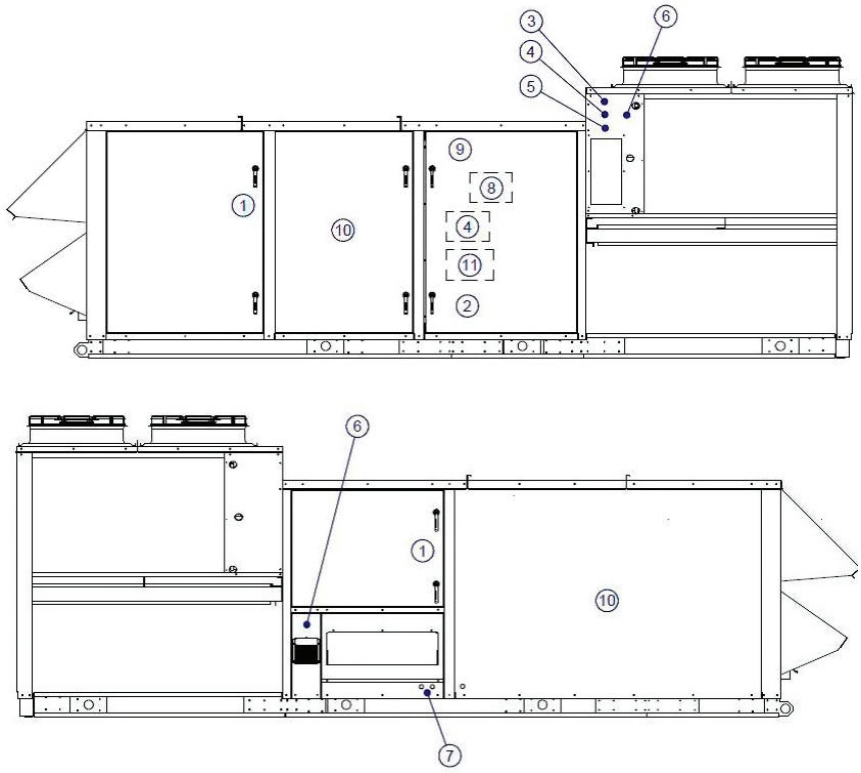
POSITIONING

Maintain clearance around and above unit to provide minimum distance from combustible materials, proper airflow, and service access.

Do not install unit in an indoor location. Do not locate air inlets near exhaust vents or other sources of contaminated air. For proper unit operation, adequate combustion and ventilation air must be provided in accordance with Section 5.3 (Air for Combustion and Ventilation) of the National Fuel Gas Code, ANSI Z223.1 (American National Standards Institute).

Although unit is weatherproof, guard against water from higher level runoff and overhangs.

For gas heat units, locate mechanical draft system flue assembly at least 4 ft from any opening through which combustion products could enter the building, and at least 4 ft from any adjacent building (or per local codes). When the unit is located adjacent to public walkways, flue assembly must be at least 7 ft above grade. Locate unit at least 10 ft away from adjacent units.



ITEM #	PART #	DESCRIPTION
1	91070002	Warning Label
2	91031108	Door Latch Label
3	91070016	CA Cancer Warning Label
4		Manufacturer's Data label
5	91060002	R-410A Label
6	9-21577	Hot Surface Label
7	0527N-0018	Condensate Trap Label
8	057-0048	Copper Conductor Label
9	S-8238	Additional Parts Label
10		Brand Label
11	0527N-0620	Rotation Label

Fig. 1 — Label Placement

Clearances

The clearances below are the required distances that the unit must be away from objects and other units to allow service access and proper operation of the unit. For unit dimensions, refer to Fig. 3-8.

Service Clearances

The minimum recommended service clearance is 48-in. on all sides of unit with access doors.

Ventilation Clearances

In order to ensure proper operation of an air source unit, a 24-in. clearance for ventilation must be maintained on the sides. In addition, specific ventilation situational clearance guidelines are listed below.

- Do not locate the unit under an overhang or near a wall or other equipment that fosters short circuiting hot air to the condenser coil intakes.
- Do not locate unit within 10 ft, or directly downwind, from exhaust fans or flues.
- Do not locate adjacent unit condenser sections closer than 6 ft to one another to reduce the possibility of condenser air circulation.

ROOF MOUNT

Check building codes for weight distribution requirements. Unit operating weight is shown in the DOAS Builder generated submittal. When installing the equipment on top of a building, the following should be considered. Structural members supporting the unit must be sufficiently strong for the weight of the unit and mounting rails. Transmission of sound into the building is sometimes a problem when the structure is not strong enough.

SLAB MOUNT

When installed at ground level, the unit should be mounted on a level concrete slab which should extend at least 2-in. beyond the unit on all sides. The top of the slab should be 2-in. above the ground level. The depth of the slab below the ground level and its structural design is governed by the type of soil and climatic conditions. The slab must not be in contact with any part of the building wall or foundation. The space between the slab and building wall prevents the possibility of transmitting vibration to the building. The dimensions of the slab or roof mount should be checked and verified before the equipment arrives.

INSTALLATION ONTO CURB

Correct placement of the unit onto the curb is important to operating performance. Refer to product submittal drawings to assure proper duct opening alignment.

⚠CAUTION

Do not slide unit into position when it is sitting on the curb. Curb gasketing material may be damaged and leaks may result.

NOTE: For weight references, consult the DOAS Builder program submittal.

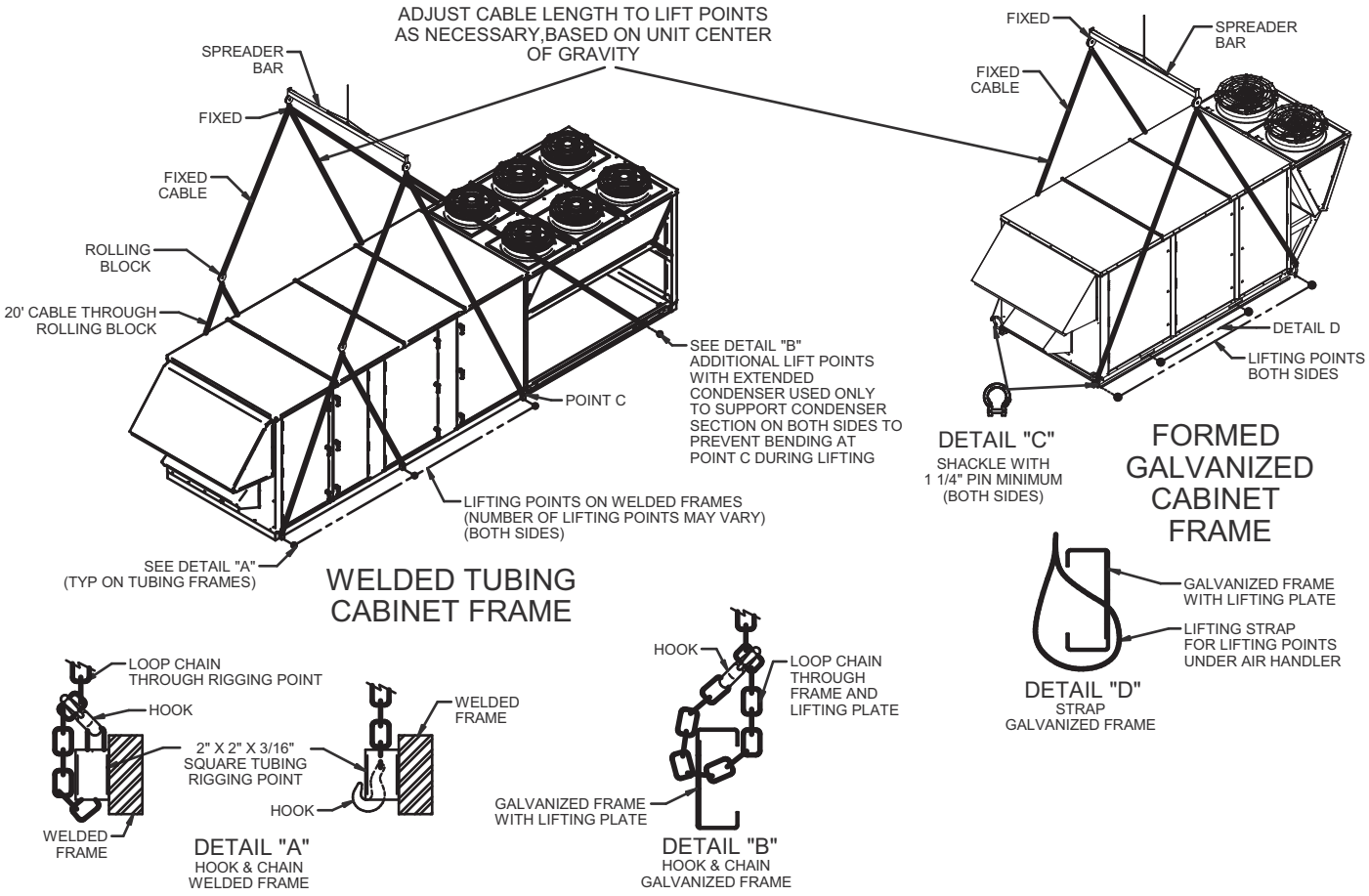
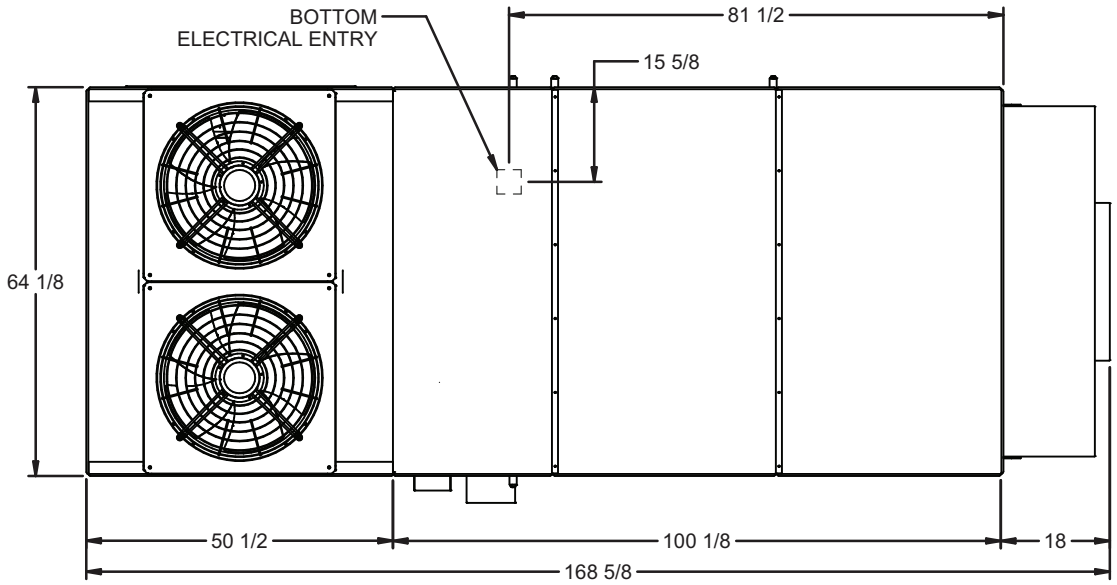
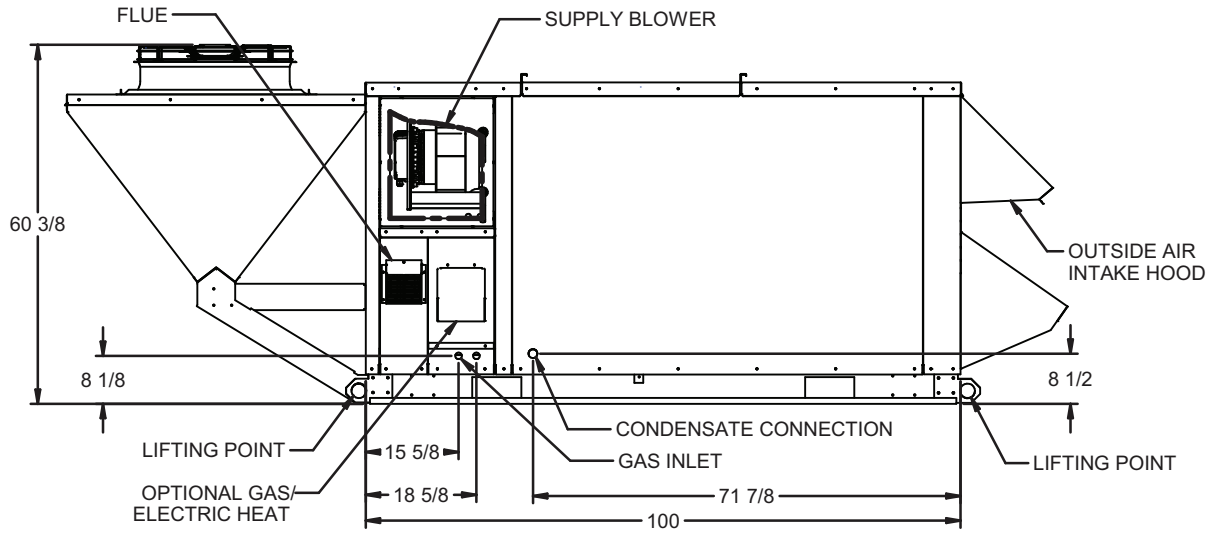


Fig. 2 — Rigging Small and Large Units

TOP VIEW

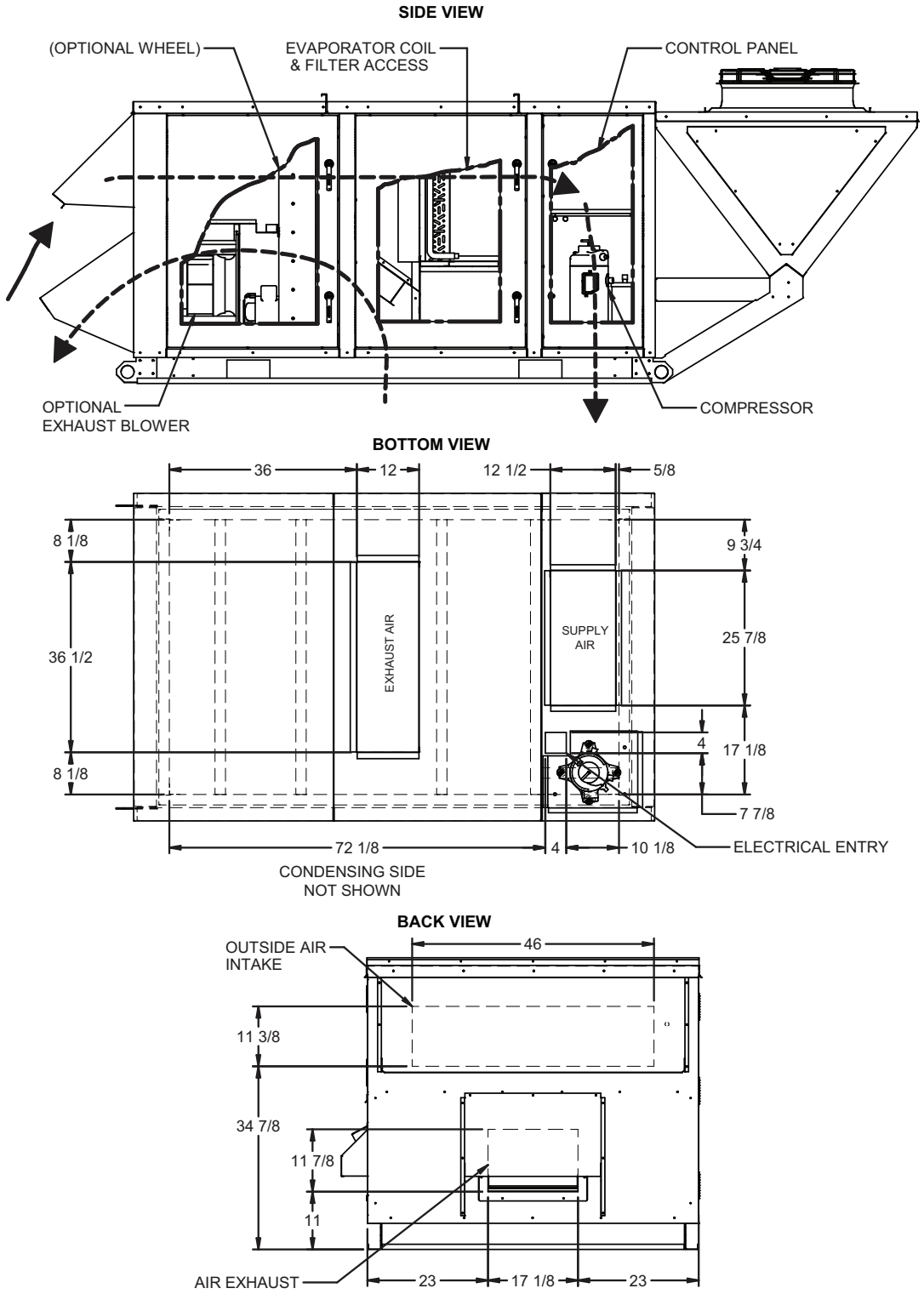


SIDE VIEW



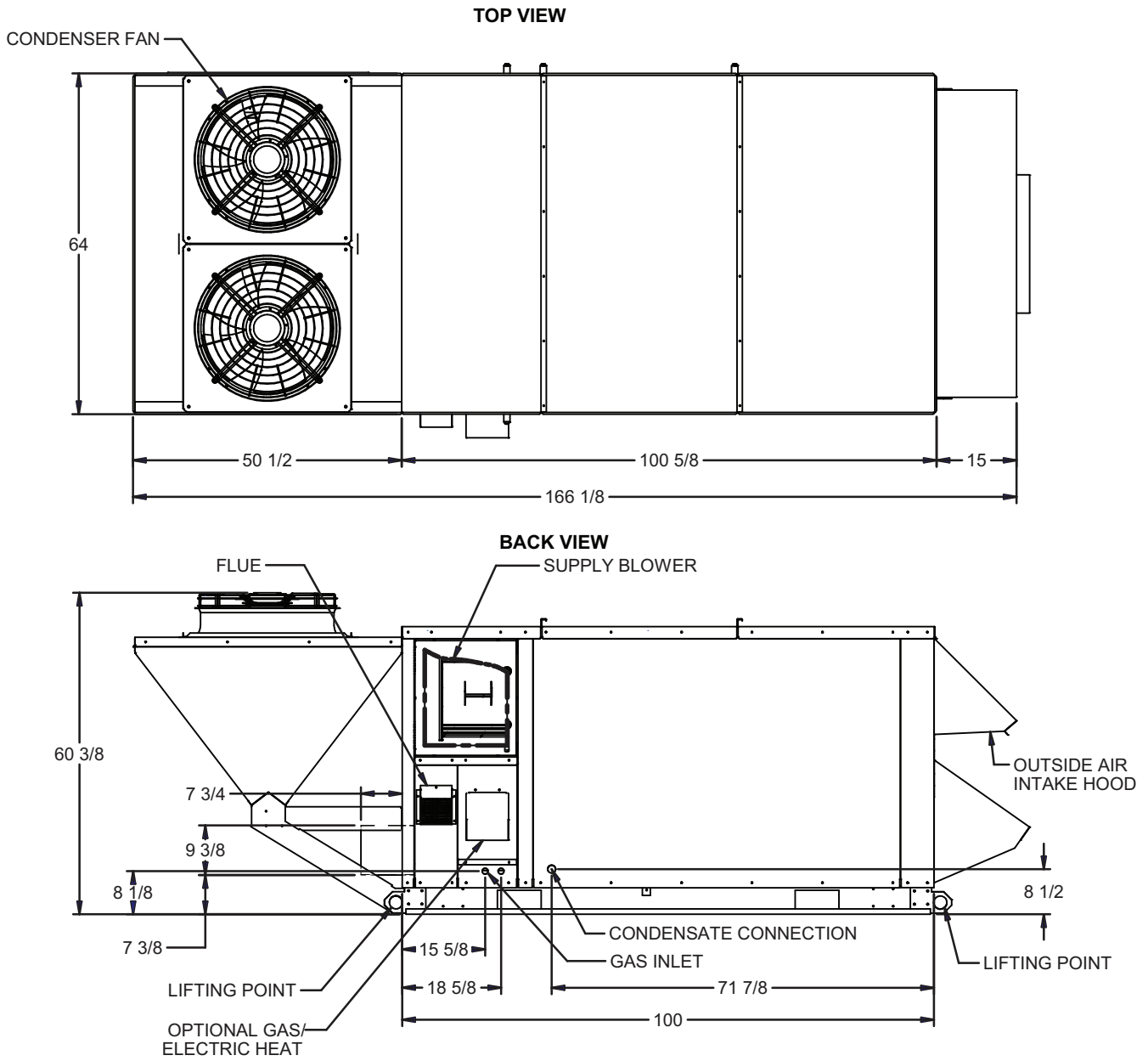
NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 3 — 62X A Cabinet, High Capacity with ERV, Vertical Supply, Vertical Exhaust



NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 3 — 62X A Cabinet, High Capacity with ERV, Vertical Supply, Vertical Exhaust (cont)



NOTES:
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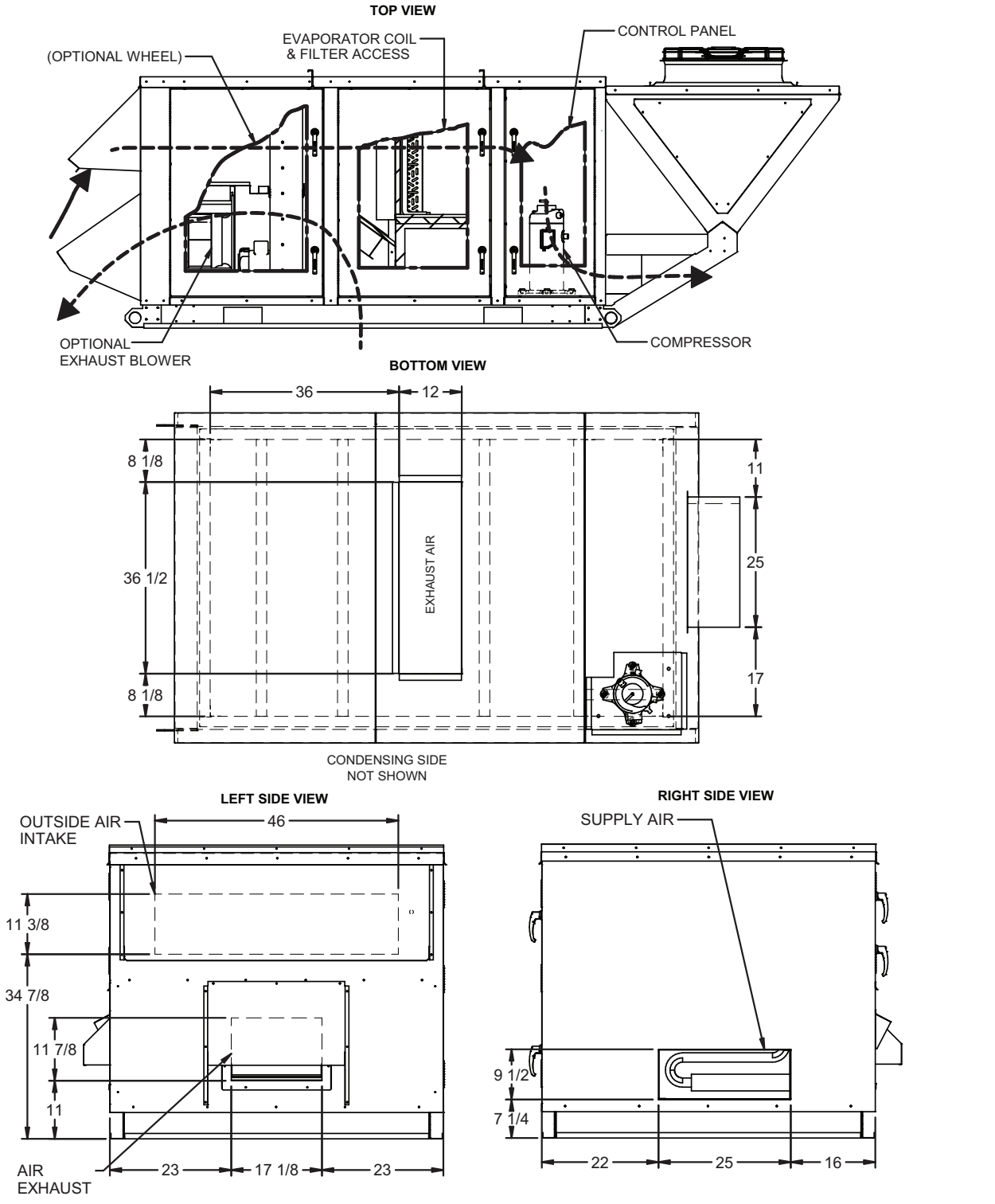
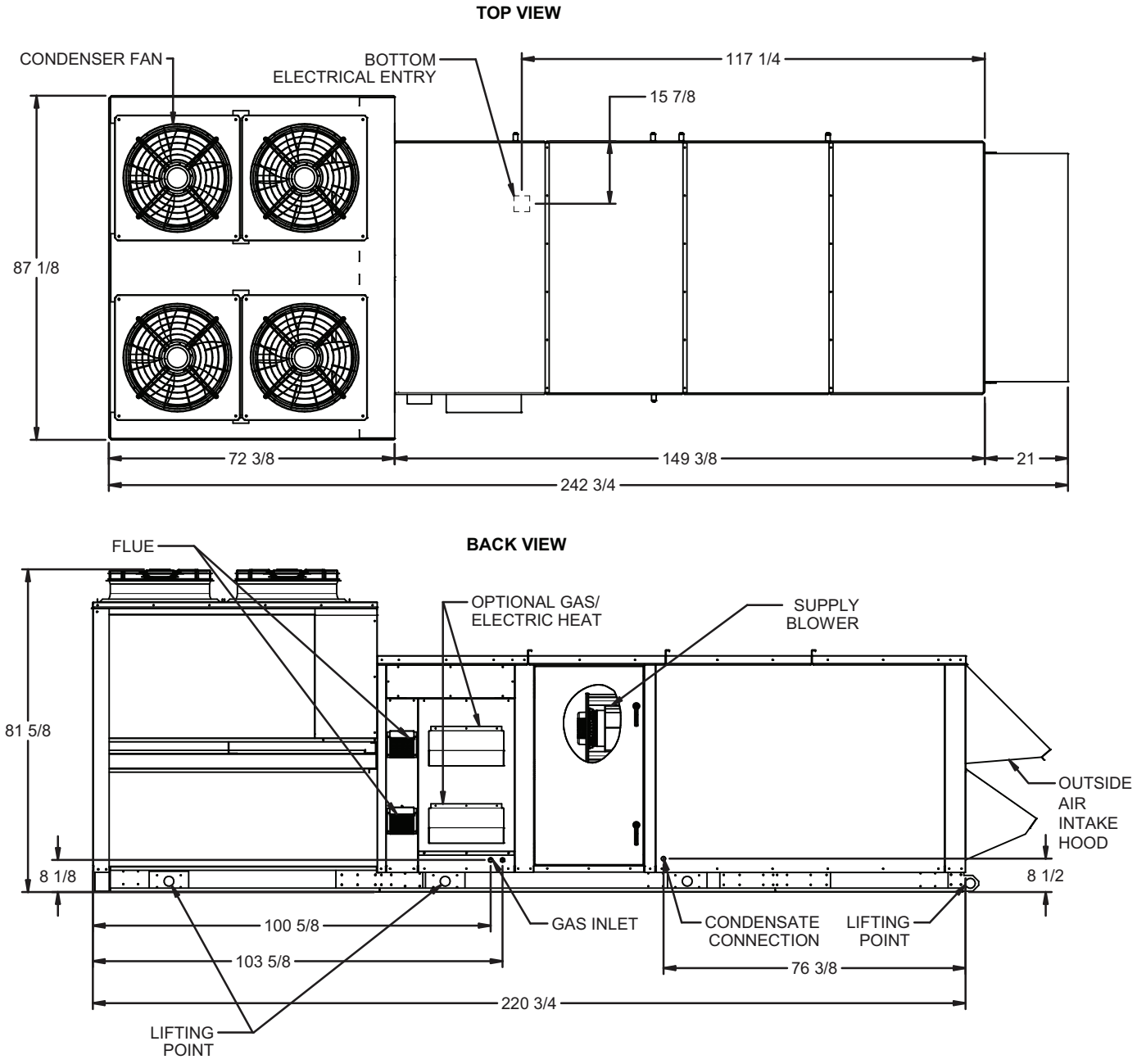
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 4 — Unit Dimensions — 62X A Cabinet, High Capacity with ERV, Horizontal Supply, Vertical Exhaust



NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 4 — Unit Dimensions — 62X A Cabinet, High Capacity with ERV, Horizontal Supply, Vertical Exhaust (cont)



NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 5 — Unit Dimensions — 62X BXL Cabinet, High Capacity (Size 20), ERV, Vertical Supply, Vertical Exhaust

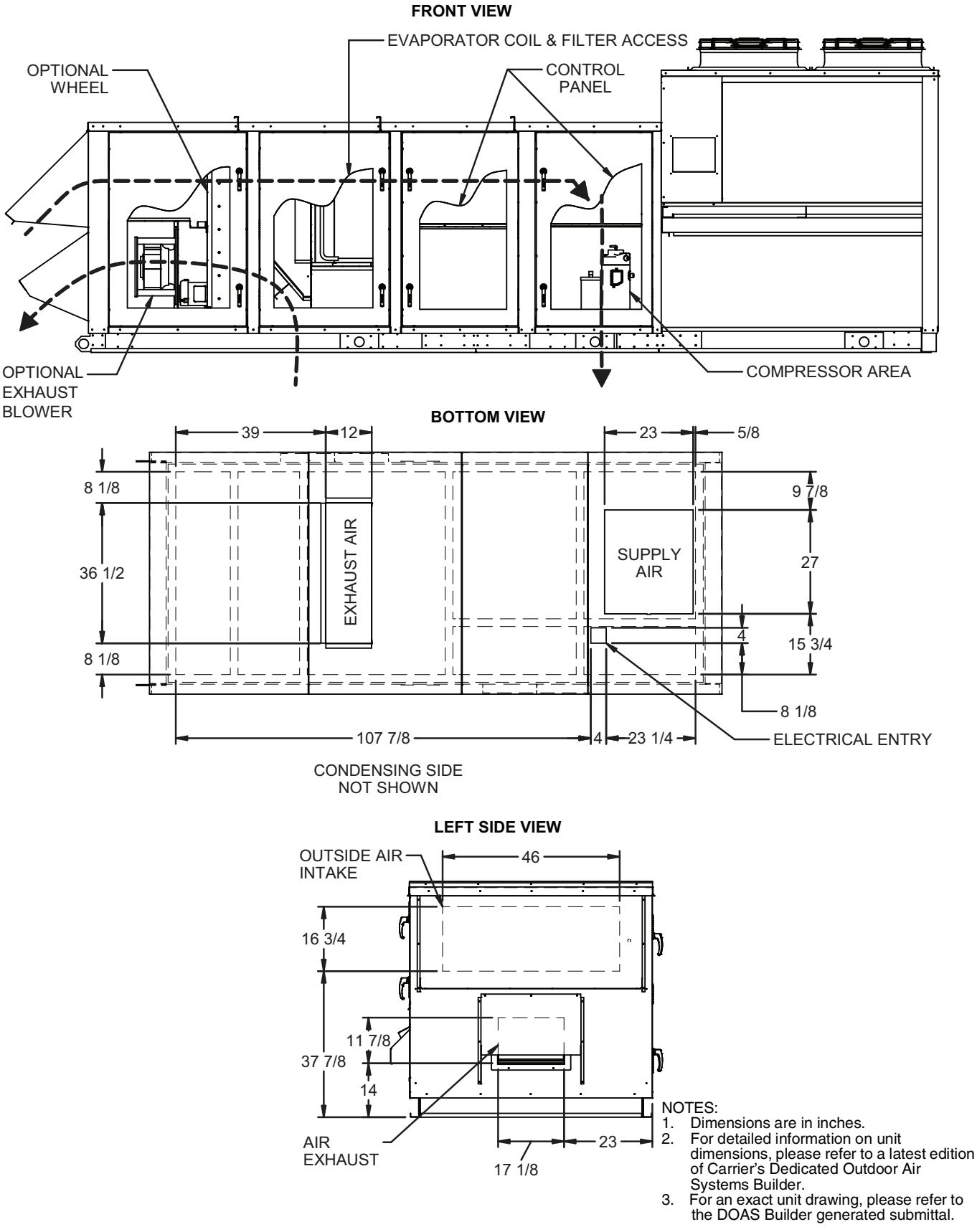
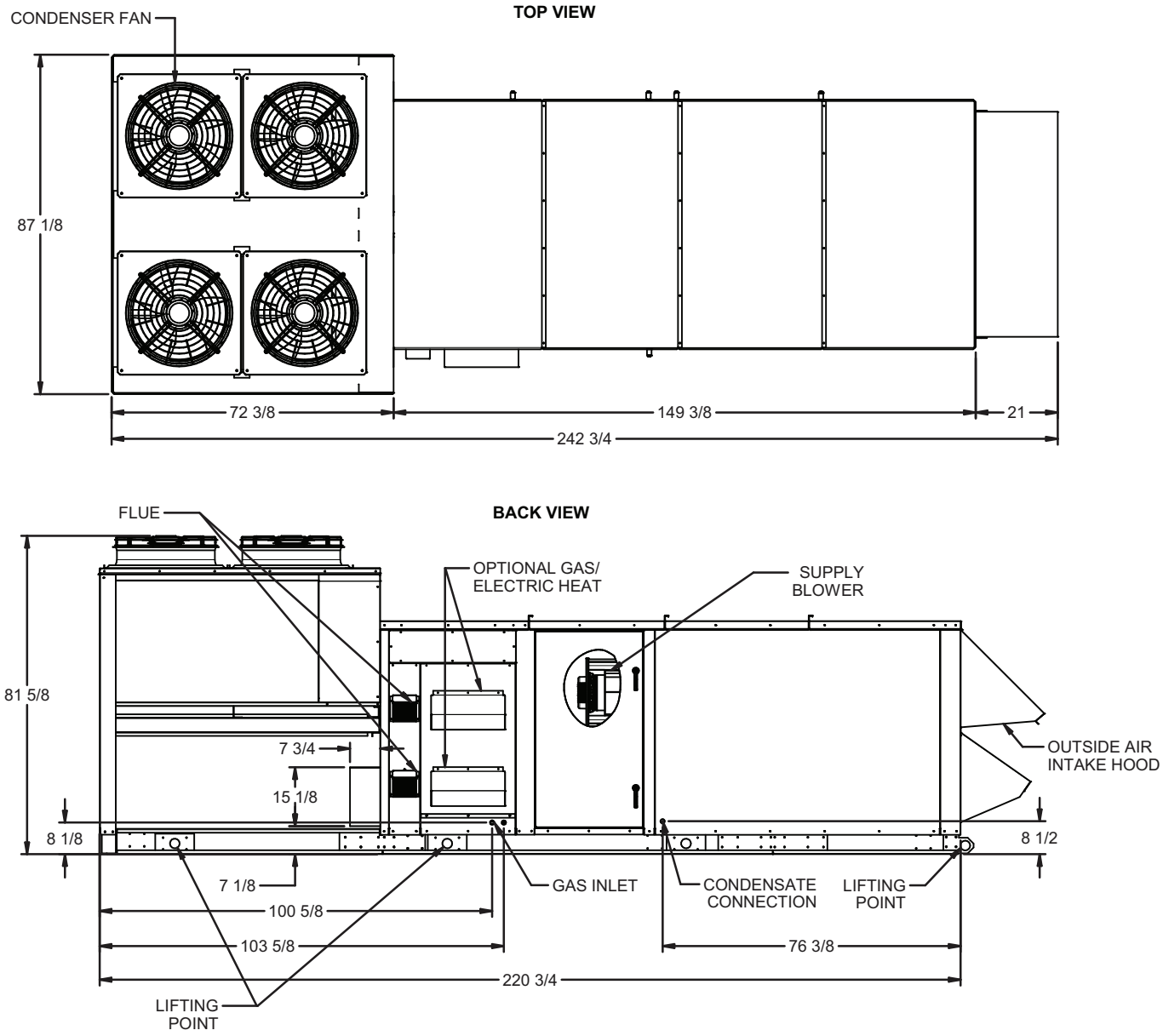
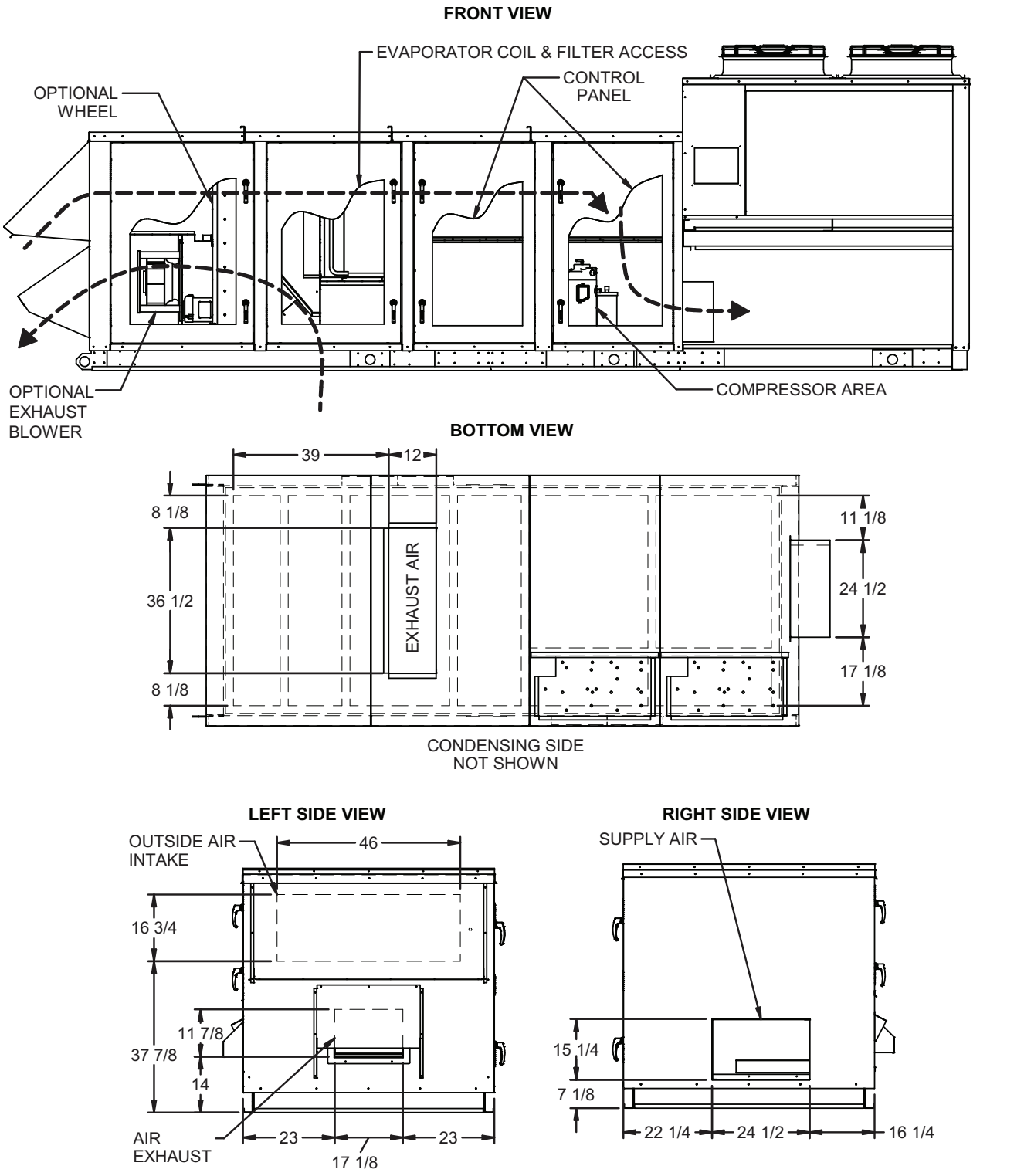


Fig. 5 — Unit Dimensions — 62X BXL Cabinet, High Capacity (Size 20), ERV, Vertical Supply, Vertical Exhaust (cont)



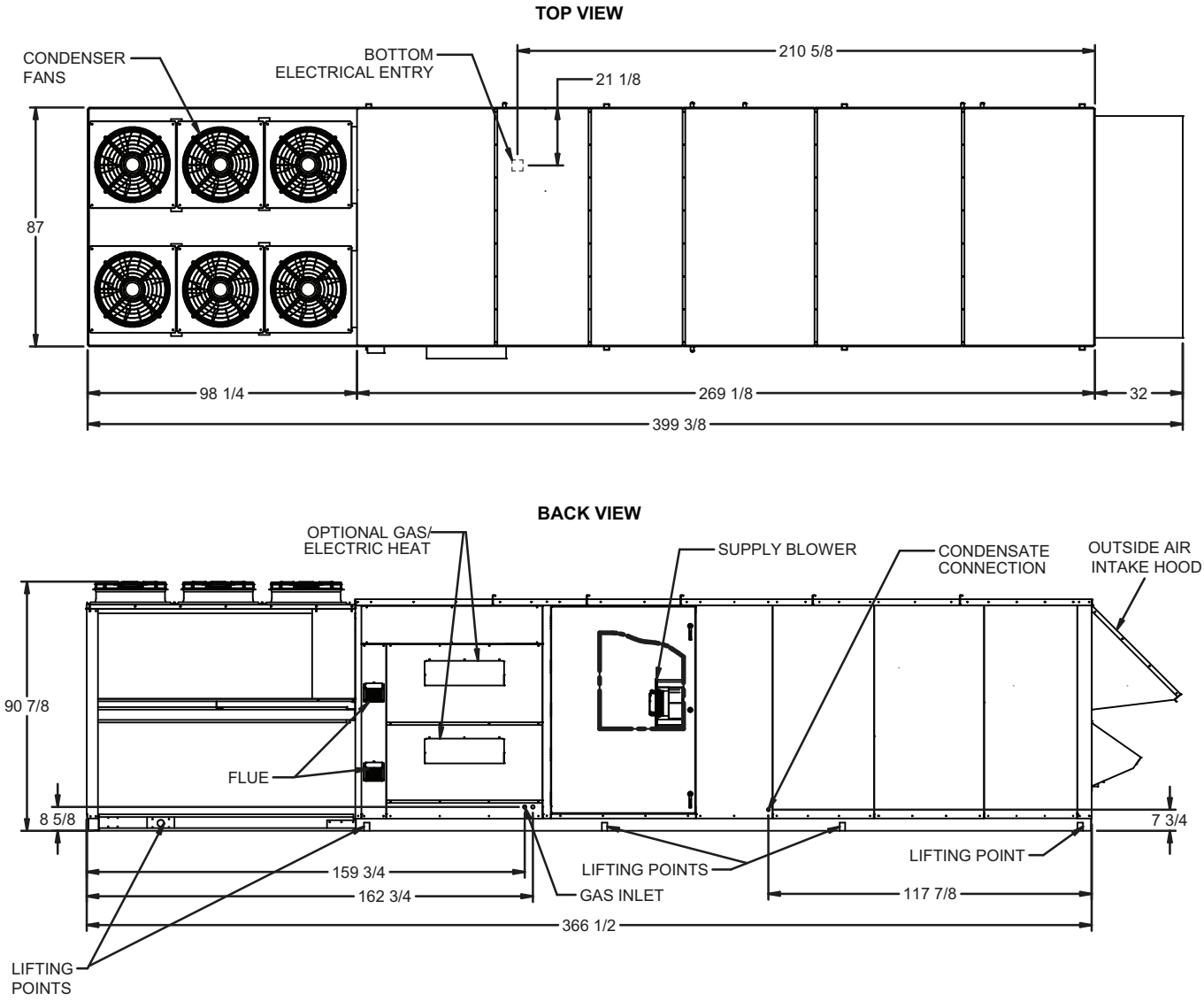
NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 6 — Unit Dimensions — 62X BXL Cabinet, High Capacity (Size 20) ERV, Horizontal Supply, Vertical Exhaust



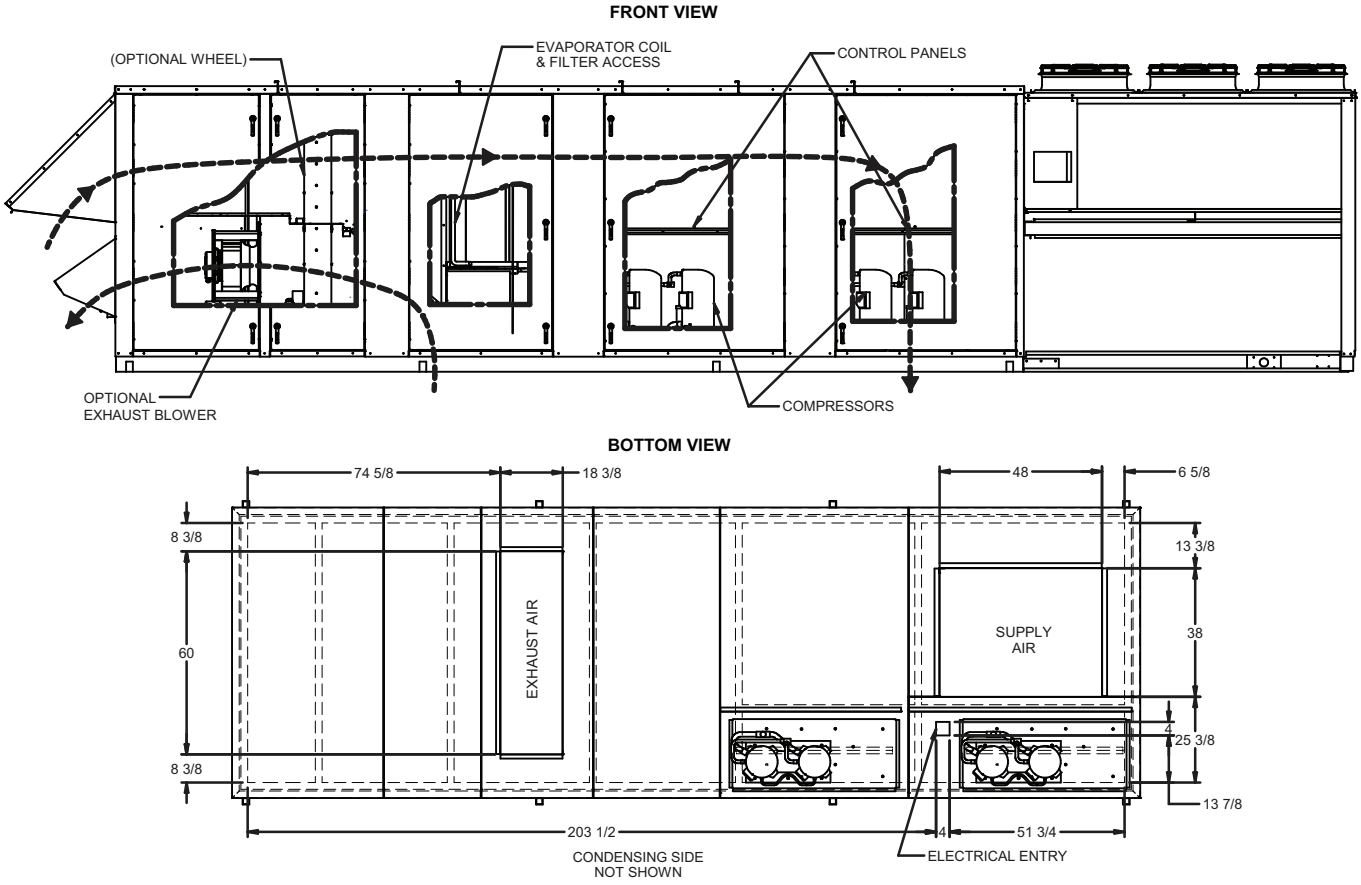
NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 6 — Unit Dimensions — 62X BXL Cabinet, High Capacity (Size 20) ERV, Horizontal Supply, Vertical Exhaust (cont)



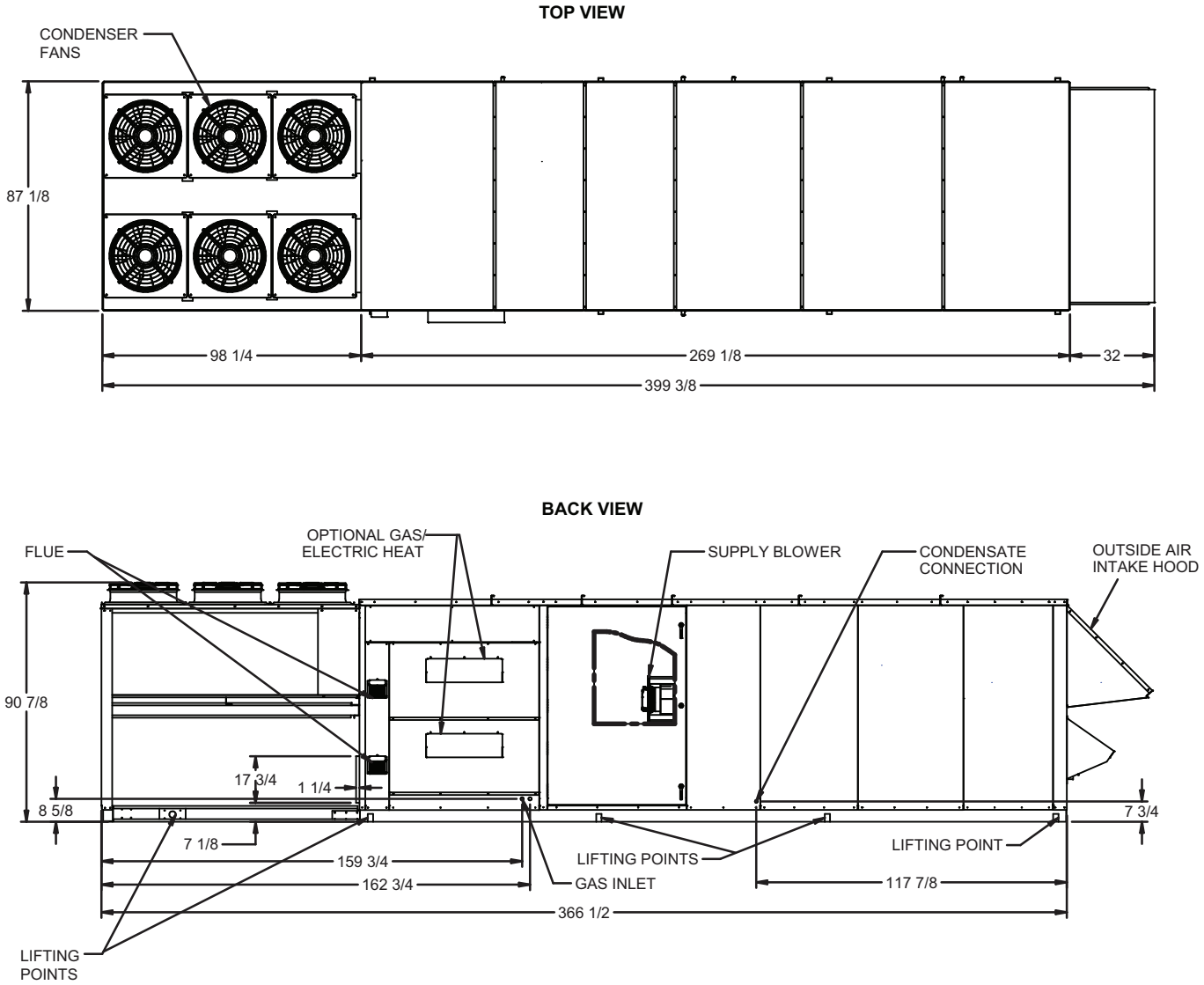
NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 7 — Unit Dimensions — 62X DXL Cabinet, High Capacity (Sizes 25-35), ERV, Vertical Supply, Vertical Exhaust



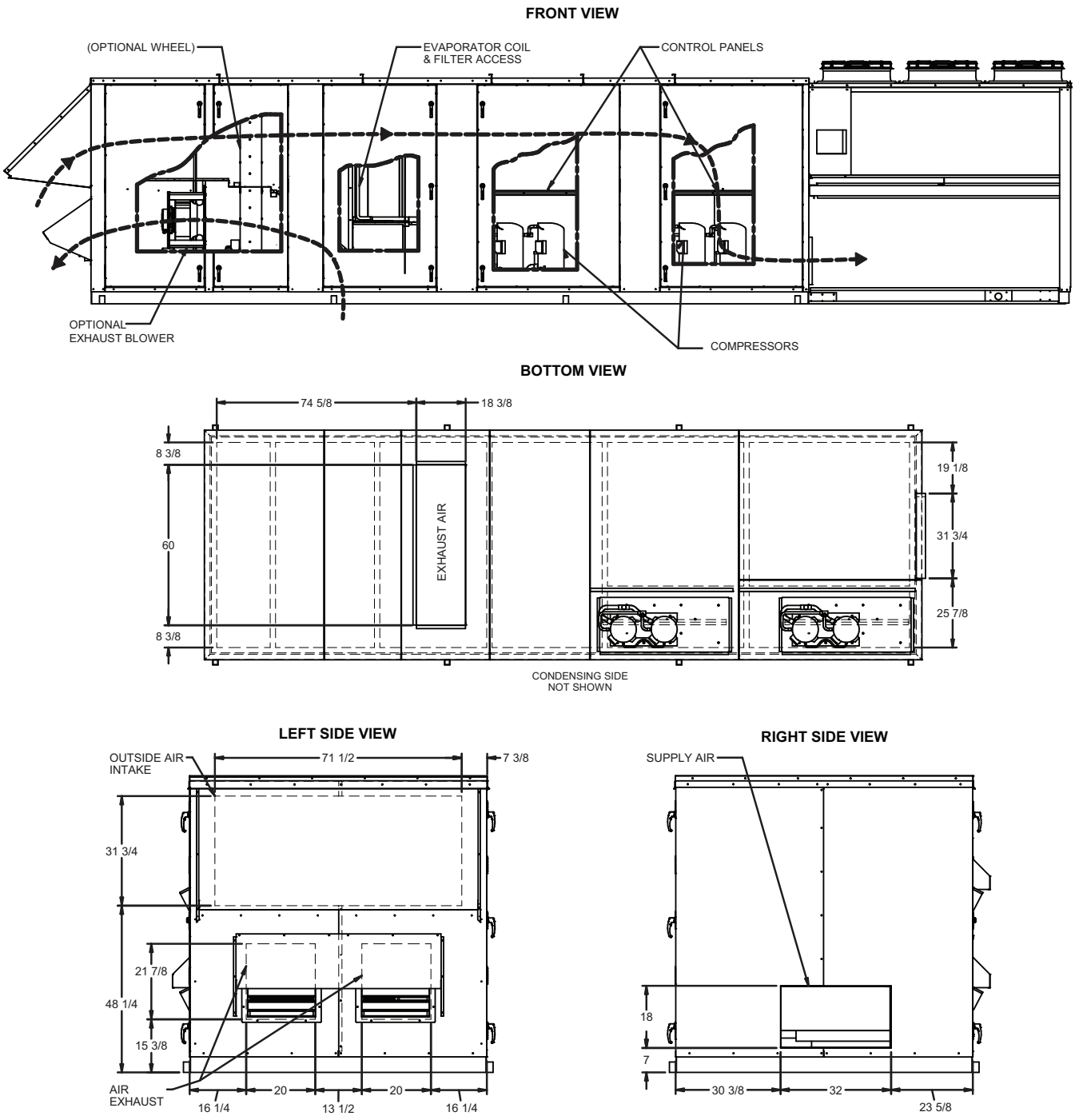
NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 7 — Unit Dimensions — 62X DXL Cabinet, High Capacity (Sizes 25-35), ERV, Vertical Supply, Vertical Exhaust (cont)



NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 8 — Unit Dimensions — 62X DXL Cabinet, High Capacity (Sizes 25-35), ERV, Horizontal Supply, Vertical Exhaust



NOTES:
1. Dimensions are in inches.
2. For detailed information on unit dimensions, please refer to a latest edition of Carrier's Dedicated Outdoor Air Systems Builder.
3. For an exact unit drawing, please refer to the DOAS Builder generated submittal.

Fig. 8 — Unit Dimensions — 62X DXL Cabinet, High Capacity (Sizes 25-35), ERV, Horizontal Supply, Vertical Exhaust (cont)

Table 1 — Physical Data — 62X A Cabinet

UNIT 62X A CABINET	03	04	05	06	07	08
NOMINAL CAPACITY (TONS)	3	4	5	6	7	8
COMPRESSOR						
Unit without ERV						
Quantity/Unit…Model	1...ZPD34	1...ZPD42	1...ZPD51	1...ZPD54	1ZPD...72	1ZPD...83
Unit with ERV						
Quantity/Unit…Model	1...ZPD34	1...ZPD42	1...ZPD51	1...ZPD61	1ZPD...72	1ZPD...83
Number of Refrigerant Circuits	1					
Oil	Pre-Charged					
REFRIGERANT TYPE	R-410A					
CONDENSER COIL						
Minimum Capacity Face Area (sq ft)	10.0	10.0	10.0	13.5	13.5	13.5
High Capacity Face Area (sq ft)	—	—	—	—	27	27
CONDENSER FAN						
Minimum Capacity						
Nominal Cfm (total)	4000	4000	4000	5200	5200	5200
Quantity … Diameter (mm)	1...630					
Motor Hp	1.3					
High Capacity						
Nominal Cfm (total)	—	—	—	—	11200	11200
Quantity … Diameter (mm)	—	—	—	—	2...630	2...630
Motor Hp	—	—	—	—	1.3	1.3
HIGH-PRESSURE SWITCH (PSIG)						
Cutout	640					
Reset (Manual)	595					
EVAPORATOR COIL						
Face Area without ERV (sq ft)	2.8	2.8	2.8	4.7	4.7	4.7
Face Area with ERV (sq ft)	7	7	7	Use B Cabinet		
SUPPLY FAN						
Backward Curved ECM (mm)	280, 355					
Airfoil (in.)	—					
Backward Inclined (in.)	—					
Nominal Cfm 100% OA	450	600	750	900	1050	1200
OPTIONAL HOT GAS REHEAT AND LIQUID SUBCOOLING COIL						
Face Area without ERV (sq ft)	2.8	2.8	2.8	4.7	4.7	4.7
Face Area with ERV (sq ft)	7	7	7	Use B Cabinet		
LOW-PRESSURE SWITCH (PSIG)						
Cutout	35					
Reset (Auto)	55					
CONDENSATE DRAIN CONNECTION (NPT) (in.)	0.75					
OPTIONAL GAS HEAT SECTION						
Gas Input Sizes (Btuh x 1000)	75, 100					
Control Type						
Stages (no. of stages)	2					
Modulating (% range)*	5:1, 10:1					
Efficiency (Steady State) (%)	80					
Supply Line Pressure Range (in. wg)	5.0 min. - 13.5 max					
Rollout Switch Cutout Temp (F)	350					
Gas Valve Quantity	1 Std - 2 with modulating option					
Manifold Pressure (in. wg)						
Natural Gas Std	3.5					
LP Gas Special Order	10					
OPTIONAL ELECTRIC HEAT						
Size Range (kW)	5, 10, 15, 20, 25, 30					
Control Type						
Stages (no. of stages)	1, 2, 4					
SCR (% range)*	0-100					
OPTIONAL HOT WATER HEAT COIL WITH ERV	22.5 x 42, 2 row, 10 FPI, with 1/2 in. tubes - 7/8 stub connection			Use B Cabinet		
OPTIONAL HOT WATER HEAT COIL WITHOUT ERV	17.5 x 20, 2 row, 10 FPI, with 1/2 in. tubes			17.5 x 34, 2 row, 10 FPI, with 1/2 in. tubes		

Table 1 — Physical Data — 62X A Cabinet (cont)

UNIT 62X A CABINET	03	04	05	06	07	08
NOMINAL CAPACITY (TONS)	3	4	5	6	7	8
OUTDOOR AIR FILTERS						
Quantity … Size (in.) with ERV						
Standard 2-in. MERV 8		2...24x24			Use B Cabinet	
Optional 4-in.						
MERV 8		2...24x24				
MERV 11		2...24x24			Use B Cabinet	
MERV 14		2...24x24				
Quantity … Size (in.) without ERV						
Standard 2-in. MERV 8		1..20x24			1...16x20, 1...20x20	
Optional 4-in.						
MERV 8		1...20x24			1...16x20, 1...20x20	
MERV 11		1...20x24			1...16x20, 1...20x20	
MERV 14		1...20x24			1...16x20, 1...20x20	
OPTIONAL ERV						
Type		Molecular Sieve			Use B Cabinet	
Diameter ... depth (in.)		24...4, 32...4, 36...4			Use B Cabinet	
OPTIONAL ERV FILTERS						
Quantity … Size (in.)						
with 24 in. ERV	4...12x24	4...12x24	4...12x24		Use B Cabinet	
with 32 in. ERV	6...18x20	6...18x20	6...18x20		Use B Cabinet	
with 36 in. ERV	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24		Use B Cabinet Use B Cabinet	
OPTIONAL EXHAUST FAN						
Backward Curved ECM (mm)			280, 355			
Airfoil (in.)			—			
Backward Inclined (in.)			—			
Nominal Cfm	450	600	750	900	1050	1200

LEGEND

ECM — Electronically Commutated Motor
ERV — Energy Recovery Ventilator
FPI — Fins per Inch
LP — Liquid Propane
OA — Outdoor Air
SCR — Silicon-Controlled Rectifier

* Optional.

NOTE: For unit and component weights, refer to the latest edition of Carrier's Dedicated Outdoor Air Systems Builder.

Table 2 — Physical Data — 62X, B-BXL Cabinet

UNIT 62X B CABINET	03	04	05	06	07	08	10	12	15	18	20
NOMINAL CAPACITY (TONS)	3	4	5	6	7	8	10	12	15	17.5	20
COMPRESSOR											
Unit without ERV											
Quantity/Unit … Model	1...ZPD34	1...ZPD42	1...ZPD51	1...ZPD54	1...ZPD72	1...ZPD83	1...ZPD51, 1...ZP51 or 2...ZPD51	1...ZPD61, 1...ZP61 or 2...ZPD61	1...ZPD72, 1...ZP72 or 2...ZPD72	1...ZPD91, 1...ZP91 or 2...ZPD91	1...ZPD103, 1...ZPD103 or 2...ZPD103
Unit with ERV											
Quantity/Unit … Model	1...ZPD34	1...ZPD42	1...ZPD51	1...ZPD61	1...ZPD72	1...ZPD83	1...ZPD51, 1...ZP51 or 2...ZPD51	1...ZPD61, 1...ZP61 or 2...ZPD61	1...ZPD83, 1...ZP83 or 2...ZPD83	1...ZPD91, 1...ZP91 or 2...ZPD91	1...ZPD103, 1...ZPD103 or 2...ZPD103
Number of Refrigerant Circuits	1								2		
Oil	Pre-Charged										
REFRIGERANT TYPE	R-410A										
CONDENSER COIL											
Minimum Capacity Face Area (sq ft)	10.0	10.0	10.0	13.5	13.5	13.5	27	27	27	27	40
High Capacity Face Area (sq ft)	—	—	—	—	27.0	27.0	—	—	40	40	54
CONDENSER FAN											
Minimum Capacity											
Nominal Cfm (total)	4000	4000	4000	5200	5200	5200	11200	11200	10600	10600	15600
Quantity … Diameter (mm)	1...630	1...630	1...630	1...630	1...630	1...630	2...630	2...630	2...630	2...630	3...630
Motor Hp	1.3										
High Capacity											
Nominal Cfm (total)	—	—	—	—	11200	11200	—	—	15600	15600	20800
Quantity … Diameter (in.)	—	—	—	—	2...630	2...630	—	—	3...630	3...630	4...630
Motor Hp	—	—	—	—	1.3	1.3	—	—	1.3	1.3	1.3
HIGH-PRESSURE SWITCH (PSIG)											
Cutout	640										
Reset (Manual)	595										
EVAPORATOR COIL											
Face Area without ERV (sq ft)	2.8	2.8	2.8	4.7	4.7	4.7	7	7	7	10	10
Face Area with ERV (sq ft)	7	7	7	10	10	10	12	12	Use C Cabinet		
SUPPLY FAN											
Backward Curved ECM (mm)	355, 450										
Airfoil (in.)	12, 14, 16										
Backward Inclined (in.)	10, 11, 12, 14, 16										
Nominal Cfm 100% OA	450	600	750	900	1050	1200	1500	1800	2250	2700	3000
Motor Hp Range	ECM, 1, 1.5, 2, 3, 5										
OPTIONAL HOT GAS REHEAT AND LIQUID SUBCOOLING COIL											
Face Area without ERV (sq ft)	2.8	2.8	2.8	4.7	4.7	4.7	7	7	7	10	10
Face Area with ERV (sq ft)	7	7	7	10	10	10	12	12	Use C Cabinet		
LOW-PRESSURE SWITCH (PSIG)											
Cutout	35										
Reset (Auto)	55										
CONDENSATE DRAIN CONNECTION (NPT) (in.)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
OPTIONAL GAS HEAT SECTION											
Gas Input Sizes (Btuh x 1000)	75, 100, 150, 200										
Gas Input Sizes (Btuh x 1000) XL Cabinet	200, 300, 400										
Control Type											
Stages (no. of stages)	2										
Stages XL Cabinet (no. of stages)	4										
Modulating (% range)	5:1, 10:1*										
Efficiency (Steady State) (%)	80										
Supply Line Pressure Range (in. wg)	5.0 min. - 13.5 max										
Rollout Switch Cutout Temp (F)	350										
Gas Valve Quantity	1 Std - 2 with modulating option										
Manifold Pressure (in. wg)											
Natural Gas Std	3.5										
LP Gas Special Order	10										
OPTIONAL ELECTRIC HEAT											
Size Range (kW)	5, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100										
Control Type											
Stages (no. of stages)	1, 2, 4										
SCR (% range)	0-100										
OPTIONAL HOT WATER HEAT COIL WITH ERV	22.5 x 42, 2 row, 10 FPI, with 1/2 in. tubes				30 x 45, 2 row, 10 FPI, with 1/2 in. tubes		33.75 x 44, 2 row, 10 FPI, with 1/2 in. tubes		Use C Cabinet		
OPTIONAL HOT WATER HEAT COIL WITHOUT ERV	17.5 x 20, 2 row, 10 FPI, with 1/2 in. tubes			17.5 x 34, 2 row, 10 FPI, with 1/2 in. tubes			22.5 x 42, 2 row, 10 FPI, with 1/2 in. tubes			30 x 45, 2 row, 10 FPI, with 1/2 in. tubes	

Table 2 — Physical Data — 62X, B-BXL Cabinet (cont)

UNIT 62X B CABINET	03	04	05	06	07	08	10	12	15	18	20
NOMINAL CAPACITY (TONS)	3	4	5	6	7	8	10	12	15	17.5	20
OUTDOOR AIR FILTERS											
Quantity … Size (in.) with ERV											
Standard 2-in. MERV 8		2...24x24			4...16 x 25			2...16x25, 2...20x25		Use C Cabinet	
Optional 4-in.											
MERV 8		2...24x24			4...16 x 25			2...16x25, 2...20x25		Use C Cabinet	
MERV 11		2...24x24			4...16 x 25			2...16x25, 2...20x25		Use C Cabinet	
MERV 14		2...24x24			4...16 x 25			2...16x25, 2...20x25		Use C Cabinet	
Quantity … Size (in.) without ERV											
Standard 2-in. MERV 8		1...20x24			1...16x20, 1...20x20			2...24x24		4...16x25	
Optional 4-in.											
MERV 8		1...20x24			1...16x20, 1...20x20			2...24x24		4...16x25	
MERV 11		1...20x24			1...16x20, 1...20x20			2...24x24		4...16x25	
MERV 14		1...20x24			1...16x20, 1...20x20			2...24x24		4...16x25	
OPTIONAL ERV											
Type						Molecular Sieve					
Diameter... depth (in.)					24...4, 32...4, 36...4, 42...4					Use C Cabinet	
OPTIONAL ERV FILTERS											
Quantity … Size (in.)											
with 24 in. ERV	4...12x24	4...12x24	4...12x24	4...12x24	4...12x24	4...12x24	4...12x24	4...12x24		Use C Cabinet	
with 32 in. ERV	6...18x20	6...18x20	6...18x20	6...18x20	6...18x20	6...18x20	6...18x20	6...18x20		Use C Cabinet	
with 36 in. ERV	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24	2...20x20, 2...20x24		Use C Cabinet Use C Cabinet	
with 42 in. ERV	2...12x24, 4...20x24	2...12x24, 4...20x24	2...12x24, 4...20x24	2...12x24, 4...20x24	2...12x24, 4...20x24	2...12x24, 4...20x24	2...12x24, 4...20x24	2...12x24, 4...20x24		Use C Cabinet Use C Cabinet	
OPTIONAL EXHAUST FAN											
Backward Curved ECM - (mm)						355, 450					
Airfoil (in.)						12, 14, 16					
Backward Inclined - (in.)						10, 11, 12, 14, 16					
Nominal Cfm 100%	450	600	750	900	1050	1200	1500	1800	2250	2700	3000
Motor Hp Range						ECM, 1,1.5,2,3,5					

LEGEND

ECM — Electronically Commutated Motor
ERV — Energy Recovery Ventilator
FPI — Fins per Inch
LP — Liquid Propane
OA — Outdoor Air
SCR — Silicon-Controlled Rectifier

* XL gas heater only available in 10:1 modulation; SCR not available on 5 kW electric heater.

Table 3 — Physical Data — 62X, C-CXL Cabinet

UNIT 62X C CABINET	07	08	10	12	15	18	20	25	30	35
NOMINAL CAPACITY (TONS)	7	8	10	12	15	17.5	20	25	30	35
COMPRESSOR										
Unit without ERV										
Quantity/Unit … Model	1...ZPD72	1...ZPD83	1...ZPD51, 1...ZP51 or 2...ZPD51	1...ZPD61, 1...ZP61 or 2...ZPD61	1...ZPD72, 1...ZP72 or 2...ZPD72	1...ZPD91, 1...ZP91 or 2...ZPD91	1...ZPD103, 1...ZP103 or 2...ZPD103	1...ZPD120, 1...ZP120 or 2...ZPD120	1...ZPD137, 1...ZP137 or 2...ZPD137	1...ZPD182, 1...ZP182 or 2...ZPD182
Unit with ERV										
Quantity/Unit … Model	1...ZPD72	1...ZPD83	1...ZPD51, 1...ZP51 or 2...ZPD51	1...ZPD61, 1...ZP61 or 2...ZPD61	1...ZPD83, 1...ZP83 or 2...ZPD83	1...ZPD91, 1...ZP91 or 2...ZPD91	1...ZPD103, 1...ZP103 or 2...ZPD103	1...ZPD137, 1...ZP137 or 2...ZPD137	1...ZPD154, 1...ZP154 or 2...ZPD154	1...ZPD182, 1...ZP182 or 2...ZPD182
Number of Refrigerant Circuits	1	1	2	2	2	2	2			
Oil	Pre-Charged									
REFRIGERANT TYPE	R-410A									
CONDENSER COIL										
Standard Efficiency Condenser (sq ft)	—	—	27	27	27	27	40	40	54	54
High Efficiency Condenser (sq ft)	27	27	—	—	40	40	54	54	80	80
CONDENSER FAN										
Standard Capacity Condenser										
Nominal Cfm (total)	—	—	10600	10600	10600	10600	15600	15600	20800	20800
Quantity … Diameter (mm)	—	—	2...630	2...630	2...630	2...630	3...630	3...630	4...630	4..630
Motor Hp	—	—	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
High Capacity Condenser										
Nominal Cfm (total)	11200	11200	—	—	15600	15600	20800	20800	31200	31200
Quantity … Diameter (mm)	2...630	2...630	—	—	3...630	3...630	4...630	4...630	6...630	6...630
Motor Hp	1.3	1.3	—	—	1.3	1.3	1.3	1.3	1.3	1.3
HIGH-PRESSURE SWITCH (PSIG)										
Cutout	640									
Reset (Manual)	595									
EVAPORATOR COIL										
Face Area without ERV (sq ft)	Use B Cabinet		7	7	7	10	10	12	16	16
Face Area with ERV (sq ft)	10	10	12	12	16	16	16	Use D Cabinet		
SUPPLY FAN										
Backward Curved ECM (mm)	450									
Airfoil (in.)	14, 16, 18, 20									
Backward Inclined (in.)	14, 16, 18, 20									
Nominal Cfm 100% OA	1,050	1200	1500	1800	2250	2700	3000	3750	4500	5250
Motor Hp Range	ECM, 1, 1.5, 2, 3, 5, 7.5, 10									
OPTIONAL HOT GAS REHEAT AND LIQUID SUBCOOLING COIL										
Face Area w/o Wheel (sq ft)	Use B Cabinet		7	7	7	10	12	12	16	16
Face Area w/ Wheel (sq ft)	10	10	12	12	16	16	16	Use D Cabinet		
LOW-PRESSURE SWITCH (PSIG)										
Cutout	35									
Reset (Auto)	55									
CONDENSATE DRAIN CONNECTION (NPT) (in.)	.75									
OPTIONAL GAS HEAT SECTION										
Gas Input Sizes (Btuh x 1000)	75, 100, 150, 200, 250, 300									
Gas Input Sizes (Btuh x 1000) XL Cabinet	200, 300, 400, 600, 700, 800									
Control Type										
Stages (no. of stages)	2									
Stages XL Cabinet (no. of stages)	4									
Modulating (% range)	5:1, 10:1*									
Efficiency (Steady State) (%)	80									
Supply Line Pressure Range (in. wg)	5.0 min. - 13.5 max									
Manifold Pressure (in. wg)										
Natural Gas Std	3.5									
LP Gas Special Order	10									
OPTIONAL ELECTRIC HEAT										
Size Range (kW)	5, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100									
Control Type										
Stages (no. of stages)	1,2,4									
SCR (% range)	0-100									
OPTIONAL HOT WATER HEAT COIL WITH ERV	30 x 45, 2 row, 10 FPI, with 1/2 in. tubes		33.75 x 44, 2 row, 10 FPI, 1/2 in. tubes		46.25 x 44, 2 row, 10 FPI, 1/2 in. tubes				Use D Cabinet	
OPTIONAL HOT WATER HEAT COIL WITHOUT ERV	Use B Cabinet		22.5 x 42, 2 row, 10 FPI, 1/2 in. tubes			30 x 45, 2 row, 10 FPI, 1/2 in. tubes	33.75 x 44, 2 row, 10 FPI, 1/2 in. tubes		46.25 x 45.5, 2 row, 10 FPI, 1/2 in. tubes	

Table 3 — Physical Data — 62X, C-CXL Cabinet (cont)

UNIT 62X C CABINET	07	08	10	12	15	18	20	25	30	35
NOMINAL CAPACITY (TONS)	7	8	10	12	15	17.5	20	25	30	35
OUTDOOR AIR FILTERS										
Quantity … Size (in.) with ERV										
Standard 2-in. MERV 8	4...16x25		2...16x25, 2...20x25		4...24x24				Use D Cabinet	
Optional 4-in.										
MERV 8	4...16x25		2...16x25, 2...20x25		4...24x24				Use D Cabinet	
MERV 11	4...16x25		2...16x25, 2...20x25		4...24x24				Use D Cabinet	
MERV 14	4...16x25		2...16x25, 2...20x25		4...24x24				Use D Cabinet	
Quantity … Size (in.) without ERV										
Standard 2-in. MERV 8	Use B Cabinet		2...24x24			4...16x25	2,,,16x25, 2...20x25		4...24x24	
Optional 4-in.										
MERV 8	Use B Cabinet		2...24x24			4...16x25	2,,,16x25, 2...20x25		4...24x24	
MERV 11	Use B Cabinet		2...24x24			4...16x25	2,,,16x25, 2...20x25		4...24x24	
MERV 14	Use B Cabinet		2...24x24			4...16x25	2,,,16x25, 2...20x25		4...24x24	
OPTIONAL ERV										
Type	Molecular Sieve									
Diameter ... depth (in.)	24...4, 32...4, 36...4, 42...4, 48...4, 48...6								Use D Cabinet	
OPTIONAL ERV FILTERS										
Quantity … Size (in.)										
with 32 in. ERV	6...18x20								Use D Cabinet	
with 36 in. ERV	2...20x20, 2...20x24								Use D Cabinet	
with 42 in. ERV	2...12x24, 4...20x24								Use D Cabinet	
with 48 in. ERV	6...18x25								Use D Cabinet	
OPTIONAL EXHAUST FAN										
Backward Curved ECM - (mm)	450									
Airfoil (in.)	14, 16, 18, 20									
Backward Inclined - (in.)	14, 16, 18, 20									
Nominal Cfm 100%	1050	1200	1500	1800	2250	2700	3000	3750	4500	5250
Motor Hp Range	ECM, 1, 1.5, 2, 3, 5, 7.5, 10									

LEGEND

ECM — Electronically Commutated Motor
ERV — Energy Recovery Ventilator
FPI — Fins per Inch
LP — Liquid Propane
OA — Outdoor Air
SCR — Silicon-Controlled Rectifier

* XL gas heater only available in 10:1 modulation.

NOTE: For unit and component weights, refer to the latest edition of Carrier's Dedicated Outdoor Air Systems Builder.

Table 4 — Physical Data — 62X, D-DXL Cabinet, Sizes 20-35

UNIT 62X, D CABINET	20	25	30	35
NOMINAL CAPACITY (TONS)	20	25	30	35
COMPRESSOR				
Unit without ERV				
Quantity/Unit ... Model	1...ZPD103, 1...ZP103 or 2...ZPD103	1...ZPD120, 1...ZP120 or 2...ZPD120	1...ZPD137, 1...ZP137 or 2...ZPD137	1...ZPD182, 1...ZP182 or 2...ZPD182
Unit with ERV				
Quantity/Unit ... Model	1...ZPD103, 1...ZP103 or 2...ZPD103	1...ZPD137, 1...ZP137 or 2...ZPD137	1...ZPD154, 1...ZP154 or 2...ZPD154	1...ZPD182, 1...ZP182 or 2...ZPD182
Number of Refrigerant Circuits	2			
Oil	Pre-charged			
REFRIGERANT TYPE	R-410A			
CONDENSER COIL				
Standard Efficiency Condenser (sq ft)	—	—	54	54
High Efficiency Condenser (sq ft)	54	54	80	80
CONDENSER FAN				
Standard Capacity Condenser				
Nominal Cfm (total)	15600	15600	20800	20800
Quantity … Diameter (mm)	3...630	3...630	4...630	4...630
Motor Hp	1.3			
High Capacity Condenser				
Nominal Cfm (total)	20800	20800	31200	31200
Quantity...Diameter (mm)	4...630	4...630	6...630	6...630
Motor Hp	1.3			
HIGH-PRESSURE SWITCH (PSIG)				
Cutout	640			
Reset (Manual)	595			
EVAPORATOR COIL				
Face Area without ERV (sq ft)	12	12	16	16
Face Area with ERV (sq ft)	16	28.9	28.9	28.9
SUPPLY FAN				
Backward Curved ECM (mm)	DUAL - 280, 355; SINGLE - 450			
Airfoil (in.)	18, 20, 22, 25			
Backward Inclined (in.)	18, 20, 22, 25			
Nominal Cfm 100% OA	3000	3750	4500	5250
Motor Hp Range	ECM, 1.5, 2, 3, 5, 7.5, 10, 15			
OPTIONAL HOT GAS REHEAT AND LIQUID SUBCOOLING COIL				
Face Area without ERV (sq ft)	12	12	16	16
Tube Size with ERV (in.)	16	28.9	28.9	28.9
LOW-PRESSURE SWITCH (PSIG)				
Cutout	35			
Reset (Auto)	55			
CONDENSATE DRAIN CONNECTION (NPT) (in.)	1			
OPTIONAL GAS HEAT SECTION				
Gas Input Sizes (Btuh x 1000)	100, 150, 200, 250, 300, 350, 400			
Gas Input Sizes (Btuh x 1000) XL Cabinet	400, 500, 600, 700, 800, 1000, 1200			
Control Type				
Stages (no. of stages)	2			
Stages XL Cabinet (no. of stages)	4			
Modulating (% range)	5:1, 10:1*			
Efficiency (Steady State) (%)	80			
Supply Line Pressure Range (in. wg)	5.0 min. - 13.5 max			
Rollout Switch Cutout Temp (F)	350			
Gas Valve Quantity	1 Std - 2 with modulating option			
Manifold Pressure (in. wg)				
Natural Gas Std	3.5			
LP Gas Special Order	10			
OPTIONAL ELECTRIC HEAT				
Size Range (kW)	5, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100, 110, 120			
Control Type				
Stages (no. of stages)	1,2,4			
SCR (% range)	0-100			
OPTIONAL HOT WATER HEAT COIL WITH ERV	46.25 x 44, 2 row 10 FPI, 1/2 in. tubes	60 x 65, 2 rows, 10 FPI, 1/2 in.tubes		
OPTIONAL HOT WATER HEAT COIL WITHOUT ERV	30 x 44, 2 row, 10 FPI, 1/2 in. tubes	33.75 x 44, 2 rows, 10 FPI, 1/2 in. tubes	46.25 x 44, 2 rows 10 FPI, 1/2 in. tubes	

Table 4 — Physical Data — 62X, D-DXL Cabinet, Sizes 20-35 (cont)

UNIT 62X, D CABINET	20	25	30	35
NOMINAL CAPACITY (TONS)	20	25	30	35
OUTDOOR AIR FILTERS				
Quantity … Size (in.) with ERV				
Standard 2-in. MERV 8	4...24x24	2...24x24, 2...20x20, 5...20x24		
Optional 4-in.				
MERV 8	4...24x24	2...24x24, 2...20x20, 5...20x24		
MERV 11	4...24x24	2...24x24, 2...20x20, 5...20x24		
MERV 14	4...24x24	2...24x24, 2...20x20, 5...20x24		
Quantity … Size (in.) without ERV				
Standard 2-in. MERV 8	2...16x25, 2...20x25		4...24x24	
Optional 4-in.				
MERV 8	2...16x25, 2...20x25		4...24x24	
MERV 11	2...16x25, 2...20x25		4...24x24	
MERV 14	2...16x25, 2...20x25		4...24x24	
OPTIONAL ERV				
Type	Molecular Sieve			
Diameter ... depth (in.)	48…4, 48…6, 54…4, 60…6, 66…4, 66…6			
OPTIONAL ERV FILTERS				
Quantity … Size (in.)				
with 48 in. ERV	6...18x25	6...18x25	6...18x25	6...18x25
with 54 in. ERV	6...20x30	6...20x30	6...20x30	6...20x30
with 60 in. ERV	10...16x32	10...16x32	10...16x32	10...16x32
with 66 in. ERV	8...36x20	8...36x20	6...36x20	8...36x20
OPTIONAL EXHAUST FAN				
Backward Curved ECM (mm)	DUAL - 280, 355			
Airfoil (in.)	18, 20, 22, 25			
Backward Inclined (in.)	18, 20, 22, 25			
Nominal Cfm 100%	3000	3750	4500	5250
Motor Hp Range	ECM, 1.5, 2, 3, 5, 7.5, 10, 15			

LEGEND

ECM — Electronically Commutated Motor
ERV — Energy Recovery Ventilator
FPI — Fins per Inch
LP — Liquid Propane
OA — Outdoor Air
SCR — Silicon-Controlled Rectifier

* 10:1 modulating control available on DXL Cabinet (400-1200 MBtuh only). 5 kW SCR electric heater not available.

NOTE: For unit and component weights, refer to the latest edition of Carrier's Dedicated Outdoor Air Systems Builder.

Table 5 — Physical Data — 62X, D-DXL Cabinet, Sizes 40-55

UNIT 62X, D CABINET	40	45	50	55
NOMINAL CAPACITY (TONS)	40	45	50	55
COMPRESSOR				
Unit without ERV				
Quantity/Unit ... Model	1...ZPDT21, 1...ZPT206 or 2...ZPDT21	1...ZPDT24, 1...ZPT240 or 2...ZPDT24	1...ZPDT27, 1...ZPT274 or 2...ZPDT27	1...ZPDT31, 1...ZPT308 or 2...ZPDT31
Unit with ERV				
Quantity/Unit ... Model	—	—	—	—
Number of Refrigerant Circuits	2			
Oil	Pre-charged			
REFRIGERANT TYPE	R-410A			
CONDENSER COIL				
Standard Efficiency Condenser (sq ft)	54	80	80	80
High-Efficiency Condenser (sq ft)	80	121	121	121
CONDENSER FAN				
Standard Capacity Condenser				
Nominal Cfm (total)	20,800	31,200	31,200	31,200
Quantity … Diameter (mm)	4...630	6..630	6...630	6...630
Motor Hp	1.3			
High Capacity Condenser				
Nominal Cfm (total)	31,200	52,800	52,800	52,800
Quantity...Diameter (mm)	6...630	6...710	6...710	6...710
Motor Hp	1.3			
HIGH-PRESSURE SWITCH (PSIG)				
Cutout	640			
Reset (Manual)	595			
EVAPORATOR COIL				
Face Area without ERV (sq ft)	28.9	28.9	28.9	28.9
Face Area with ERV (sq ft)	—	—	—	—
SUPPLY FAN				
Backward Curved ECM (mm)	DUAL - 280, 355; SINGLE - 450			
Airfoil (in.)	18, 20, 22, 25			
Backward Inclined (in.)	18, 20, 22, 25			
Nominal Cfm 100% OA	6000	6750	7500	8250
Motor Hp Range	ECM, 1.5, 2, 3, 5, 7.5, 10, 15			
OPTIONAL HOT GAS REHEAT AND LIQUID SUBCOOLING COIL				
Face Area without ERV (sq ft)	28.9	28.9	28.9	28.9
Face Area with ERV (in.)	—	—	—	—
LOW-PRESSURE SWITCH (PSIG)				
Cutout	35			
Reset (Auto)	55			
CONDENSATE DRAIN CONNECTION (NPT) (in.)	1			
OPTIONAL GAS HEAT SECTION				
Gas Input Sizes (Btuh x 1000)	100, 150, 200, 250, 300, 350, 400			
Gas Input Sizes (Btuh x 1000) XL Cabinet	400, 500, 600, 700, 800, 1000, 1200			
Control Type				
Stages (no. of stages)	2			
Stages XL Cabinet (no. of stages)	4			
Modulating (% range)	5:1, 10:1*			
Efficiency (Steady State) (%)	80			
Supply Line Pressure Range (in. wg)	5.0 min. - 13.5 max			
Rollout Switch Cutout Temp (F)	350			
Gas Valve Quantity	1 Std - 2 with modulating option			
Manifold Pressure (in. wg)				
Natural Gas Std	3.5			
LP Gas Special Order	10			
OPTIONAL ELECTRIC HEAT				
Size Range (kW)	5, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100, 110, 120			
Control Type				
Stages (no. of stages)	1,2,4			
SCR (% range)	0-100			
OPTIONAL HOT WATER HEAT COIL WITH ERV	—			
OPTIONAL HOT WATER HEAT COIL WITHOUT ERV	30 x 44, 2 row, 10 FPI, 1/2 in. tubes	33.75 x 44, 2 rows, 10 FPI, 1/2 in. tubes	46.25 x 44, 2 rows 10 FPI, 1/2 in. tubes	

Table 5 — Physical Data — 62X, D-DXL Cabinet, Sizes 40-55 (cont)

UNIT 62X, D CABINET	40	45	50	55
NOMINAL CAPACITY (TONS)	40	45	50	55
OUTDOOR AIR FILTERS				
Quantity … Size (in.) with ERV				
Standard 2-in. MERV 8		—		
Optional 4-in.		—		
MERV 8		—		
MERV 11		—		
MERV 14		—		
Quantity … Size (in.) without ERV				
Standard 2-in. MERV 8		2...24x24, 2...20x20, 5...20x24		
Optional 4-in.				
MERV 8		2...24x24, 2...20x20, 5...20x24		
MERV 11		2...24x24, 2...20x20, 5...20x24		
MERV 14		2...24x24, 2...20x20, 5...20x24		
OPTIONAL ERV				
Type		—		
Diameter ... depth (in.)		—		
OPTIONAL ERV FILTERS				
Quantity … Size (in.)				
with 48 in. ECW		—		
with 54 in. ECW		—		
with 60 in. ECW		—		
with 66 in. ECW		—		
OPTIONAL EXHAUST FAN				
Backward Curved ECM (mm)		DUAL - 280, 355		
Airfoil (in.)		18, 20, 22, 25		
Backward Inclined (in.)		18, 20, 22, 25		
Nominal Cfm 100%	6000	6750	7500	8250
Motor Hp Range		ECM, 1.5, 2, 3, 5, 7.5, 10, 15		

LEGEND
ECM — Electronically Commutated Motor
ERV — Energy Recovery Ventilator
FPI — Fins per Inch
LP — Liquid Propane
OA — Outdoor Air
SCR — Silicon-Controlled Rectifier

* 10:1 modulating control available on DXL Cabinet (400-1200 MBtuh only). 5 kW SCR electric heater not available.

NOTE: For unit and component weights, refer to the latest edition of Carrier's Dedicated Outdoor Air Systems Builder.

Step 3 — Field Fabricate Ductwork

On vertical supply or return units, secure all ducts to roof curb and building structure. *Do not connect ductwork to unit.* Insulate and weatherproof all external ductwork, joints, and roof openings with counter flashing and mastic in accordance with applicable codes.

Ducts passing through an unconditioned space must be insulated and covered with a vapor barrier.

If a plenum return is used on a vertical unit, the return should be ducted through the roof deck to comply with applicable fire codes.

A minimum clearance is not required around ductwork. The unit has been selected and ordered to operate at a specific air volume and external static pressure. This external static pressure is generated by any additional components that are added to the air stream (ductwork, etc.). Additional static pressure, beyond the original design, will affect the performance of the packaged air conditioning unit and reduce the air volume that can be delivered. Proper engineering methods must be used when calculating external duct and component static pressure losses.

Step 4 — Make Unit Duct Connections

All 62XA, B, C, D, E, F, G, H, T, U, V, W, X, and Y units bring in 100% outdoor air through the outdoor air intake hood and do not have a return air connection. The 62XA, B, C, D, T, U, and V units have a vertical supply duct opening in the bottom of the unit. The 62XE, F, G, H, W, X, and Y units have a horizontal supply duct opening in the side of the unit.

All 62XJ, K, M, N, P, Q, R, S, Z, 2, 3, 4, 5, and 6 units bring in 100% outside air through the intake hood and also have a return duct opening in the bottom of the unit for exhaust. They will also be equipped with a factory-installed power exhaust and may be equipped with an energy recovery ventilator (ERV) and/or an energy conservation wheel. The return air to these units is not re-circulated or mixed with the incoming outdoor air. The return air may be used to transfer energy to the incoming air via the energy recovery ventilator and is then exhausted. The 62XJ, K, M, N, Z, 2, and 3 units have a vertical supply and return duct opening in the bottom of the unit. The 62XP, Q, R, S, 4, 5, and 6 units have a horizontal supply duct opening in the side of the unit and a vertical return opening in the bottom of the unit. To determine the specifics regarding a particular unit, see the model number nomenclature found in the product data guide for the 62X unit.

VERTICAL SUPPLY/RETURN CONNECTIONS

For vertical supply or return connections, ductwork openings are shown in the DOAS Builder generated submittal. Attach the ductwork to the roof curb. Do not attach duct directly to the unit.

⚠WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could cause personal injury.

For vertical supply and return units, tools or parts could drop into ductwork and cause an injury. Install a 90 degree turn in the return ductwork between the unit and the conditioned space. If a 90 degree elbow cannot be installed, then a grille of sufficient strength and density should be installed to prevent objects from falling into the conditioned space. Due to electric heater, supply duct will require 90 degree elbow.

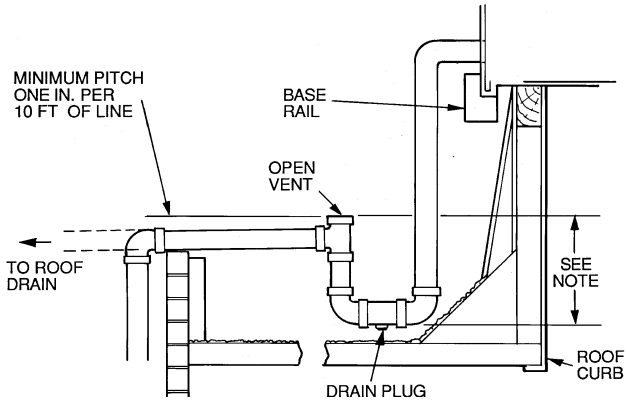
HORIZONTAL SUPPLY CONNECTIONS

For horizontal supply connections, ductwork openings are shown in the DOAS Builder generated submittal. The 62X units do not have horizontal return connections.

Step 5 — Install External Trap for Condensate Drain

The unit's 3/4-in. condensate drain connection is located on the side of the unit. Refer to the DOAS Builder generated submittal for condensate location.

All units must have an external trap for condensate drainage. Install a trap at least 4-in. deep and protect against freeze-up. If drain line is installed downstream from the external trap, pitch the line away from the unit at 1 in. per 10 ft of run. Do not use a pipe size smaller than the unit connection. Refer to the physical data table for sizes. See Fig. 9.



NOTE: Trap should be deep enough to offset maximum unit static difference. A 4-in. trap is recommended.

Fig. 9 — Condensate Drain Piping Details

Step 6 — Install Gas Piping (Gas Heat Units Only)

Unit is equipped for use with natural gas or liquid propane (LP) heat. Gas heat units with a single furnace come with a factory installed cabinet knockout for the gas piping connection. For units with multiple furnaces, the contractor must make a hole for the supply gas inlet and seal it appropriately. Refer to local building codes, or in the absence of local codes, to ANSI Z223.1-latest year and addendum Z223.1A-latest year entitled HFGC. In Canada, installation must be in accordance with the CAN1.B149.1 and CAN1.B149.2 installation codes for gas burning appliances.

Gas piping length and capacity is shown in Table 6. See Fig. 10 for typical pipe guide and locations of external manual gas shutoff valve. Gas supply piping must be supported starting from connection of the unit. If long stretches of piping are expected to be used, there must be supports at intervals of every 6 to 8 ft. Metal straps, blocks, or hooks are acceptable to support the gas piping. The piping should never be strained or bent.

Table 6 — Gas Piping Capacity (cubic ft per hr)

GAS PIPE LENGTH (FT)	PIPE SIZE (IN.)				
	3/4	1	1 1/4	1 1/2	2
10	278	520	1050	1600	2700
20	190	350	730	1100	2100
30	152	285	590	890	1650
40	130	245	500	760	1450
50	115	215	440	670	1270
60	105	195	400	610	1105
70	96	180	370	560	1050
90	84	160	320	490	930
100	79	150	305	460	870
125	72	130	275	410	780
150	64	120	250	380	710
175	59	110	225	350	650
200	55	100	210	320	610

⚠ WARNING

Do not pressure test gas supply while connected to unit. Always disconnect union before servicing. High pressures can cause gas valve damage resulting in a hazardous condition.

IMPORTANT: Natural gas pressure at unit gas connection must not be less than 5.0 in. wg or greater than 13.0 in. wg for all heat sizes.

Install field-supplied manual gas shutoff valve with a 1/8-in. NPT pressure tap for test gage connection at unit. The pressure tap is located on the gas manifold, adjacent to the gas valve. Field gas piping must include sediment trap and union. See Fig. 10. Install a field-supplied gas regulator. Refer to Table 7 for gas manifold sizes and pressures.

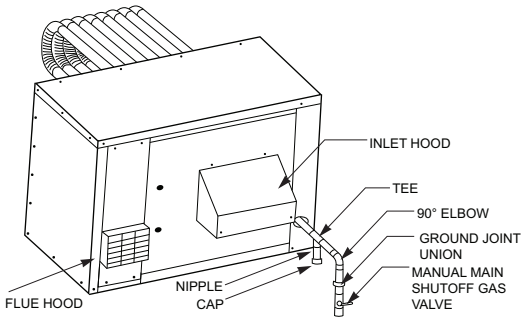


Fig. 10 — Gas Heat Section (Gas Heat Units Only)

Table 7 — Gas Heat Connection Sizes and Pressures

INDIV. GAS HEATER INPUT (MBH)	GAS NPT CONNECTION (IN.)	MIN. INLET GAS PRESSURE	
		NG IN. W.C. (MBAR)	LPG IN. W.C. (MBAR)
75	0.75	5.0 (12.5)	11.0 (27.4)
100	0.75	5.0 (12.5)	11.0 (27.4)
150	0.75	5.0 (12.5)	11.0 (27.4)
200	0.75	5.0 (12.5)	11.0 (27.4)
250	0.75	5.0 (12.5)	11.0 (27.4)
300	0.75	5.0 (12.5)	11.0 (27.4)
350	0.75	5.0 (12.5)	11.0 (27.4)
400	1.00	6.0 (14.9)	12.0 (29.9)
500	1.00	6.0 (14.9)	12.0 (29.9)
600	1.00	6.0 (14.9)	12.0 (29.9)

LEGEND

LPG — Liquid Propane Gas
NG — Natural Gas

Size gas-supply piping for 0.3-in. wg maximum pressure drop. Do not use supply pipe smaller than unit gas connection.

GAS HEAT SAFETY CONTROLS

Safety systems are required for proper performance of the gas heater. The gas heater shall not be permitted to operate with any safety system disabled. If a fault is found in any of the safety systems, then the system shall be repaired only by a contractor qualified in the installation and service of gas-fired heating equipment.

- Combustion Airflow Switch: An airflow switch is provided as part of the control system to verify airflow through an induced draft fan by monitoring the difference in pressure between the fan and the atmosphere. If sufficient negative pressure is not present, indicating lack of proper air movement through heat exchange, the switch opens, shutting off gas supply through the ignition control module. The air pressure switch has fixed settings and is not adjustable.
- Rollout Switch (Manual Reset): The heater is equipped with manual reset rollout switch(es) in the event of burner flame rollout. The switch will open on temperature rise and shut off gas supply through the ignition control module. Flame rollout can be caused by insufficient airflow for the burner firing rate (high gas pressure), blockage of the vent system, or in the heat exchanger. The heater should not be placed back in operation until the cause of the rollout condition is identified. The rollout switch can be reset by pressing the button on top of the switch.
- Primary High Limit Switch: To prevent the heater from operating under low airflow conditions, the unit is equipped with a fixed temperature high limit switch, mounted on the vestibule panel. This switch will shut off gas to the heater through the ignition control module before the air temperature reaches 250.0°F (121.1°C). Reduced airflow may be caused by restrictions upstream or downstream of the circulating air blower, such as dirty or blocked filters or restriction of the air inlet or outlet to the unit. The high limit switch will shut off the gas when the temperature reaches its setpoint and then resets when the temperature drops 30.0°F (16.7°C) below the setpoint, initiating a heater ignition. The heater will continue to cycle on limit until the cause of the reduced air flow is corrected.
- Ignition Control Module: Ignition control modules are available with a number of different operating functions. Refer to the Sequence of Operation and Control Diagnostic data sheets, provided in the instructions package, for a detailed description of the control features, opertion, and troubleshooting for the model control installed.

Step 7 — Install Gas Heat Condensate Drain

Units with natural gas or LP heat also require a condensate drain for heater condensate collection. Condensate in gas heaters can occur during low operating temperatures or during heater start-up.

The unit's gas heat condensate drain connection is located on the side of the unit. Refer to the DOAS Builder generated submittal for condensate location.

All units must have an external trap for condensate drainage. Install a trap at least 4-in. deep and protect against freeze-up. If drain line is installed downstream from the external trap, pitch the line away from the unit at 1 in. per 10 ft of run. Do not use a pipe size smaller than the unit connection. Refer to the physical data table for sizes. See Fig. 9.

Step 8 — Install Hot Water (Hot Water Units Only)

Coils should be piped according to any relevant local codes. All external piping must be supported independently from the coil. External piping must be insulated to prevent freeze up. See Tables 1-5 for coil connection size and type. See Table 8 for hot water coil connection sizes. Control valves for hot water coils are to be field provided and installed. Coil freeze protection operation (open HW valve when coil temp approaches freeze limit) must be field provided.

Table 8 — Hot Water Coil Connections

CABINET	ERV	SIZE	HOW WATER COIL CONNECTION (IN.)
A	No	03-05	7/8
		06-08	1 1/8
	Yes	03-05	1 3/8
B / B XL	No	03-05	7/8
		06-08	1 1/8
		10-15	1 3/8
		18-20	1 3/8
	Yes	03-06	1 3/8
		07-08	1 3/8
		10-12	1 3/8
C / C XL	No	10-15	1 3/8
		18	1 3/8
		20-25	1 3/8
		30-35	2 1/8
	Yes	07-08	1 3/8
		10-12	1 3/8
		15-25	2 1/8
D / D XL	No	20	1 3/8
		25	1 3/8
		30-55	2 1/8
	Yes	20	2 1/8
		25-35	2 1/8

Step 9 — Make Electrical Connections

Power wiring should be connected to the main power terminal block located within the unit main control section. Power wiring connections on units with factory disconnects should be made at the line side of the disconnect switch.

The internal power and control wiring of these units is factory installed and each unit is thoroughly tested prior to shipment. Standard 62X units have an SCCR (short circuit current rating) of 5KA. Contact the local service representative if assistance is required.

It is recommended that an independent 115-volt power source be brought to the vicinity of the rooftop unit for portable lights and tools used by the service mechanic, if a factory-installed convenience outlet is not on the unit.

FIELD POWER SUPPLY

The units are factory wired for the voltage shown on the nameplate. Main power wiring should be sized for the minimum wire ampacity shown on the nameplate. An external weather-tight disconnect switch properly sized for the unit total load is required for each unit. Disconnect must be installed in accordance with local and/or national electric codes. This disconnect can be supplied by the factory or by others.

Power wiring may enter the rooftop unit through the unit base and roof curbs on all models. Install conduit connectors at the entrance locations. External connectors must be weatherproof.

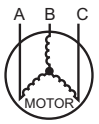
All units must be properly grounded. The ground lug is provided for this purpose. **DO NOT** use the ground lug for connecting a neutral conductor. The unit must be electrically grounded in accordance with local codes, or in the absence of local codes, with the NEC (National Electrical Code) ANSI/NFPA (National Fire Protection Association) 70 1981.

Once it is established that supply voltage is within the utilization range, check and calculate if an unbalanced condition exists between phases.

Use the following formula to determine the percent of voltage imbalance.

$$\% \text{ Voltage imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60.



AB = 452 v
BC = 464 v
AC = 455 v

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3} = \frac{1371}{3} = 457$$

Determine maximum deviation from average voltage.

(AB) 457 – 452 = 5 v
(BC) 464 – 457 = 7 v
(AC) 457 – 455 = 2 v

Maximum deviation is 7 v.

Determine percent of voltage imbalance.

$$\% \text{ Voltage Imbalance} = 100 \times (7 / 457) = 1.53\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

Unit failure as a result of operation on improper line voltage or excessive phase imbalance constitutes abuse and may cause damage to electrical components.

Consult the wiring diagram furnished with the unit. These units are custom designed for each application. The unit wiring diagram is located inside the control panel of each unit.

When installing units without a factory-installed disconnect, provide disconnect per NEC Article 440 or local codes. For non-fused disconnects, size the disconnect according to the sizing data provided on unit nameplate. If a fused disconnect is used, determine the minimum size for the switch based on the disconnect sizing data and then coordinate the disconnect housing size to accommodate the maximum overcurrent protection (MOCP) device size as marked on the unit informative plate. All field wiring must comply with NEC and local codes. Size wire based on MCA (minimum circuit amps) on the unit informative plate.

For electrical information, reference submittals. See Fig. 14 for the installation wiring diagram.

⚠ CAUTION

The correct power phasing is critical to the operation of the scroll compressors. An incorrect phasing will result in an alarm being generated and compressor operation lockout. Should this occur, power phase correction must be made to the incoming power. Damage to compressor could result.

⚠ WARNING

Unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to unit ground lug in control compartment, or conduit approved for electrical ground when installed in accordance with NEC; ANSI/NFPA, latest edition, and local electrical codes. *Do not use gas piping as an electrical ground.* Failure to follow this warning could result in the installer being liable for personal injury of others.

⚠ WARNING

Disconnect all power to the unit before performing maintenance or service. Unit may automatically start if power is not disconnected. Failure to follow this warning could cause personal injury, death, and/or equipment damage.

SENSOR WIRING

The 62X unit uses a variety of sensors for control purposes. The sensors provided will depend upon the features of the unit as detailed below.

All units are equipped with an outdoor air sensor (OAT) and a combination of supply air temperature (SAT) and duct relative humidity sensor.

The combination sensor should be installed in the supply duct downstream of the heat section. The sensor must be far enough downstream of the heat section so that the discharge air is adequately mixed for proper sensing. If the unit is not equipped with heat, the combination sensor is factory installed in the cabinet. The sensor is connected to the unit controller as indicated in the wiring diagram with 18 AWG (American Wire Gage) shielded wire. Do not run the sensor wiring in the same conduit as high voltage wiring.

A zone temperature sensor (ZS) may be provided as an accessory with units that have ordered the space temperature override control function. The ZS should be installed in the space and connected to the unit controller at the Rnet connection as shown in the wiring diagram. See Tables 8 and 9 for Rnet wiring specifications.

Use the specified type of wire and cable for maximum signal integrity. See Table 9.

To wire the sensor to the controller:

1. Partially cut, then bend and pull off the outer jacket of the Rnet cable(s), being careful not to nick inner insulation.
2. Strip about 1/4 in. of the inner insulation from each wire. See Fig. 11.
3. Wire each terminal on the sensor to the same terminal on the controller. Table 10 shows the recommended Rnet wiring scheme.

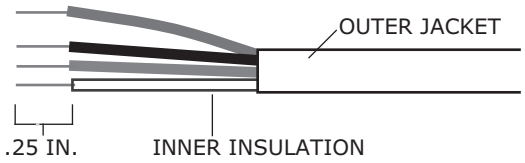


Fig. 11 — Rnet Cable Wire

Table 9 — Rnet Wiring Specifications

RNET WIRING SPECIFICATIONS	
DESCRIPTION	4 conductor, unshielded, CMP, plenum rated cable
CONDUCTOR	18 AWG
MAXIMUM LENGTH	500 ft
RECOMMENDED COLORING	Jacket: white Wiring: black, white, green, red
UL TEMPERATURE	32 to 167 F
VOLTAGE	300-vac, power limited
LISTING	UL: NEC CL2P, or better

LEGEND

AWG — American Wire Gage
CMP — Communications Plenum Cable
NEC — National Electrical Code
UL — Underwriters Laboratories

Table 10 — Rnet Wiring

WIRE	TERMINAL
RED	+12-v
BLACK	Rnet–
WHITE	Rnet+
GREEN	Gnd

NOTE: The wire should be connected to the terminal shown.

Step 10 — Open Exhaust Damper (Units with Optional Exhaust or Energy Conservation Wheel Only)

The optional exhaust damper is secured to the exhaust assembly for shipping. Remove the two screws holding the damper to the panel. Damper should be free to swing open during operation. See Fig. 12.

Fig. 12 — Optional Exhaust Damper

Step 11 — Install all Accessories

After all of the factory-installed options have been adjusted, install all of the field-installed accessories. Refer to the accessory installation instructions included with each accessory.

Step 12 — Configure Controls

The unit controller is pre-configured with default set points as detailed below. If changes to the set points are desired, this may be accomplished via Equipment Touch™ device. See Fig. 13. The password is 1111. See the Controls and Troubleshooting Book.

Fig. 13 — Equipment Touch

SEQUENCE OF OPERATION

100% outdoor air units — 62X

The 62X unit is designed to condition 100% outdoor air to room neutral conditions for ventilation purposes. As such, the 62X unit is not designed to, nor will the 62X unit maintain space cooling, heating or relative humidity conditions. A separate ancillary device must be installed to provide primary space heating, cooling, and humidity control.

The controller is turned on by a switch located on its front, upper left corner. Several Occupancy Control options are available for starting the unit. These can be selected from the Equipment Touch display pad on the Controls screen (requires user password). The Resident Program has an adjustable scheduler that uses the internal time clock to allow for separate Sequences for Occupied and Unoccupied periods. This can be accessed from the Equipment Touch display pad on the Schedules screen (requires user password).

NOTE: All temperature-related events have an additional 10-second (fixed) "delay on make" to allow temperatures to settle.

OCCUPIED MODE

When the Equipment Touch Schedule calls for the start of the Occupied mode, and the controller has verified that there are no fault or shutdown conditions, after a 30-second (fixed) delay the unit goes into Occupied mode.

Outdoor Air Damper (OD)

After the unit goes into Occupied mode, the Outdoor Air (OA) damper will open. As the OA damper opens, the Outdoor Air Damper Actuator (OADA) auxiliary switches close. The OA damper stays open until the system reaches the end of the Occupied mode period. It will remain open until the supply fan turns off. After the supply fan turns off, the OA damper will close.

Supply Fan (SF)

The SF Air Monitoring Station (SF-AMS) is included to monitor the SF air flow only. As the OA damper opens, the OADA auxiliary switch (adjustable) will close and the SF will turn on. The SF shall operate continuously while the unit is in the Occupied mode. When the system reaches the end of the Occupied mode period, the SF will continue to run for an additional 2 minutes before turning off.

- *SF-VSC: Supply Fan with Variable Speed Control* — The SF-VSC will modulate its speed based upon the SF Differential Pressure Transmitter (SF-DPT) signal to maintain the supply duct static pressure set point.
- *Optional* — For constant air volume (CAV), select "Manual Override" in the Equipment Touch keypad and input the required speed (%) as determined in the field by Test and Balancing.

Exhaust fan (EF)

At the same time the SF turns on, the EF will be enabled to run. The EF shall be enabled to run continuously while the unit is in the Occupied mode. When the system reaches the end of the Occupied mode period, the EF will be enabled to run for an additional 2 minutes before turning off.

- *EF-VSC: Exhaust Fan with Variable Speed Control* — If the EF Differential Pressure Transmitter (EF-DPT) signal is above the building static pressure set point, the EF-VSC will modulate its speed based upon the EF-DPT to maintain the set point. If the EF-DPT signal is below the building static pressure set point, the EF will modulate down to 0% (adjustable) speed.
- *Optional* — For constant air volume (CAV), select "Manual Override" in the Equipment Touch keypad and input the required speed (%) as determined in the field by Test and Balancing.

Energy Conservation Wheel (ECW)

After the OA damper opens and the SF turns on, the ECW turns on. The ECW By-Pass Damper will open when the ECW is off and it will close when the ECW is on.

- *ECW Standard Operation* — When the OAT is 3°F (adjustable) or more above or below the RAT, the ECW will be on, otherwise it is off.
- *ECW with VFD Controlled Defrost (WM-VFD)* — When the OAT is 3°F (adjustable) or more above or below the RAT, the ECW will be on. It will be off, if the OAT is less than 3°F (adjustable) above or below the RAT. It will decrease speed or stop as the WExAT goes below 25°F (adjustable) to allow for wheel defrosting. It will start back up and increase speed when the WExAT rises toward 25°F (adjustable) or more.

Cooling Mode

Cooling mode is available when the Entering Coil Air Temperature (ECAT) is above the ECAT cooling lower limit (55°F, adjustable) and there is a demand for cooling. When the Entering Coil Air Temperature (ECAT) is 1°F (adjustable) or more above the Supply Air Temperature (SAT) cooling set point (72°F, adjustable), compressor no. 1 turns on. When the SAT is 2°F (adjustable) or more above the SAT cooling set point (72°F, adjustable), compressor no. 2 turns on – not less than 10 minutes (adjustable) after compressor no. 1 turned on. When the SAT is 2°F (adjustable) or more below the SAT cooling set point (72°F, adjustable), compressor no. 2 turns off. When the ECAT is 1°F (adjustable) or more below the Supply Air Temperature (SAT) cooling set point (72°F, adjustable), compressor no. 1 turns off.

- *Optional* — When enabled, if there is a call for first stage cooling, second stage cooling will be enabled after a 10-minute (adjustable) delay. Both compressors modulate to maintain the cooling set point. Default is "OFF." Compressor enabling logic includes a 5-minute (fixed) minimum run-time and a 5-minute (fixed) minimum time off delay to prevent compressor short cycling.
- *Digital Compressors* — The controller regulates the capacity of the digital compressors by rapidly loading and unloading the compressors in 15-second intervals. The digital compressor will modulate based upon the DX Leaving Air Temperature (DX LAT) sensor and set point (55°F, adjustable). If the DX LAT drops to 38°F or less, the controller will fix the compressor at 10% (adjustable). If the DX LAT drops to 35°F or less for 10 minutes, the controller will issue an alarm and the compressor stops. When the DX LAT warms back up to 55°F or more, the compressor turns back on. If there is a current call for first stage cooling and compressor no. 1 is shut down due to an alarm

(HPS1, LPS1, or DX LAT1), compressor no. 2 will be turned on to take its place until it returns.

- *Hot Gas Reheat (HGRH) – On/Off* — When the SAT is 1°F (adjustable) or more below the SAT cooling set point, HGRH turns on and cycles to maintain the SAT cooling set point. When SAT is 2°F (adjustable) or more above the SAT cooling set point, HGRH turns off.
- *Hot Gas Reheat (HGRH) – Modulating* — When the SAT is 1°F (adjustable) or more below the SAT cooling set point, HGRH turns on and modulates to maintain the SAT cooling set point. When the SAT is 2°F (adjustable) or more above the SAT cooling set point, HGRH turns off.
- *Switchable Subcooling* — When either of the compressors are enabled and the SAT is equal to or below the SAT cooling set point (72°F, adjustable), the subcooling coil is enabled. When the SAT is 1°F (adjustable) or more above the SAT cooling set point (72°F, adjustable), the subcooling coil is disabled.

Dehumidification Mode

Dehumidification mode is available if the ECAT is greater than 60°F (adjustable) and there is no call for heating. If there is no demand for cooling, when the Entering Coil Relative Humidity (EC-RH) is 1% (adjustable) or more above the Supply Air Relative Humidity (SA-RH) set point (55% RH, adjustable), Dehumidification mode is enabled. After the minimum time-off delay, compressor no. 1 turns on. If there is a current demand for cooling, when the SA-RH is 1% (adjustable) or more above the SA-RH set point (55% RH, adjustable), Dehumidification mode is enabled. When SA-RH is 2% (adjustable) or more above the SA-RH set point (55% RH, adjustable), and after minimum time-off delay, compressor no. 2 turns on – not less than 10 minutes (adjustable) after compressor no. 1 turned on. Both compressors respond in sequence and run at full cooling. HGRH is enabled to operate as necessary to maintain the SAT cooling set point (72°F, adjustable). When SA-RH is 1% (adjustable) or more below SA-RH set point (55% RH, adjustable), compressor no. 2 turns off. If there is still no demand for cooling, when the EC-RH is 2% (adjustable) or more below the SA-RH set point (55% RH, adjustable), compressor no. 1 turns off and Dehumidification mode is disabled. If there is a current demand for cooling, when the SA-RH is 2% (adjustable) or more below the SA-RH set point (55% RH, adjustable), Dehumidification mode is disabled.

- *Digital Compressors* — The controller controls the capacity of the digital compressors by rapidly loading and unloading the compressor in 15-second intervals. The digital compressor will modulate based upon the DX LAT sensor and the DX LAT Dehumidification set point (48°F, adjustable). If the DX LAT drops to 38°F or less, the controller will fix the compressor at 10% (adjustable).
- *Hot Gas Reheat (HGRH) – On/Off* — When the SAT is 1°F (adjustable) or more below the SAT cooling set point, HGRH turns on and cycles to maintain the SAT cooling set point. When SAT is 2°F (adjustable) or more above the SAT cooling set point, HGRH turns off.
- *Hot Gas Reheat (HGRH) – Modulating* — When the SAT is 1°F (adjustable) or more below the SAT cooling set point, HGRH turns on and modulates to maintain the SAT cooling set point. When SAT is 2°F (adjustable) or more above the SAT cooling set point, HGRH turns off.
- *Switchable Subcooling* — When either of the compressors are enabled and the SAT is equal to or below the SAT cooling set point (72°F, adjustable), the subcooling coil is enabled. When the SAT is 1°F (adjustable) or more above the SAT cooling set point (72°F, adjustable), the subcooling coil is disabled.

Heating Mode

Heating mode is available when the OAT is below the OAT heating upper limit (60°F, adjustable) and there is a demand to temper outdoor air to room neutral conditions. When the ECAT is 1°F (adjustable) or more below the ECAT heating set point (50°F, adjustable), heating is enabled and operates to maintain SAT heating set point (70°F, adjustable). When ECAT is 1°F (adjustable) or more above ECAT heating set point (50°F, adjustable), heating is disabled.

STAGED HEAT (ELECTRIC HEAT) 2-STAGE HEAT

Terminal W1 turning on enables first-stage heating. As SAT goes further below the SAT heating set point (70°F, adjustable), terminal W2 energizes and second-stage heating is enabled. As SAT rises, terminal W2 turns off and second-stage heating turns off. As the SAT goes 1°F (adjustable) or more above the SAT heating set point (70°F, adjustable), terminal W1 turns off and first-stage heating turns off.

STAGED HEAT (ELECTRIC HEAT) 4-STAGE HEAT

Terminal W1 turning on enables the Heating Analog Relay Module (HARM) on the control panel which activates the different stages of heating. As the SAT goes further below the SAT heating set point (70°F, adjustable), the different stages will turn on. As the SAT goes further above the SAT heating set point (70°F, adjustable), the different stages will turn off.

STAGED HEAT (GAS HEATER) 2-STAGE

Terminal W1 turning on enables first-stage heating. As SAT goes further below the SAT heating set point (70°F, adjustable), terminal W2 energizes and second-stage heating is enabled. As SAT rises, terminal W2 turns off and second-stage heating turns off. As the SAT goes 1°F (adjustable) or more above the SAT heating set point (70°F, adjustable), terminal W1 turns off and first-stage auxiliary heating turns off.

STAGED HEAT (GAS HEATER) 4-STAGE

Terminal W1 turning on enables the Heating Analog Relay Module (HARM) on the control panel which activates the different stages of heating. As the SAT goes further below the SAT heating set point (70°F, adjustable), the different stages will turn on. As the SAT goes further above the SAT heating set point (70°F, adjustable), the different stages will turn off.

Gas Heater

Terminal W1 turning on energizes the gas heat controller and first-stage axillary heating is enabled. If the SAT is 1°F (adjustable) or more above the SAT heating set point (70°F, adjustable) terminal W1 turns off, which deenergizes the gas heat controller, and first-state axillary heating is turned off. All other stages operate as above.

MODULATED HEAT

SCR Electric Heat: On demand to temper outdoor air to room neutral conditions, the controller modulates the electric heating SCR in order to maintain the SAT heating set point (70°F, adjustable).

Modulating Gas Heater

On demand to temper outdoor air to room neutral conditions, the controller modulates the gas heat controller to control the gas flow in order to maintain the SAT heating set point (70°F, adjustable).

Modulating Hot Water Heat

On demand to temper outdoor air to room neutral conditions, the controller modulates the hot water valve to control the hot water flow in order to maintain the SAT heating set point (70°F, adjustable).

UNOCCUPIED MODE

When the Occupancy Control indicates the end of the Occupied mode, the compressor(s) and outdoor fan(s) will turn off (subject to minimum run-time) or the heating system will turn off. The SF and EF will continue to run for 2 minutes before turning off. After this, the ECW will turn off and the OA damper will close. The unit is now off.

Safety Switches

- *High Pressure Switch (HPS1):* If HPS1 is open, compressor no. 1 will turn off and the controller will issue an alarm. After manually resetting HPS1, the HPS1 alarm will reset. Following a minimum time off delay, compressor no. 1 will turn on. If the controller records 3 high pressure start/restart failure incidents within 1 hour, compressor no. 1 is locked out and the controller will issue an alarm. The compressor lockout can be reset in the Equipment Touch display pad or by cycling the power of the controller. This sequence is the same for compressor no. 2, Y2, and HPS2.
- *Low Pressure Switch (LPS1):* If LPS1 is open after the LPS1 bypass time, the controller will issue an alarm and compressor no. 1 turns off. After 30 seconds (fixed), the LPS1 alarm will reset. Following a minimum time off delay, compressor no. 1 will turn on. If the controller records 3 low pressure start/restart failure incidents within 1 hour, compressor no. 1 is locked out and the controller will issue an alarm. The compressor lockout can be reset in the Equipment Touch display pad or by cycling the power of the controller. This sequence is the same for compressor no. 2, Y2, and LPS2.

SAFETY SHUTDOWN

Smoke Detector: When a smoke detector (SD) is provided, it is wired directly to the controller. If smoke is detected, the controller will shut down the unit. Other instances where shutdown will occur are as follows. If a compressor fails to start 3 times in an hour due to high pressure switch lock out; If a compressor fails to start 3 times in an hour due to low pressure switch lock out; If a compressor fails to start 3 times in an hour due to DX leaving air temperature lock out; and if the controller detects an SAT sensor failure.

REFRIGERANT CHARGING

The 62X series units come from the factory with the appropriate operating charge of R-410A.

Charge adjustment might be necessary if subcooling temperatures are too high due to excess refrigerant in the system that is subsequently backed up in the condenser. This symptom could also indicate a failed TXV or line restriction. If there is no line restriction and the TXV is working correctly, reclaim enough R-410A refrigerant so the system ambient compensated pressure readings are at the desired levels. Use a refrigerant recovery unit to safely remove the refrigerant, because it is illegal to release R-410A refrigerant into the atmosphere. After the addition or removal of refrigerant, the unit must be allowed to stabilize for at least 10 minutes before reaching any conclusions if any other adjustments need to be made.

All 62X series units are equipped with hot gas reheat or liquid subcooling reheat. Operation of the reheat system must be disabled prior to charging unit. To disable, use the unit control interface to disable reheat operation, or disconnect the power or control signal to the reheat valve or solenoid assembly.

The type of unit and operation determines the ranges for liquid subcooling and evaporator superheat. The system is overcharged if the subcooling temperature is too high and the evaporator is fully loaded. High superheat results in increased subcooling. The system is defined as undercharged if the superheat is too high and the subcooling is too low.

To correct an undercharged system, add refrigerant to reduce the superheat and raise subcooling. If the subcooling is correct and the superheat is too high, the TXV may need adjustment to correct the superheat. When checking the charge, units with hot gas reheat must be checked with the hot gas reheat valves closed and the system in cooling mode. To confirm proper charge, the unit should be left in reheat mode to check for proper operation. See Table 11 for proper charge levels.

Table 11 — Ambient Charge — 100% Outside Air and Combined Unit Subcool and Superheat

AMBIENT AIR TEMP	95°F	85°F	75°F	65°F	55°F	45°F
Subcool	10-12°F No reheat circuit in unit				In heating mode	
Subcool	12-15°F No reheat circuit in unit				In heating mode	
Subcool	13-16°F No reheat circuit in unit				In heating mode	

NOTE: Subcooling readings must be taken with the reheat circuit disabled. To calculate subcooling temperature, convert liquid line head pressure to condensing temperature. Then, subtract the liquid line temperature.

Step 13 — Test Mode and Fan Balancing

For fan balancing, the manual override function should be used. This function manually enables one to set the operational parameters of the following unit components (if equipped) for unit startup, troubleshooting or testing and balancing:

- Supply Fan VFD or ECM
- Exhaust Fan VFD or ECM
- Modulating HGRH
- Heating
- Digital Compressors

When the unit restarts, it will automatically default back to the inputs that were previously entered during manual override.

Typical Wiring Diagrams

See Fig. 14-15 for typical wiring diagrams.

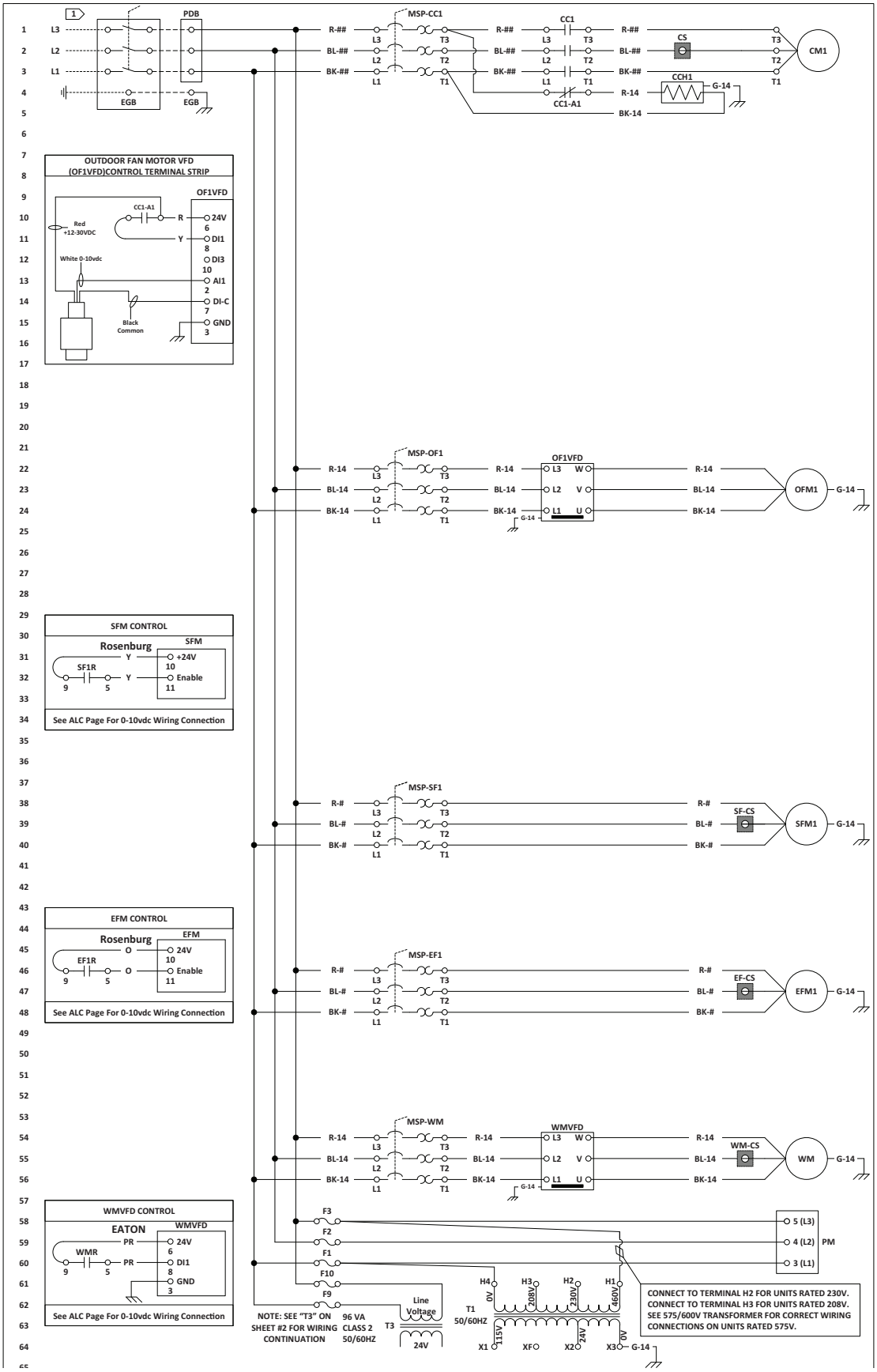


Fig. 14 — Installation Wiring Diagram

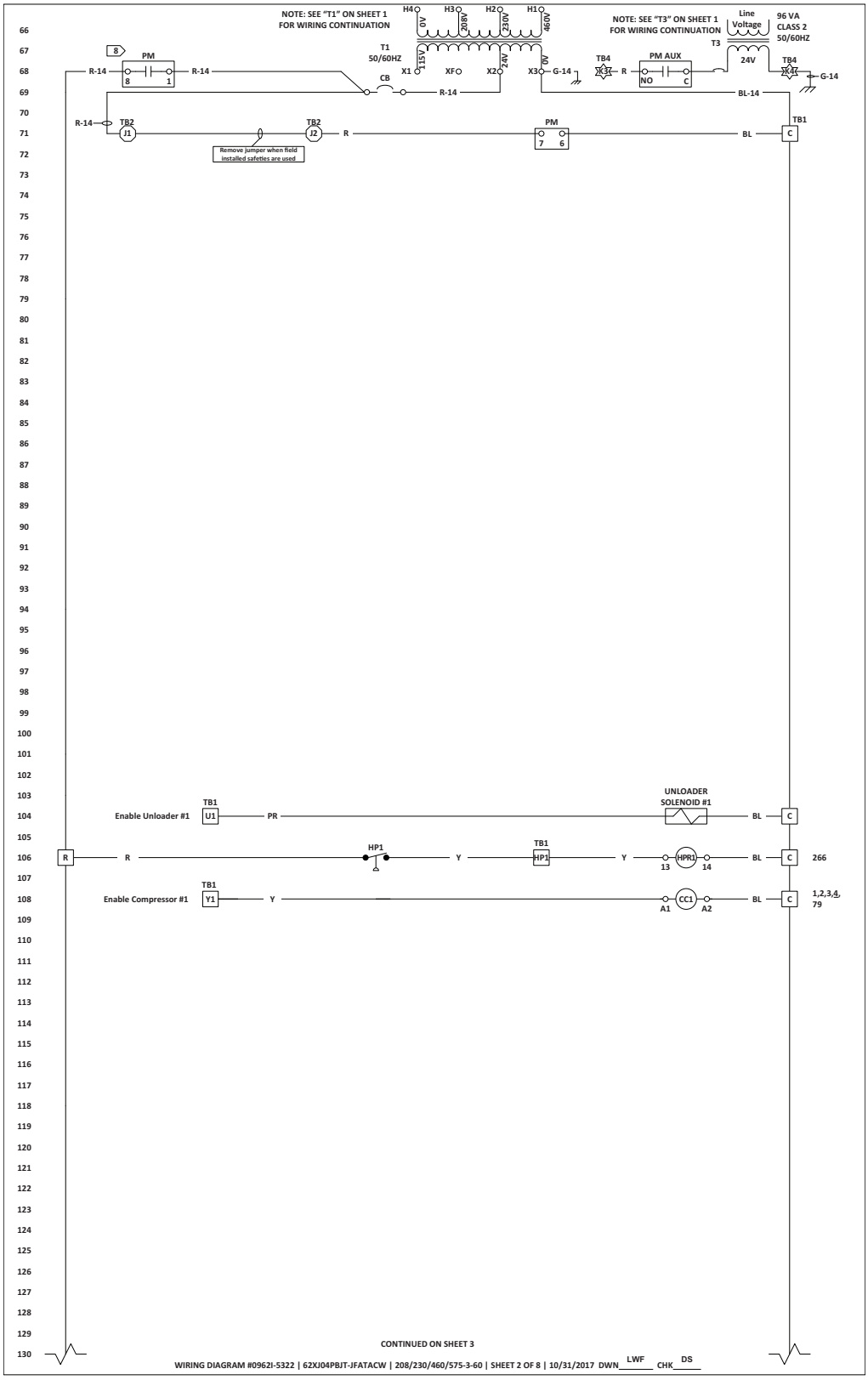


Fig. 14 — Installation Wiring Diagram (cont)

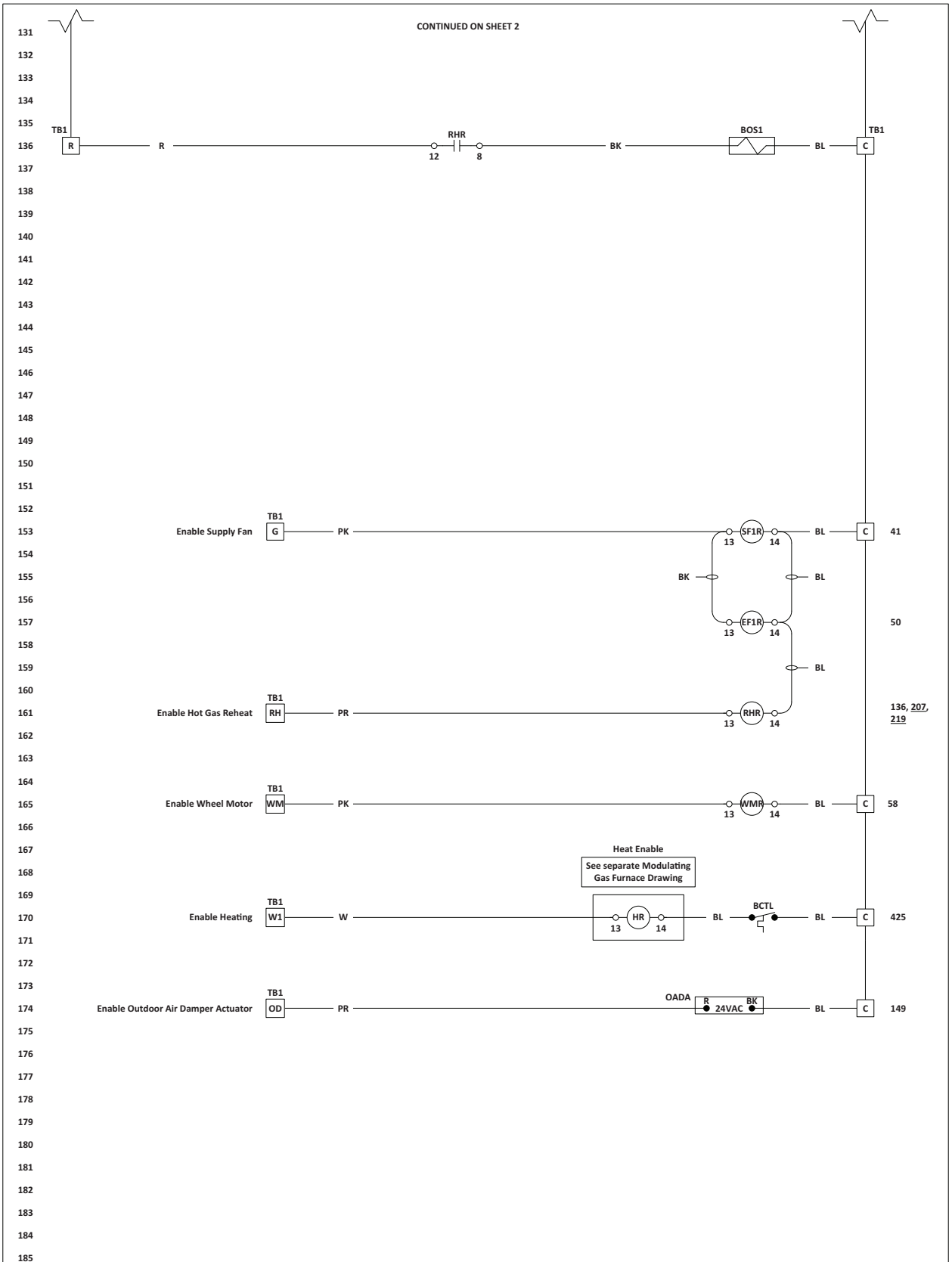


Fig. 14 — Installation Wiring Diagram (cont)

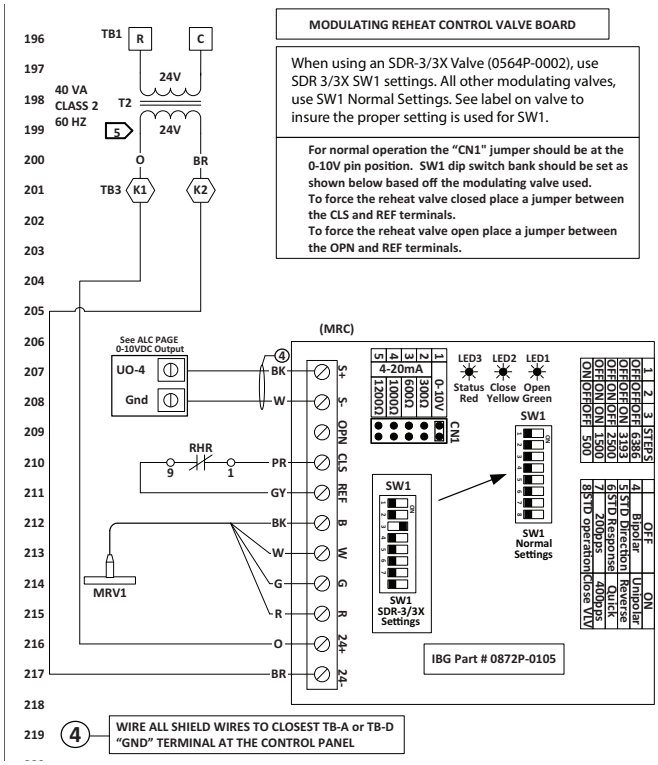


Fig. 14 — Installation Wiring Diagram (cont)

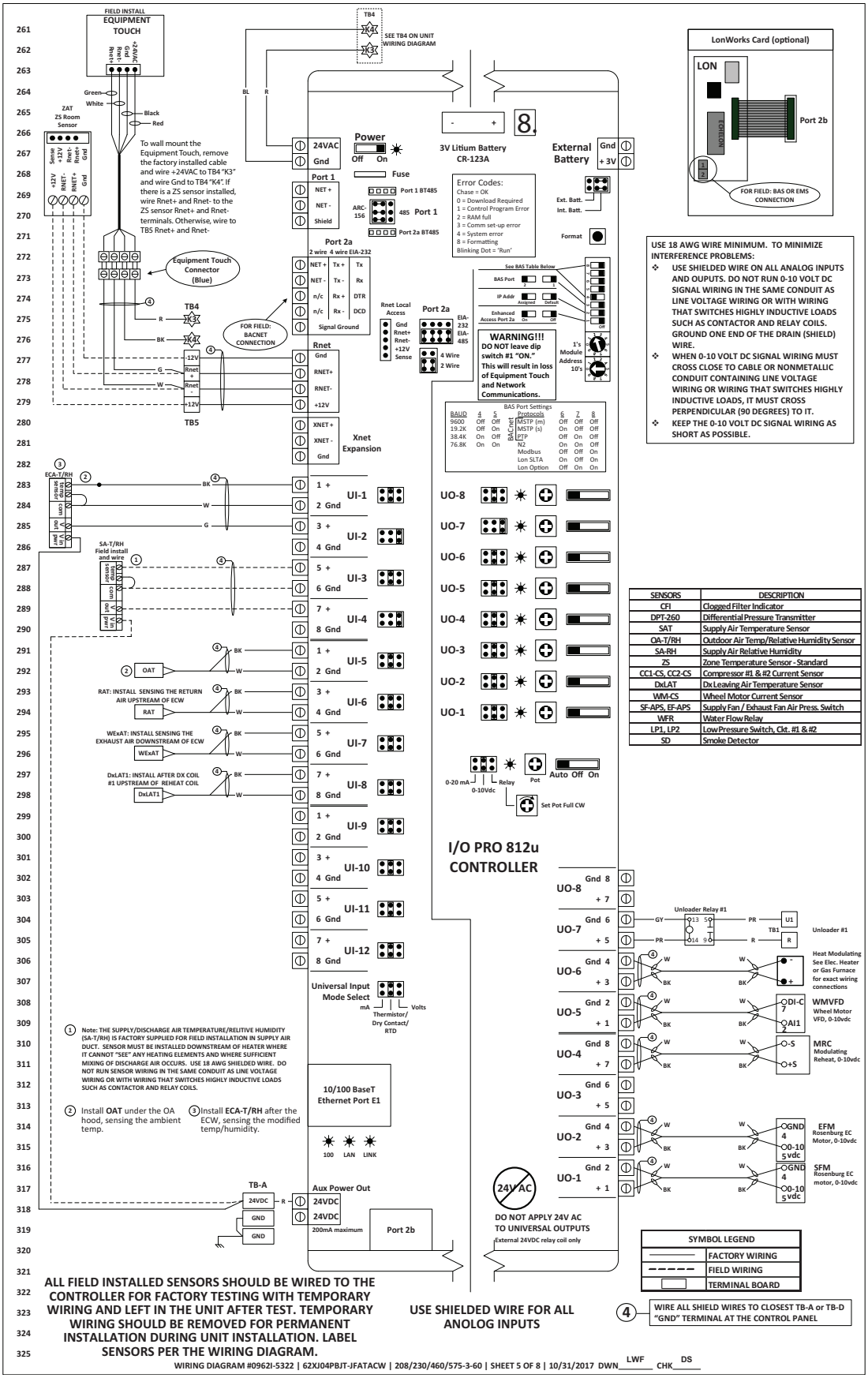


Fig. 14 — Installation Wiring Diagram (cont)

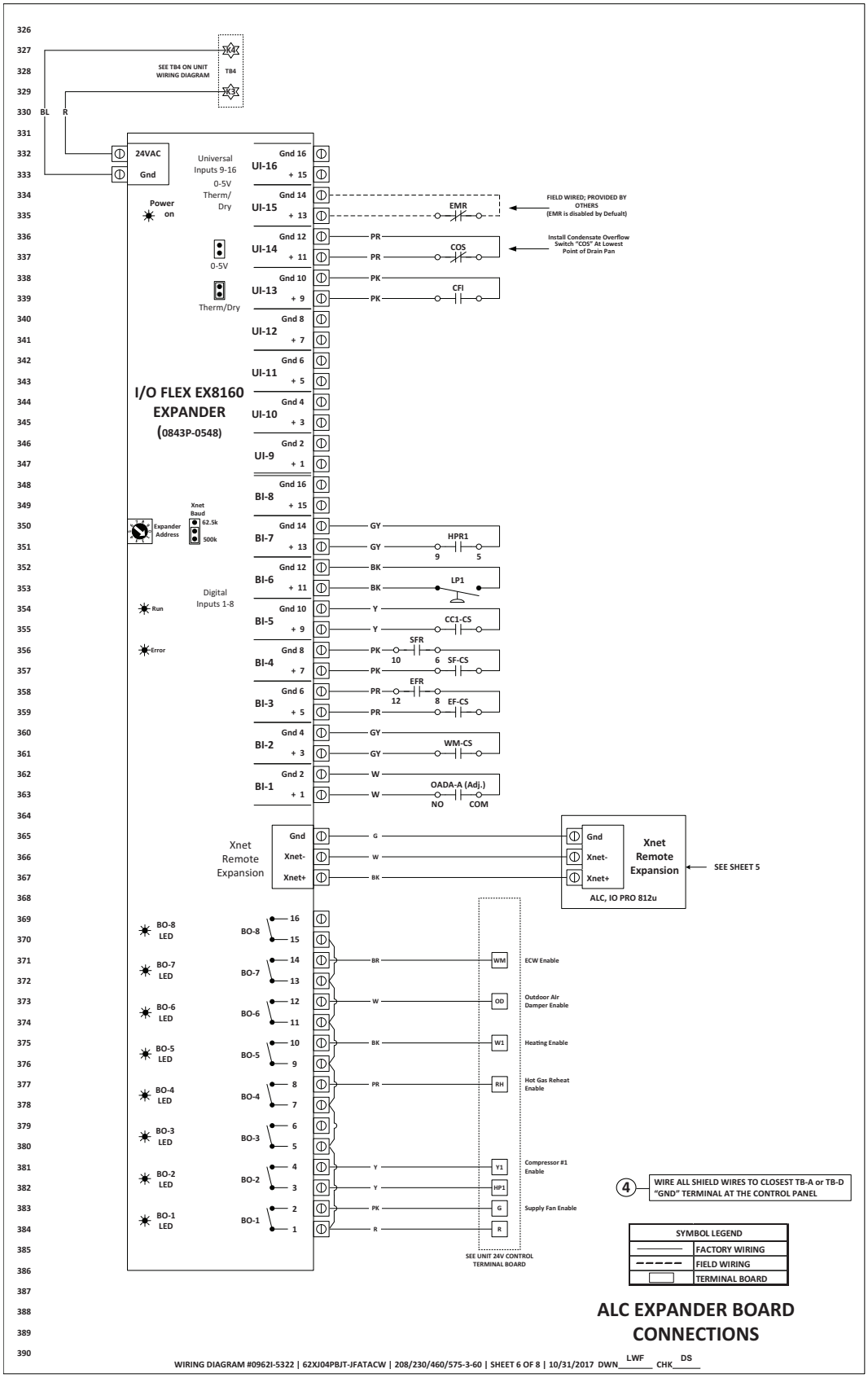


Fig. 14 — Installation Wiring Diagram (cont)

LEGEND - ITEMS INSIDE CONTROL PANEL			
ITEM	FUNCTIONAL DESIGNATION	LINE NUMBER	DESCRIPTION
101	SFR	148	Supply Fan Motor Relay
102	MSP-SF	38	Motor Starter Protection-Supply Fan
103	SF-VFD	38	Supply Fan-Variable Frequency Drive
104	CC1	110	Compressor Contactor no. 1
105	CC1-A1, CC1-A2	#	"CC1" Auxiliary Contact no. 1 and 2
107	MSP-CC1	1	Motor Starter Protection-"CC1"
115	EFR	152	Exhaust Fan Relay
116	MSP-EF	46	Motor Starter Protection-Exhaust Fan
118	EGB	4	Equipment Grounding Bar
119	F1, F2, F3	59, 60, 61	Fusing-See Fuse Table on this sheet
120	CB	71	Circuit Breaker-See Fuse Table on this sheet
122	MSP-OF1	22	Motor Starter Protection-Outdoor Fan no. 1
126	OF1VFD	22, 25	Outdoor Fan Variable Frequency Drive no. 1
130	MRC1	202	Modulating Reheat Controller no. 1
131	PDB	1, 2, 3	Power Distribution Block
132	PM	59, 71	Power/Phase Monitor
133	RHR	156	Reheat Relay
135	T1	62, 67	Control Transformer no. 1
136	T2	200	Control Transformer no. 2
137	TB1	Sheet 2-5	Terminal Board no. 1
138	TB2	71	Terminal Board no. 2
139	TB3	204, 216	Terminal Board no. 3
140	TB-A	Sheet 5	Terminal Board no. -A
147	MSP-WM	54	Motor Starter Protection-Wheel Motor
148	WMVFD	54	Wheel Motor Variable Frequency Drive
150	WM-CS	55, 329	Wheel Motor Current Sensor
# SEE LINE NUMBER TO THE RIGHT OF CONTACTOR COIL ON WIRING DIAGRAM.			

LEGEND - ITEMS OUTSIDE CONTROL PANEL			
ITEM	FUNCTIONAL DESIGNATION	LINE NUMBER	DESCRIPTION
101	BCTL	165	BCTL
102	BOS1	132	Bleed-Off Solenoid no. 1
103	CCH1	4	Compressor Crankcase Heater No. 1
104	CM1	2	Compressor Motor No. 1
105	DPT260	340, 342	Differential Pressure Transmitter 260 (SF and EF)
106	EFM1	47	Exhaust Fan Motor No. 1
107	FS	71	Fire Stat
108	HP1	110	High Pressure Switch No. 1
109	LP1	265	Low Pressure Switch No. 1
110	OFM1	29	Outdoor Fan Motor No. 1
111	SFM1	39	Supply Fan Motor No. 1
112	WM	55	EC Wheel Motor
# SEE LINE NUMBER TO THE RIGHT OF CONTACTOR COIL ON WIRING DIAGRAM.			

SYMBOL LEGEND			
	FACTORY WIRING		NORMALLY OPEN CONTACTS
	FIELD WIRING		NORMALLYCLOSED CONTACTS
	EARTH GROUND		IDENTIFIABLE TERMINAL
	CHASSIS (PANEL) GROUND		NON-IDENTIFIABLE TERMINAL, OTHER WIRE JUNCTIONS, INCLUDING SCHEMATIC
	COIL		

# : BLOWER MOTOR MINIMUM WIRE SIZE		
HP	208/230 VOLT	460 VOLT
1/2 THRU 3	14 AWG	14 AWG
5	12 AWG	14 AWG
7-1/2	10 AWG	14 AWG
10	8 AWG	12 AWG
15	6 AWG	12 AWG
20	4 AWG	10 AWG

## : COMPRESSOR MINIMUM WIRE SIZE			
MODEL	208/230 VOLT	460 VOLT	575 VOLT
03	12 AWG	12 AWG	12 AWG
04	12 AWG	12 AWG	12 AWG
05	12 AWG	12 AWG	12 AWG
06	12 AWG	12 AWG	12 AWG
07	10 AWG	12 AWG	12 AWG
08	10 AWG	12 AWG	12 AWG

WIRE COLOR LEGEND	
ABBREVIATION	COLOR
BK	BLACK
BL	BLUE
BR	BROWN
G	GREEN
O	ORANGE
PK	PINK
PR	PURPLE
R	RED
W	WHITE
Y	YELLOW

NOTE: NUMBER PLACED AFTER DASH FOLLOWING COLOR CODE INDICATES WIRE GAGE. EX. - BK-12 IS A BLACK, 12 AWG WIRE. NO NUMBER AFTER COLOR CODE INDICATES 18 AWG WIRE. EX. - BK IS A BLACK 18 AWG WIRE.

FUSE TABLE						
FUSE NO.	CLASS	VAC	AMPS-208/230V	AMPS-460V	XFMR	TIME DELAY
F1, F3	CC	600	3	2	350VA	YES
	CC	600	2	1.5	250VA	YES
	CC	600	2	1.5	200VA	YES
	CC	600	1.5	3/4	150VA	YES
F2, F9, F10	CC	600	1	1	N/A	YES
CB	CC	600	16	16	350VA	YES
	CC	600	10	10	250VA	YES
	CC	600	10	10	200VA	YES
	CC	600	6	6	150VA	YES

24 Volt Class 2 Minimum Wire Size	
Wire Size	Maxium Run
18 AWG	50 Feet
16 AWG	75 Feet
14 AWG	100/125 Feet
14 AWG	150/200 Feet

1 FIELD POWER SUPPLY 208/230/460/575-3-60. MINIMUM CIRCUIT AMPACITY AND MAXIMUM SIZE AND TYPE OF BRANCH-CIRCUIT SHORT-CIRCUIT AND GROUND-FAULT PROTECTION PER UNIT RATING PLATE. PROVIDE DISCONNECTING MEANS AS REQUIRED.

2 TYPICAL MOTORS AND COMPRESSORS SHOWN. SEE CONNECTION DIAGRAM ON MOTOR OR COMPRESSOR FOR ACTUAL WIRING DETAIL.

6 INSTALL THE LIQUID LINE SOLENOID VALVE (LLS) and BLEED OFF SOLENOID (BOS) IN AIR HANDLING UNIT (AHU) FOR FIELD WIRING.

8 IF POWER MONITOR OUTPUT CONTACTS DO NOT TRANSFER WHEN POWER IS APPLIED TO UNIT (LED GLOWS RED DURING FAULT CONDITIONS):
1. VERIFY THAT ALL THREE PHASES ARE PRESENT AND ARE OF THE CORRECT VOLTAGE. IF ALL THREE PHASES ARE PRESENT AND ARE OF THE CORRECT VOLTAGE, PHASE ROTATION MAY BE INCORRECT. PERFORM STEP 2.
2. DISCONNECT POWER TO THE UNIT. VERIFY THAT POWER IS IN FACT DISCONNECTED. SWAP ANY TWO OF THE THREE UNIT POWER SUPPLY WIRES. WHEN POWER IS REAPPLIED, OUTPUT CONTACTS SHOULD NOW TRANSFER.

Fig. 14 — Installation Wiring Diagram (cont)

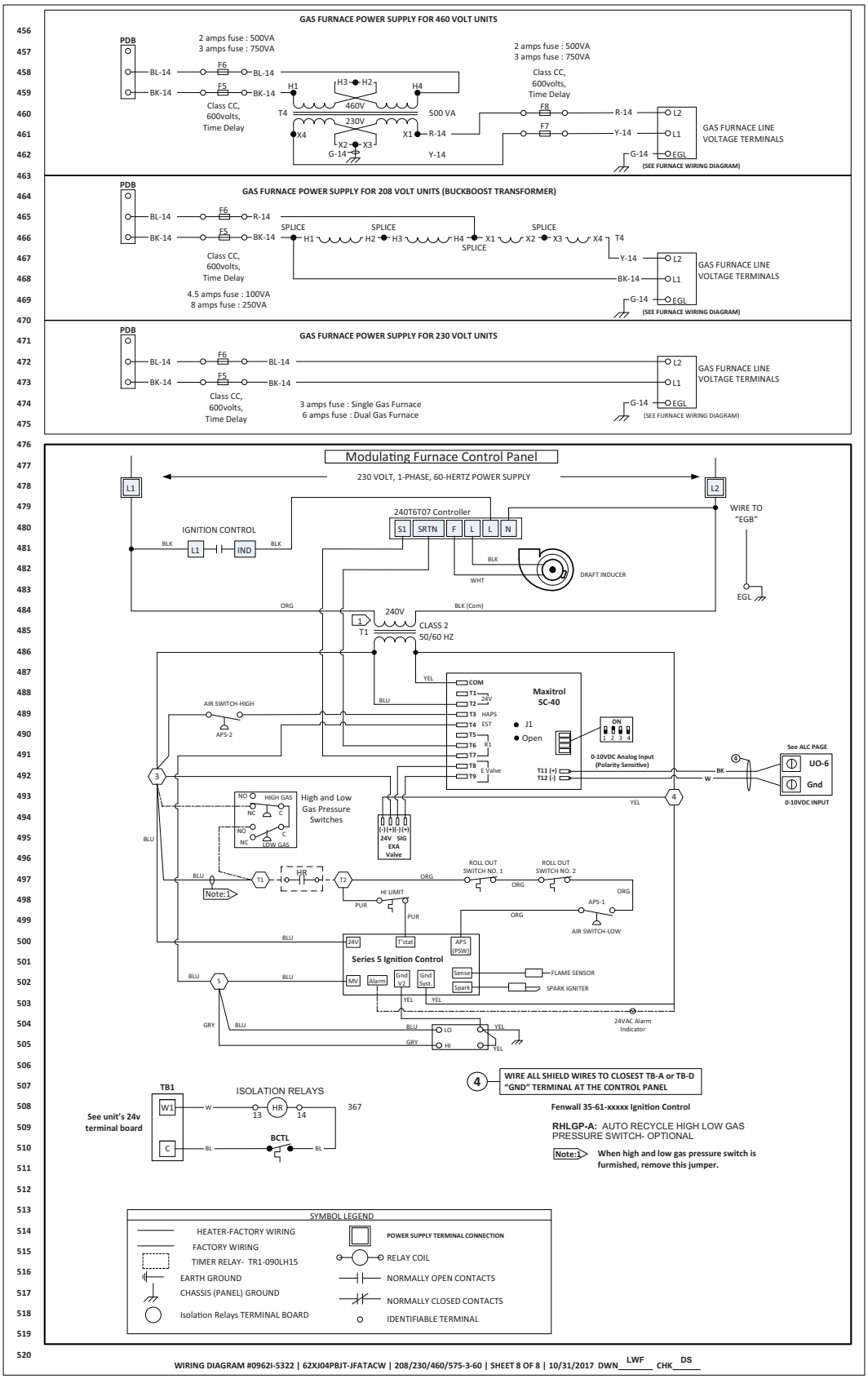


Fig. 14 — Installation Wiring Diagram (cont)

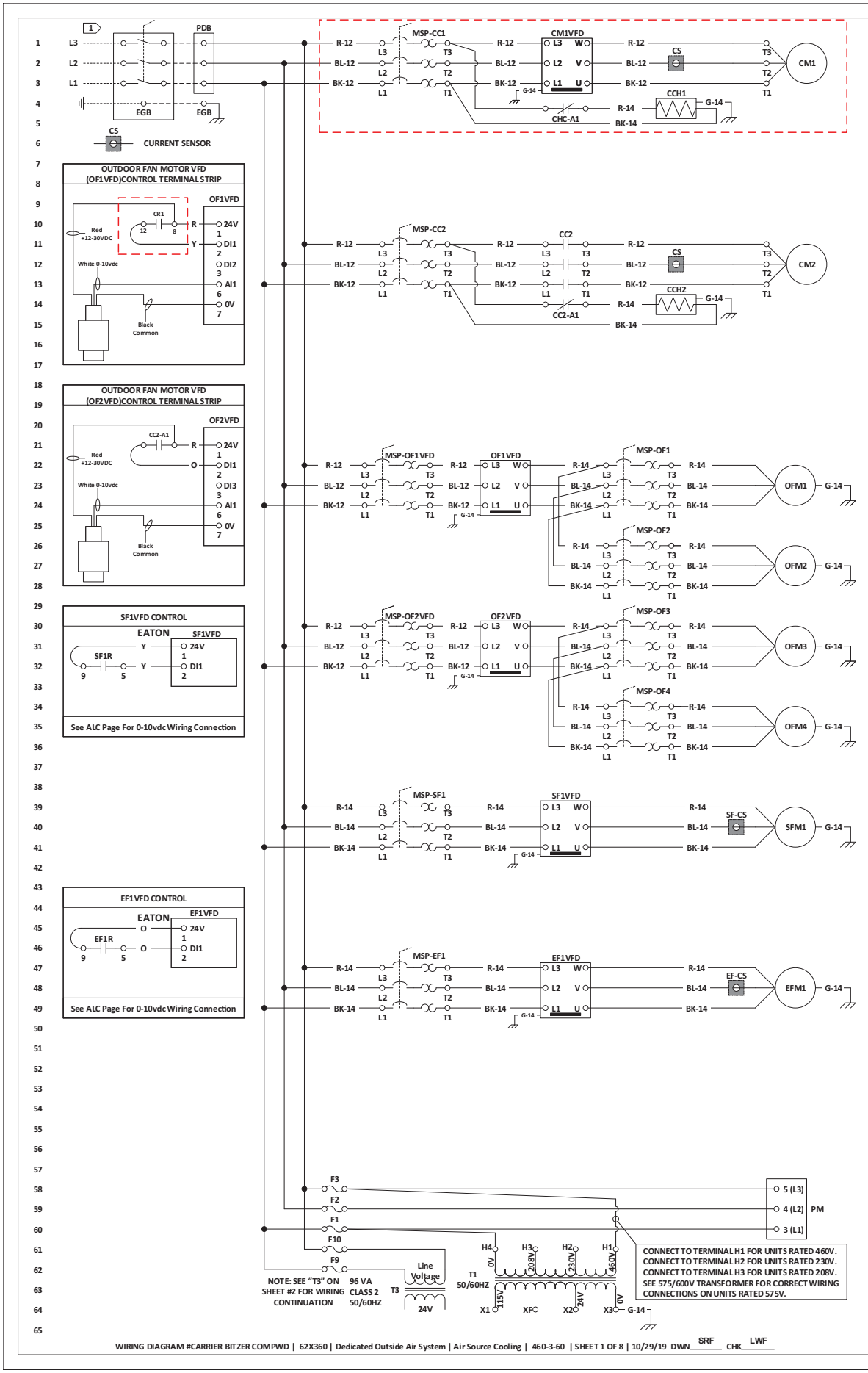


Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons)

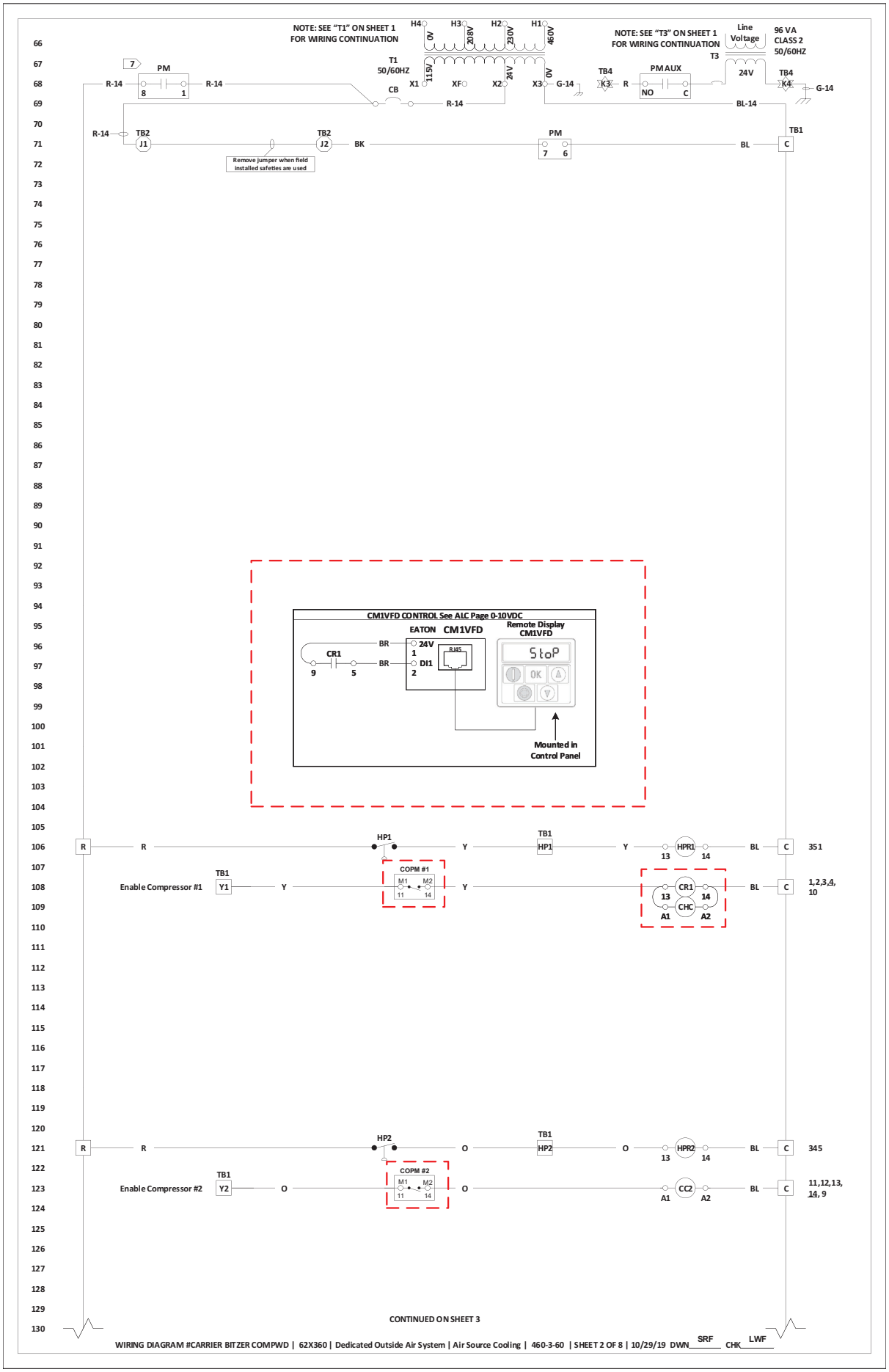


Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)

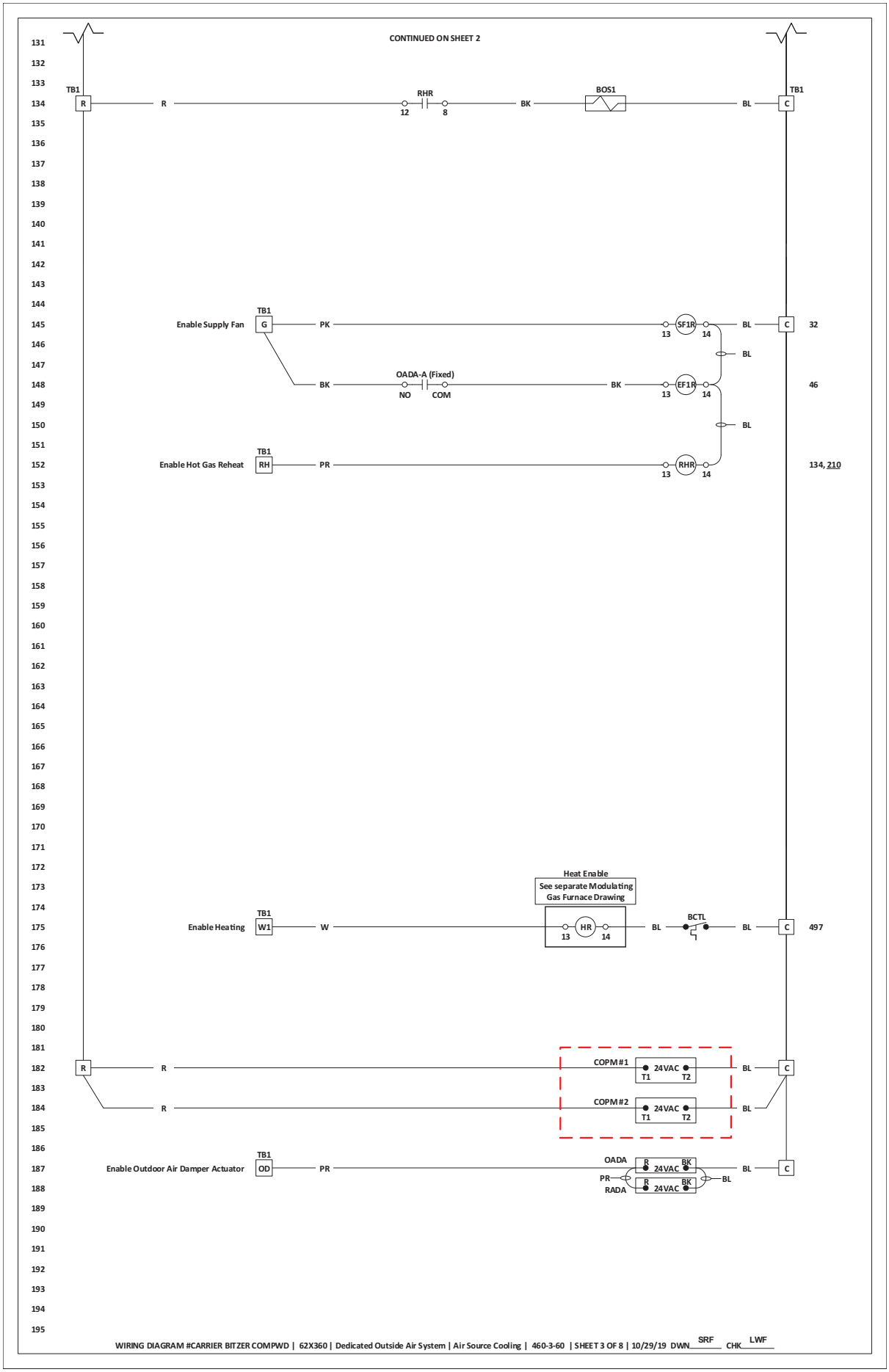


Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)

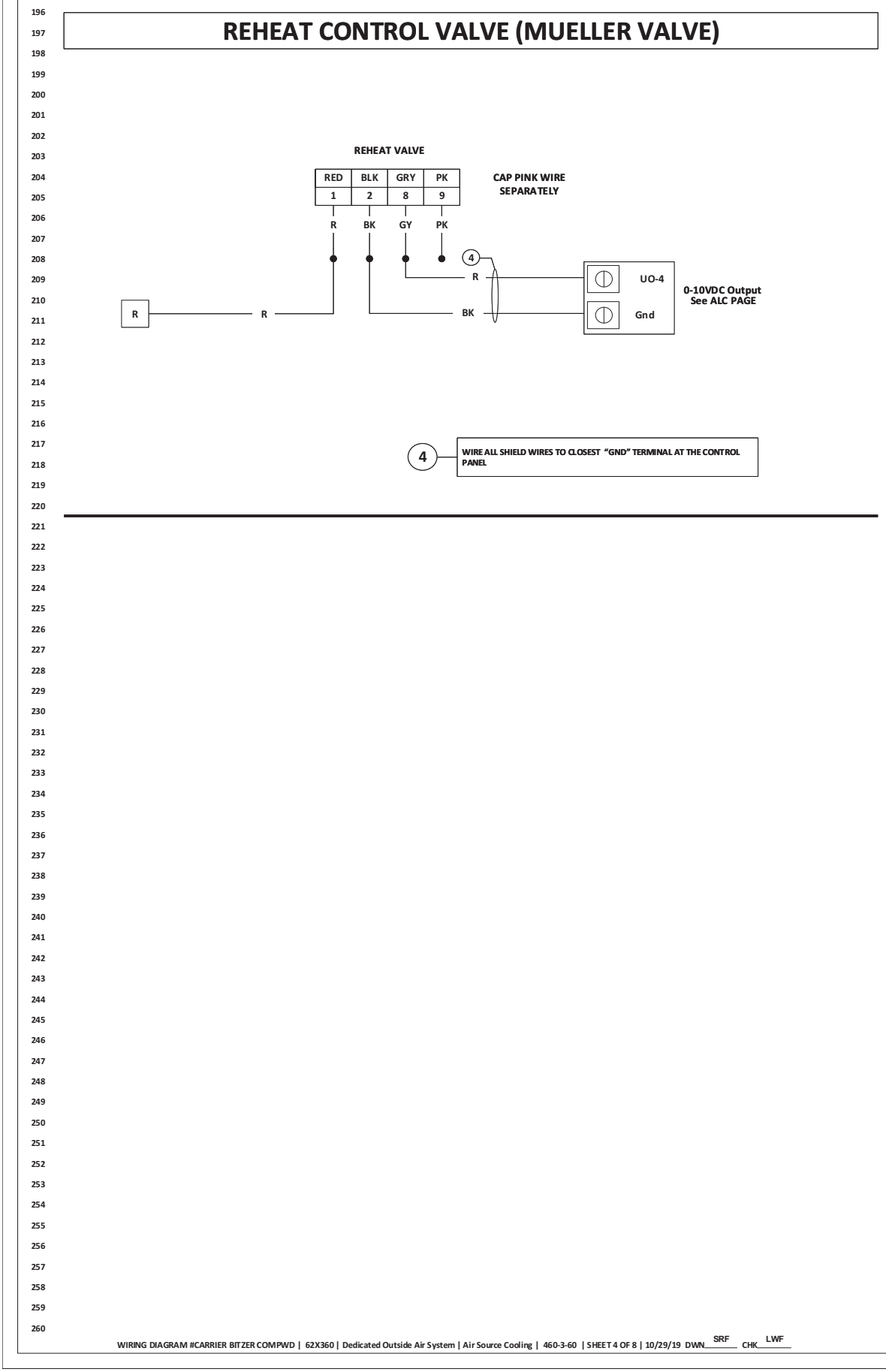


Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)

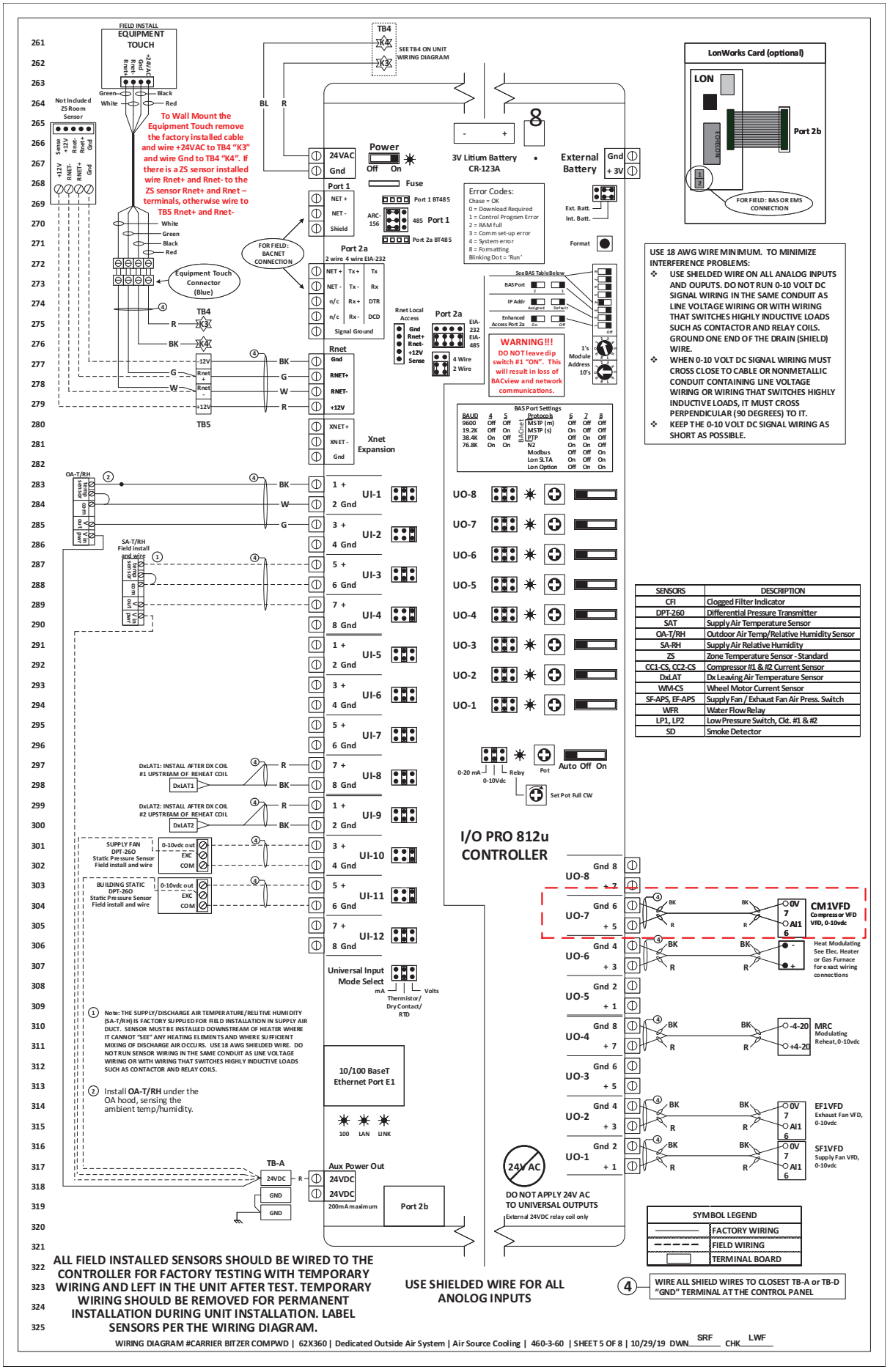


Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)

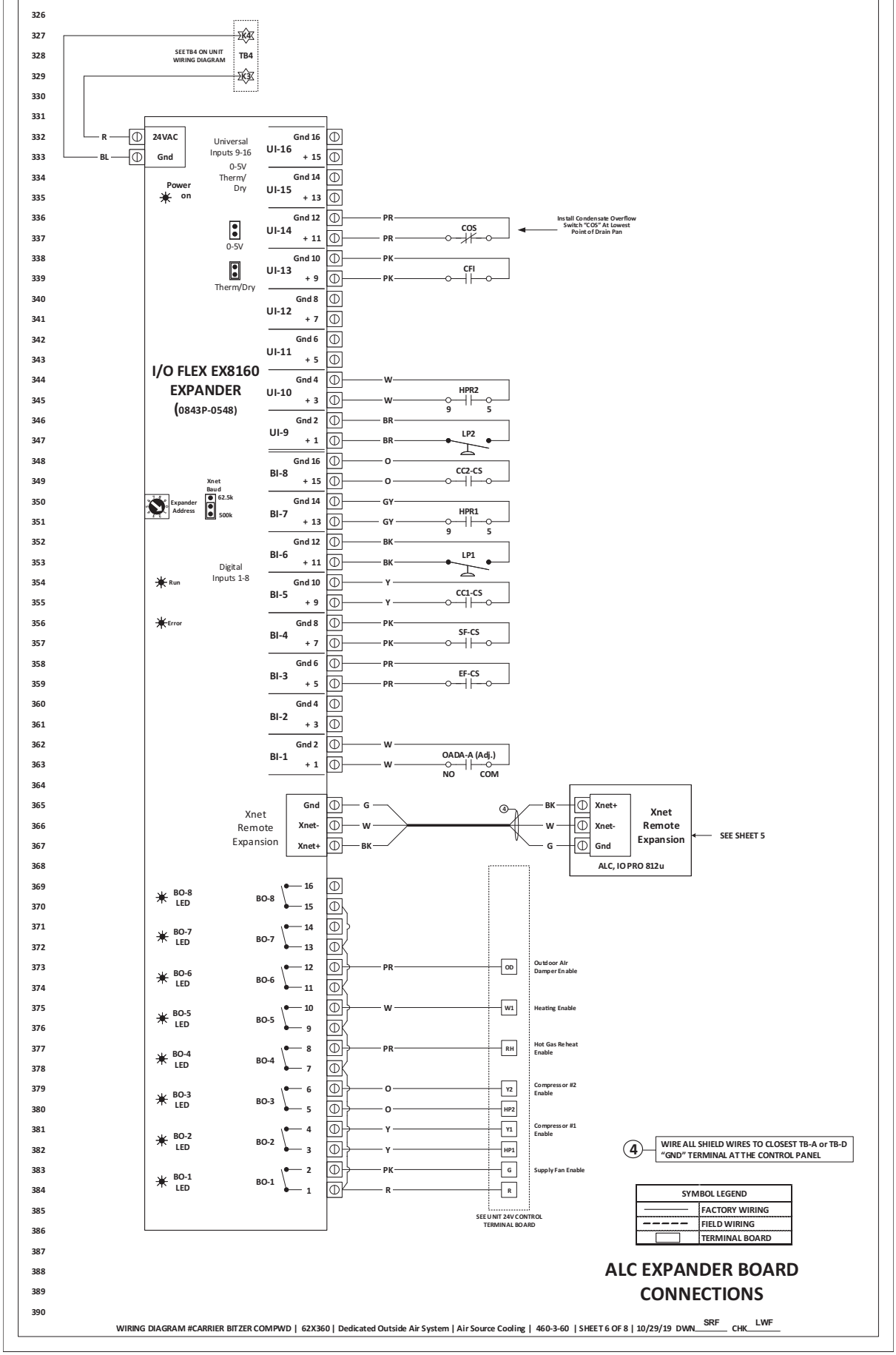


Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)

LEGEND - ITEMS INSIDE CONTROL PANEL			
ITEM	FUNCTIONAL DESIGNATION	LINE NUMBER	DESCRIPTION
101	SFC	148	Supply Fan Motor Contactor
101	SFR	148	Supply Fan Motor Relay
102	MSP-SF	38	Motor Starter Protection-Supply Fan
103	SF-VFD	38	Supply Fan-Variable Frequency Drive
104	CC1	110	Compressor Contactor no. 1
104	CC1A, CC1B	110, 113	Compressor Contactor no. 1A and 1B
105	CC1-A1, CC1-A2	#	"CC1" Auxiliary Contact no. 1 and 2
105	CC1A-A1, CC1A-A2	#	"CC1A" Auxiliary Contact no. 1 and 2
106	CC1B-A1	#	"CC1B" Auxiliary Contact no. 1
107	MSP-CC1	1	Motor Starter Protection-"CC1"
107	MSP-CC1A, MSP-CC1B	1, 6	Motor Starter Protection-"CC1A, CC1B"
108	CC2	123	Compressor Contactor no. 2
108	CC2A, CC2B	123, 126	Compressor Contactor no. 2A and 2B
109	CC2-A1, CC2-A2	#	"CC2" Auxiliary Contact no. 1 and 2
109	CC2A-A1, CC2A-A2	#	"CC2A" Auxiliary Contact no. 1 and 2
110	CC2B-A1	#	"CC2B" Auxiliary Contact no. 1
111	MSP-CC2	11	Motor Starter Protection-"CC2"
111	MSP-CC2A, MSP-CC2B	11, 16	Motor Starter Protection-"CC2A, CC2B"
112	DIG1	108	Digital Compressor no. 1 Unloader Solenoid
112	DIG1, DIG2	108,121	Digital Compressor no. 1 and 2 Unloader Solenoid
113	DR1	91	Defrost Relay no. 1
113	DR1, DR2	91, 99	Defrost Relay no. 1 and 2
114	DTM1	88	Defrost Timer no. 1
114	DTM1, DTM2	88, 96	Defrost Timer no. 1 and 2
115	EFC	152	Exhaust Fan Contactor
115	EFR	152	Exhaust Fan Relay
116	MSP-EF	46	Motor Starter Protection-Exhaust Fan
117	EFVFD	46	Exhaust Fan-Variable Frequency Drive
118	EGB	4	Equipment Grounding Bar
119	F1, F2, F3	59, 60, 61	Fusing-See Fuse Table on this sheet
120	CB	71	Circuit Breaker-See Fuse Table on this sheet
121	OFC1	79	Outdoor Fan Contactor no. 1
121	OFC1, OFC2	79, 83	Outdoor Fan Contactor no. 1 and 2
121	MSP-OFVFD1 & 2	17, 29	MSP. Outdoor Fan VFD no. 1 and 2
122	MSP-OF1	22	Motor Starter Protection-Outdoor Fan no. 1
123	MSP-OF2	30	Motor Starter Protection-Outdoor Fan no. 2
123	MSP-OF2	26	Motor Starter Protection-Outdoor Fan no. 2
124	MSP-OF3	30	Motor Starter Protection-Outdoor Fan no. 3
125	MSP-OF4	34	Motor Starter Protection-Outdoor Fan no. 4
126	OF1VFD	22, 25	Outdoor Fan Variable Frequency Drive no. 1
126	OF1VFD, OF2VFD	22, 25, 30	Outdoor Fan Variable Frequency Drive no. 1 and 2
128	HARM	Sheet 4	Heating Analog Relay Module
129	MDC1	214	Modulating Discharge-Line Controller no. 1
129	MDC1, MDC2	214	Modulating Discharge-Line Controller no. 1 and 2
130	MRC1	202	Modulating Reheat Controller no. 1
130	MRC1, MRC2	202	Modulating Reheat Controller no. 1 and 2
131	PDB	1, 2, 3	Power Distribution Block
132	PM	59, 71	Power/Phase Monitor
133	RHR	156	Reheat Relay
134	RVR	158	Reversing Valve Relay
135	T1	62, 67	Control Transformer no. 1
136	T2	200	Control Transformer no. 2
137	TB1	Sheet 2-5	Terminal Board no. 1
138	TB2	71	Terminal Board no. 2
139	TB3	204, 216	Terminal Board no. 3
140	TB-A	Sheet 5	Terminal Board no. -A
144	TD1	113	Time Delay no. 1
144	TD1, TD2	113, 126	Time Delay no. 1 and 2
145	BY-PASS TIMER 1	115	By-pass Time Delay no. 1
145	BY-PASS TIMER 1 & 2	115, 128	By-pass Time Delay no. 1 and 2
146	WMC	463	Wheel Motor Contactor
146	WMR	???	Wheel Motor Relay
147	MSP-WM	54	Motor Starter Protection-Wheel Motor
148	WMVFD	54	Wheel Motor Variable Frequency Drive
149	C450	460	Johnson Control C450 (0-10VDC)
150	WM-CS	55, 329	Wheel Motor Current Sensor
151	1K Ohm	212, 213	Resistor, 1K Ohms for MDC
152	CR1	112	Compressor Relay no. 1
152	CR1 and CR2	112, 125	Compressor Relay no. 1 and 2
# SEE LINE NUMBER TO THE RIGHT OF CONTACTOR COIL ON WIRING DIAGRAM.			

LEGEND - ITEMS OUTSIDE CONTROL PANEL			
ITEM	FUNCTIONAL DESIGNATION	LINE NUMBER	DESCRIPTION
101	APS	265	Air Pressure Switch (Supply Fan)
102	APS	265, 266	Air Pressure Switch (Supply Fan and Exhaust Fan)
103	BCTL	165	BCTL
104	BOS1	132	Bleed-Off Solenoid no. 1
105	BOS1, BOS2	132, 134	Bleed-Off Solenoid no. 1 and 2
106	CCH1	4	Compressor Crankcase Heater No. 1
107	CCH1A, CCH1B	4, 9	Compressor Crankcase Heater No. 1A and 1B
108	CCH2	14	Compressor Crankcase Heater No. 2
109	CCH2A, CCH2B	14, 19	Compressor Crankcase Heater No. 2A and 2B
110	CM1	2	Compressor Motor No. 1
111	CM1A, CM1B	2, 7	Compressor Motor No. 1A and 1B
112	CM2	12	Compressor Motor No. 2
113	CM2A, CM2B	12, 17	Compressor Motor No. 2A and 2B
114	COPM1	110, 181	Compressor Overcurrent Protection Module no. 1
115	COPM2	123, 183	Compressor Overcurrent Protection Module no. 2
116	DPT260	340	Differential Pressure Transmitter 260 (SF)
117	DPT260	340, 342	Differential Pressure Transmitter 260 (SF and EF)
118	DTT1	93	Defrost T'stat No. 1
119	DTT1, DTT2	93, 101	Defrost T'stat No. 1 and 2
120	ECDA	179	Economizer Damper Actuator
121	ECDA	178, 179	Economizer Damper Actuator
122	EFM1	47	Exhaust Fan Motor No. 1
123	FS	71	Fire Stat
124	FZT	266	Freeze Stat
125	HP1	110	High Pressure Switch No. 1
126	HP2	123	High Pressure Switch No. 2
127	LP1	265	Low Pressure Switch No. 1
128	LP2	266	Low Pressure Switch No. 2
129	LSS1A, LSS1B	136, 138	Liquid Sub-Cooling Solenoid no. 1A and 1 B
130	LSS2A, LSS2B	140, 142	Liquid Sub-Cooling Solenoid no. 2A and 2B
131	LLS1	144	Liquid Line Solenoid no. 1
132	LLS1, LLS2	144, 146	Liquid Line Solenoid no. 1 and 2
133	OFM1	23	Outdoor Fan Motor No. 1
134	OFM2	31	Outdoor Fan Motor No. 2
135	OFM2	27	Outdoor Fan Motor No. 2
136	OFM3	31	Outdoor Fan Motor No. 3
137	OFM4	35	Outdoor Fan Motor No. 4
138	OFM5	39	Outdoor Fan Motor No. 5
139	OFM6	43	Outdoor Fan Motor No. 6
140	RVS1	73	Reversing Valve No. 1
141	RVS1, RVS2	73, 76	Reversing Valve No. 1 and 2
142	SFM1	39	Supply Fan Motor No. 1
143	WFS	268	Water Flow Switch
144	WM	55	EC Wheel Motor
# SEE LINE NUMBER TO THE RIGHT OF CONTACTOR COIL ON WIRING DIAGRAM.			

SYMBOL LEGEND			
	FACTORY WIRING		NORMALLY OPEN CONTACTS
	FIELD WIRING		NORMALLY CLOSED CONTACTS
	EARTH GROUND		IDENTIFIABLE TERMINAL
	CHASSIS (PANEL) GROUND	•	NON-IDENTIFIABLE TERMINAL, OTHER WIRE JUNCTIONS, INCLUDING SCHEMATIC
	COIL		

WIRE COLOR LEGEND	
ABBREVIATION	COLOR
BK	BLACK
BL	BLUE
BR	BROWN
G	GREEN
O	ORANGE
PK	PINK
PR	PURPLE
R	RED
W	WHITE
Y	YELLOW
NOTE: NUMBER PLACED AFTER DASH FOLLOWING COLOR CODE INDICATES WIRE GAGE. EX. - BK-12 IS A BLACK, 12 AWG WIRE. NO NUMBER AFTER COLOR CODE INDICATES 18 AWG WIRE. EX. - BK IS A BLACK 18 AWG WIRE.	

24 Volt Class 2 Minimum Wire Size	
Wire Size	Maxium Run
18 AWG	50 Feet
16 AWG	75 Feet
14 AWG	100/125 Feet
14 AWG	150/200 Feet

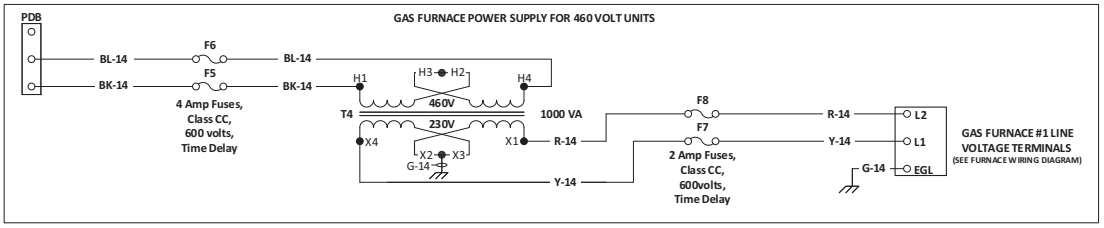
FUSE TABLE						
FUSE NO.	CLASS	VAC	AMPS-208/230V	AMPS-460V	XFMR	TIME DELAY
F1, F3	CC	600	3	2	350VA	YES
	CC	600	2	1.5	250VA	YES
	CC	600	2	1.5	200VA	YES
	CC	600	1.5	3/4	150VA	YES
F2, F9, F10	CC	600	1	1	N/A	YES
CB	CC	600	16	16	350VA	YES
	CC	600	10	10	250VA	YES
	CC	600	10	10	200VA	YES
	CC	600	6	6	150VA	YES

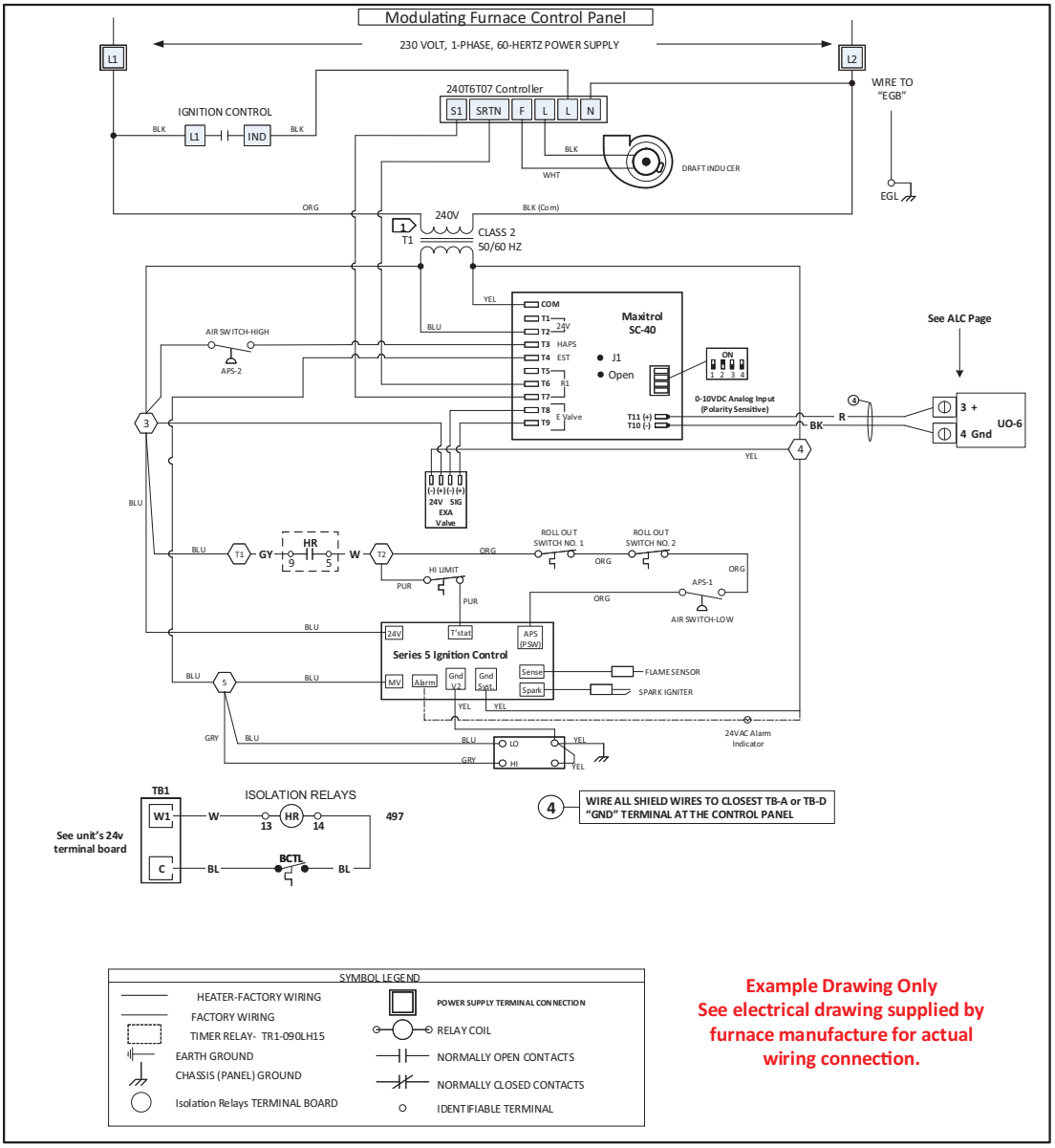
1 FIELD POWER SUPPLY 208/230/460/575-3-60. MINIMUM CIRCUIT AMPACITY AND MAXIMUM SIZE AND TYPE OF BRANCH-CIRCUIT SHORT-CIRCUIT AND GROUND-FAULT PROTECTION PER UNIT RATING PLATE. PROVIDE DISCONNECTING MEANS AS REQUIRED.

2 TYPICAL MOTORS AND COMPRESSORS SHOWN. SEE CONNECTION DIAGRAM ON MOTOR OR COMPRESSOR FOR ACTUAL WIRING DETAIL.

WIRING DIAGRAM #CARRIER BITZER COMPWD | 62X360 | Dedicated Outside Air System | Air Source Cooling | 460-3-60 | SHEET 7 OF 8 | 10/29/19 DWN SRF CHK LWF

Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)





WIRING DIAGRAM #CARRIER BITZER COMPWD | 62X360 | Dedicated Outside Air System | Air Source Cooling | 460-3-60 | SHEET 8 OF 8 | 10/29/19 DWN SRF CHK LWF

Fig. 15 — Wiring Diagram for Units with Inverter Driven Compressor (20+ tons) (cont)

MAINTENANCE

Prior to any maintenance or service to the unit, shut off, lockout, and tagout the electrical disconnect and fuel valve (if applicable) that supplies the unit in accordance with OSHA regulations and, if the unit includes electric or gas heat, allow ample time for the unit to cool. After maintenance is performed or the unit is serviced, the unit shall be re-commissioned per the start-up procedure.

Installation Code and Quarterly Inspections

All installation and service of Carrier's 62X equipment must be performed by a contractor qualified in the installation and service of equipment sold and supplied by Carrier, as well as conform to all requirements set forth in the manuals and all applicable governmental authorities pertaining to the installation, service, operation, and labeling of the equipment.

To help facilitate optimum performance and safety, Carrier recommends that a qualified contractor conducts, at a minimum, quarterly inspections of your 62X Series equipment and perform service where necessary, using only replacements parts sold and supplied by Carrier.

General

QUARTERLY

Follow the entire start-up procedure at this time and check settings (controls, operating temperatures, operating pressures, power, and control voltages) and operation.

Unit Exterior

CABINET EXTERIOR

After installation, fix scratches. Periodic painting should be done thereafter, as required. The caulk should be inspected annually. Re-apply caulk as needed to maintain integrity.

UNIT LOCATION

Verify that no flammable objects, liquids, or vapors are present near the unit. If unit includes gas heat, clearances to combustibles around the vent must be adhered to (see Clearances, page 3). Do not hang anything from or place anything on the unit. Keep the area around the unit free of all objects.

Direct Drive Supply and Exhaust Fans

BLOWER WHEEL

Inspect blower wheel and clean as necessary. A small build-up of dust can cause a significant decrease in blower performance. Check for excessive vibration. Clean and repair as required.

MOTORS

Inspection

Inspect motor every 3 months. Keep the motor clean and vent openings clear.

Lubrication

1. Motors with grease fittings must be lubricated based on Table 12.

Table 12 — Motor Lubrication Intervals

NEMA FRAME SIZE (MOTOR HP)	RATED AT 1800 RPM (HRS)
UP TO 210 (3-5)	6,000
210-280 (7.5-20)	4,750
280-360 (25-30)	3,700

NOTE: These intervals are based on severe duty. Over lubricating bearings could result in reduced motor life.

2. A high grade ball or roller bearing grease must be used. Recommended grease for standard service is Mobil Polyrex[1] EM. Other compatible greases include ChevronTexaco Polystar[2], ChevronTexaco Rykon[2] Premium 2, Pennzoil[3] Pen 2 Lube, and ChevronTexaco SRI.
3. Motors without grease fittings are sealed for life and do not require re-lubrication.

Lubricating Instructions

Before greasing, be sure fittings are clean and free from dirt. Remove grease relief plug or plate and, using a low-pressure grease gun, pump in the required grease. Do not over-grease. Re-lubrication intervals are specified in Table 12. After re-lubricating, allow motor to run for 10 minutes before replacing relief hardware.

IMPORTANT: In general, it is not recommended to mix greases of different brands. The mixing of different types of thickeners may destroy the composition and physical properties of the grease. In the event that a different grease is required by the end user, the following steps can be taken. Using the Lubricating Instructions, open grease outlet and purge the system as much as possible of the old or unwanted grease. Repeat this same operation after one week of service.

Condensing Fans

Manually rotate to ensure free movement. Check that all fan mounting hardware is tight. Check motor bearings for wear.

Refrigeration Circuit Components

EVAPORATOR COIL

Check for dirt and bent fins. Clean with water from blower side towards filter side.

CONDENSER COIL

Check for dirt and bent fins. Clean by brushing off with broom.

COMPRESSORS

Compressors are factory-supplied with a charge of oil and should not require additional maintenance.

Condensate Drain Pan and Drain

Check for blockages. Clean as necessary with a mixture of 1/2 cup (0.1 L) bleach and 1 gallon (1.9 L) of warm water, if signs of mold or algae are present.

Dampers

DAMPERS

Check and clean blades.

DAMPER MOTOR/LINKAGES

Verify that all damper linkages move freely. Lubricate if necessary.

Energy Conservation Wheel

BEARINGS

Small ECWs (smaller than ECW666) are provided with no maintenance inboard bearings. These bearings should require no maintenance during the life of the unit. Larger ECWs come equipped with an external flanged bearing that should be greased annually. Use a petroleum based lubricant.

DRIVE MOTOR

The drive motors should require no maintenance. Replace as necessary.

1. Polyrex EM is a trademark of Exxon Mobil corporation.
2. Polystar and Rykon are registered trademarks of Chevron.
3. Penzoil is a registered trademark of Pennzoil Quaker State Company.

DRIVE BELTS

Belts are multi-link belts with individual links constructed of a high performance polyurethane elastomer reinforced with multiple plies of polyester fabric. This belt provides a strong, yet flexible belting. The multi-link feature provides quick, easy servicing or replacement. Adjust and/or replace as necessary.

SEALS

Adjust and/or replace as necessary. The seals are made to clip on the cassette or post metal easily.

WHEEL

The wheel is somewhat self-cleaning through its normal action of rotating in and out of counter current airflow streams. In the event that routine quarterly inspection indicates that there is dirt or dust buildup within the wheel causing an excessive pressure drop, then wheel cleaning should be performed as follows:

1. Using a standard shop vacuum, vacuum any debris from both faces of the wheel. Slowly work around the entire face of the wheel to complete the procedure. Do not damage wheel face by excessive pressure of the vacuum nozzle on the wheel face.
2. Using 20 psi clean, dry air and a small air nozzle, blow air through one face of the wheel. At a similar location on the opposite side of the wheel, gently apply a shop vacuum to "receive" any remaining debris exiting the wheel. In the event that this method does not remove visual buildup or return pressure drop to within normal parameters, a wheel washing procedure is recommended. The energy conservation wheels can be washed thoroughly with water without affecting the performance of the wheel. The wheel will simply dry out following a washing procedure and resume normal energy transfer without any deviation in performance. If the energy conservation wheel can be easily removed from the cassette or unit, it is recommended to do so to facilitate the washing process. However, in most cases, it is impractical to remove larger wheels. Therefore, the washing procedure must take place within the air handling unit, and provisions need to be made to collect the runoff water from the bottom of the unit or collect the water by using a wet vac on the opposite side of the wheel during the procedure.
3. Shield all electrical components and bearings with plastic sheeting. Ensure that an adequate drainage system exists to collect runoff water from the bottom of the unit. Alternatively, use a wet vac with a wide nozzle on the opposite face of the wheel to collect the water during the washing procedure.
4. Disable the drive motor.
5. Using standard pressure water (do not use a high pressure washer) and working from the one side of the wheel, wash the wheel with a standard "garden" nozzle to flush any debris trapped within the flutes of the wheel. If desired, a mild detergent can also be used to enhance cleaning without affecting the performance of the wheel.

Gas Heater

GAS LINE

Check for gas leaks.

MANUAL SAFETY SHUT OFF VALVE

Check for gas leaks.

DIRECT SPARK IGNITER

Check for cracked ceramics, excessive carbon residue, or erosion of the electrode. Replace as required.

GAS VALVE

Check that gas valve seat is not leaking.

BURNERS

Soft brush or vacuum inside burner, at burner ports, and at air inlet between burner and manifold pipe to eliminate accumulation of lint and/or dirt.

HEAT EXCHANGER

Inspect for cracks, sagging, bending, or distortion. Clean with vacuum and/or stiff brush.

DRAFT INDUCER

Clean with compressed air or vacuum.

VENT PIPE/TERMINAL

Venting must be intact. Using a flashlight, look for obstructions, cracks on the pipe, gaps in the sealed areas, or corrosion. Clean vent terminal.

CONDENSATION DRAIN

Check for blockages.

Electric Heater Wiring and Wiring Connections

Check all wiring connections. Tighten as necessary. Check internal wiring. Replace as necessary with type THHN 221°F (105°C), 600V, 16-gauge wire or equivalent.

CONTROL PANEL

Check heater control panel for dust/dirt and moisture. Clean as necessary.

HEATING ELEMENTS

Check heating elements for dust/dirt buildup and/or broken elements. Replace elements and/or clean elements with low pressure air as necessary. Check element male/female chassis insulators for breaks and/or cracks. Replace as necessary. Check element support frame insulators. Replace missing or broken insulators as necessary.

Filters

Filters should be checked for dirt restriction on a monthly basis (or as required). Replace filters with filters of equal specification when they appear dirty.

TROUBLESHOOTING

See Tables 13-19 for possible causes and solutions to problems that may arise.

Table 13 — Supply Fan

PROBLEM	POSSIBLE CAUSE	SOLUTION
Blower motor does not run	Damper limit switch no closed or inoperative	Repair or replace switch.
	Motor thermal overloads tripped	For tripped condition - reset.
	Fuses blown or missing	Replace fuses.
	External power source lacking	Have incoming power lines checked.
	Motor inoperative	Repair or replace.
Blower motor runs, but fans do not supply enough make-up air	Intake filters dirty	Replace or clean.
	Obstruction in the intake	• Check dampers for proper operation • Clear all intake passages of obstructions.
	Fan wheel loose on shaft	Reposition and tighten.
	Access doors and panels not closed	Close.
	Excessive discharge resistance from • Dirty filters in discharge • External dampers.	Clean filters and/or re-adjust dampers.
Excessive fan noise	Fan motor bearing	Replace.
	Fan wheel loose on shaft	Reposition and re-tighten.
	Fan wheel rubbing	• Loosen setscrews. • Reposition cone and tighten.
	Fan wheel dirty	Clean.
	Loose duct	Tighten or reinforce.
	Foreign article in fan or duct	Remove.

Table 14 — Compressor

PROBLEM	POSSIBLE CAUSE	SOLUTION
Compressor will not start	Power off, loose electrical connections or fuse open	Check disconnect switch, fuses and wiring.
	Compressor contactor not closing	Check voltage to contactor coil, transformer slave relay, thermostat.
	Internal compressor thermal overload open	If compressor is hot, allow 2 hours to cool – see below.
	Compressor defective	Check compressor for electrical failure. Compressor may be seized; check for lock rotor amps.
	High or low pressure switch open or defective	Check calibration of high or low pressure switch.
	Oil pressure control open or defective	Check oil failure control – see below.
Compressor starts but cuts out on low pressure switch	Low on refrigerant	Check sight glass and check pressures.
	Airflow restricted	Check for dirty evaporator coil, dirty filters, dampers closed, iced evaporator, VFD settings, check motor amps, duct design.
	Restriction in liquid line	Check head pressure. Check and adjust TXV, if not functioning properly. Check pressure drop across filter drier.
	Defective low pressure switch	Check calibration of switch.
Compressor starts but cuts out on high pressure switch	Refrigerant overcharged	Check pressures, charge by subcooling.
	Condenser fan control has incorrect setting	Check calibration of the low ambient control.
	Fan motor defective	Check fan motor.
	Condenser coil inlet obstructed or dirty	Check coil and inlet clearances and for possible air recirculation.
	Air or non-condensables in system	Compare liquid refrigerant pressure with the saturated pressure. If the presence of air or non-condensables is suspected, the refrigerant must be reclaimed through a service port. The system must then be re-evacuated to 250-500 microns and recharged. The filter-drier should also be replaced before charging.
	Defective high pressure switch	Replace switch.
	Restriction in discharge or liquid line.	Check discharge and liquid line pressures. Check TXV.
Compressor cuts out on thermal overload	Low voltage	Check incoming voltage leg-to-leg. All three legs must be within 10% of the required voltage and the leg-to-three-leg average voltage variation must be less than 2% on each leg.
	Sustained high discharge pressure	Check running amperage and conditions described under high discharge pressure.
	High suction and discharge pressures	Check TXV setting. Check for air in system.
	Defective compressor overload	Allow compressor to cool for two hours if compressor is hot. Recheck for open circuit.
	Defective run capacitor	Check run capacitor for compressor and fan motor.
	Improper refrigerant charge	Check subcooling.
	Bearings or pistons too tight	Check for low oil level.
	Allow time for compressor to cool	Check dome temperature of compressor.
Noisy compressor	Scroll compressors are rotation sensitive	Reverse wiring at disconnect switch may require blower be rechecked for rotation.
	Refrigerant overcharged	Check pressures and subcooling.
	Excess or insufficient oil in compressor crankcase	Check oil level on hermetic compressors. Check total equivalent feet of piping. Add oil, as recommended.
	Liquid floodback	Check TXV setting. Refrigerant overcharge refrigerant circuit problem.
	Cyclical noise pattern	Digital compressors have a significant shift in generated noise when running uploaded.
	Compressor defective	Replace compressor.

LEGEND

TXV — Thermal Expansion Valve
VFD — Variable Frequency Drive

Table 15 — Refrigeration Circuit

PROBLEM	POSSIBLE CAUSE	SOLUTION
Noisy operation	Air noise	Check ductwork. Air velocity too high.
	Chattering contactor	Check for adequate control voltage. Check for shorts or breaks. Check thermostat. Check contactor points.
	Tubing rattle	Dampen by taping or clamping. Bend tubing away from contact, where possible.
High suction pressure	Excessive load on evaporator coil	Check for high entering wet bulb temperature. Check for excessive airflow.
	Broken compressor valves. Scroll compressors do not have valves	Scroll compressors should not be pumped down below 5 PSI.
	Compressor is unloaded	Recalibrate unloader pressure switch.
	Leaking check valve	Check temperature across check valve.
	Expansion valve not secured to suction line or TXV defective	Check the TXV, ensure bulb is insulated.
High discharge pressure	TXV setting	Check TXV setting and calibrate superheat.
	Air inlet to condenser dirty or obstructed	Check for proper clearances and possible air recirculation.
	Condenser fan, motor defective	Check condenser fan motor and run capacitor.
	Condenser fan control has incorrect setting	Check calibration of low ambient head pressure control.
Suction pressure too low	Refrigerant undercharge	Check pressures and subcooling.
	Blower running backwards	Interchange any two wires connected to motor.
	Defective or improperly adjusted expansion valve	Check superheat and adjust TXV.
	Dirty filter	Check filter and evaporator coil.
	Too little airflow or low entering air temperature	Check airflow and entering air wet bulb conditions.
	Restriction in suction or liquid line	Check refrigerant circuit for restriction.
Head pressure too low	Insufficient refrigerant charge	Check subcooling. Check for leak.
	Defective or improperly adjusted expansion valve	Check superheat and adjust TXV.
	Low suction pressure	See above – **suction pressure too low.**
	Condenser fan control setting	Check calibration of low ambient control.
	Defective compressor	See above – **high suction pressure**.
Compressor short cycles	Thermostat location or malfunction	Check thermostat. Check heat anticipator setting.
	Improper refrigerant charge	Check subcooling. Verify superheat.
	Defective high or low pressure control	Check high or low pressure switch.
	Cycling on internal overload	Possible tight bearings – see above.
	Defective expansion valve	Check TXV and superheat.
	Poor air distribution	Check ductwork for recirculation.
	High discharge pressure	See above – **high discharge pressure**.
	Leaking discharge valves in compressor	See above – **high suction pressure**.
Running cycle too long or unit operates continuously	Refrigerant undercharged	Check subcooling.
	Dirty filter or evaporator coil	Check filter, coil and airflow.
	Dirty or clogged condenser coil	Check coil and airflow.
	Air or other non-condensables in system	Check equalized high side pressure with equivalent outdoor temperature.
	Defective compressor	See above – **high suction pressure**.
	Restriction in suction and liquid line	Check for restrictions in refrigerant circuit.
	Control contacts stuck	Check thermostat, shorts in wiring, slave relay compressor contactor.
Supply air temperature too high	Refrigerant undercharge or leak in system	Check subcooling and check for leaks.
	Evaporator plugged with dirt or ice	Check evaporator, airflow, and filter.
	Improperly adjusted or defective expansion valve	Check superheat and adjust TXV. Check bulb.
	Defective compressor	Check compressor for proper operation.
	High discharge pressure	See above- **high discharge pressure**.
	Airflow is too high	Check external static pressure.
Supply air temperature too low	Airflow is too low	Check evaporator coil, filter. Check for closed dampers, grills, drive for loose parts, belts, misalignment. Check external static pressure.
	Return air temperature too low	Check entering air wet bulb conditions.
Liquid line too hot	Refrigerant undercharged	See above - **high discharge pressure.**
	High discharge pressure	Restriction upstream at point of frosting.
Suction line frosting	Insufficient evaporator airflow	Check airflow. Check fan VFD, closed dampers.
	Restriction in suction or liquid line	Restriction upstream at point of frosting.
	Malfunctioning or defective expansion valve	Check bulb of TXV.
Blower motor not running	Improper wiring	Check wiring diagram.
	Defective motor	Check motor controller.
	Defective thermostat or control circuit	Check “R” and “G” circuit.
	Motor off on overload protector	Allow motor to cool. Check amperage.

Table 16 — Variable Speed Head Pressure Control

PROBLEM	POSSIBLE CAUSE	SOLUTION
No fan operation	No 24V control voltage	Check for 24 VAC at control.
	No input pressure to control	Check alignment of capillary fitting. Schrader valve depressor must depress Schrader valve enough to allow pressure into capillary.
	Bad fan motor	Disconnect power. When P266 is used, place a jumper from L1 to M1 and connect power. If fan does not start, motor is bad and should be replaced.
	Pressure transducer problem	Disconnect 6 pin connector from right side of control. Place a jumper wire between third pin from the top and bottom pin on the control (not the cable). If fan goes to full speed, check for input pressure. If it has been determined there is adequate pressure, the transducer is bad and the control must be replaced.
Fan stops when pressure reached high end of operating range.	Control is not wired correctly	See wiring diagrams.
No fan modulation (on-off operation)	Control is not wired correctly	See wiring diagrams.
Fan starts at full speed	Control is not wired correctly	See wiring diagrams.
Erratic fan operation	Control is not wired correctly	See wiring diagrams.
	Dirty or blocked condenser coil	Clean condenser coil.
Fan motor is cycling on thermal overload	Dirty or blocked condenser coil	Clean condenser coil.
	Wrong motor for fan speed control application	Replace with motor approved for fan speed control application.
Erratic pressure control	Defective regulator	Replace defective part.
	Dirt causing regulator to bind	Disassemble regulator and clean internal parts. Install strainer.
	Power source to hot gas solenoid or operation of the solenoid is intermittent	Determine if problem is caused by supply voltage, solenoid, or excessive MOPD. Make changes necessary to correct problem.
Regulator leakage	Dirt in regulator causing seat to remain open	Clean regulator. Install strainer.
	Worn or eroded seating surface on regulator	Replace defective part.
Regulator hunting (chattering) with large fluctuations in controlled pressures	Regulator is oversized	Contact a certified technician for correctly sized regulator.
	Regulator and liquid injection thermovalve have control interaction	Increase superheat setting. Dampen bulb response by repositioning.
	Regulator and cylinder unloaders have control interaction	Increase differential between the controls by lowering the regulator's setpoint.
Regulator will provide pressure control	Regulator seat is restricted	Locate and remove stoppage. Install strainer.
	Pressure adjusting stem is set at a point so high that suction pressure never reaches the setpoint	Re-adjust the regulator.
	Strainer clogged at the regulator inlet	Locate and remove stoppage.
	MOPD exceeded across the solenoid or loss of source voltage	Replace solenoid or troubleshoot the electrical problem.
	Solenoid coil burned out	Replace coil.
	Wrong type of distributor for hot gas bypass to the evaporator	Install proper Venturi-Flo* type distributor for low pressure drop.
Regulator fails to close	Dirt under seat of regulator	Locate and remove stoppage. Install strainer or filter drier.
	Diaphragm failure (leakage around the adjusting stem)	Replace defective parts.
	Pressure adjusting stem is set at a point so high that suction never reaches the setpoint	Re-adjust the regulator.
	Blocked external equalizer passage	Locate and remove stoppage. Install strainer.
	Worn or eroded regulator seat	Replace defective part.

LEGEND

MOPD — Maximum Opening Pressure Difference

* Venturi-Flow is a trademark of Control Devices, LLC

Table 17 — Energy Wheel Conservation

PROBLEM	POSSIBLE CAUSE	SOLUTION
Inadequate wheel performance	Incorrect wheel rotation speed	Check wheel rotation speed.
	Worn wheel media or worn/out-of-place seals	Check wheel integrity and seals. Adjust and/or replace seals.
	Unanticipated entering air conditions	Check entering air conditions and compare to design.
	Dirty media	Check media for dirt and clean.
Improper wheel rotation	Misaligned belts	Check drive belts for engagement with sheaves.
	Improper motor operation	Check drive motor and drive motor wiring for proper voltage.
	Improper VFD operation	Check VFD programming.
	Improper VFD sensor operation	Check VFD input sensor (temperature/relative humidity) for malfunctioning.
High pressure drop	Unanticipated airflow	Check airflow and compare to design.
	Dirty filters	Check filters and clean/replace.
	Dirty media	Check media for dirt and clean.
Noise	Out-of-place seals	Check seals and adjust.
	Worn bearings	Check bearings.
	Misaligned belts	Check belts for slippage.

Table 18 — Gas Heater

PROBLEM	POSSIBLE CAUSE	SOLUTION
Steady on - No operation	Internal control fault	
One flash - Combustion airflow fault	Faulty combustion blower	Check for 230V supply and tightness at fan connections. If no power, replace.
	Airflow switch not closing	
	Airflow switch opened during operation	
Two flashes - Flame with no call for heat	Faulty gas valve	Check voltage to gas valve with thermostat off. Valve should not be powered. If there is gas flow, replace valve.
Three flashes - Ignition lockout *	Ignition control miscommunication	Reset ignition control by removing 24V power to ignition control terminal 24VAC.
	Dirty burners	Clean burners to ensure proper flame carryover.
	Faulty spark igniter	Check if connecting lead or spark igniter are damaged. If yes, replace.
	Faulty flame sensor	Check if connecting lead or flame probe are damaged and/or touching earthed components. If yes, replace.
	Incorrect gas pressure at gas valve	Check that the gas pressure at inlet of valve is correct for the gas type. If not, correct pressure problem.
	Faulty gas valve	Check that the gas pressure at outlet of the valve rises when valve turns on and returns to zero, or lower, when valve turns off. If not, replace.

* LED flashed on for 0.25 seconds and off for 0.25 seconds during fault condition. The pause between fault codes is 3 seconds.

Table 19 — Electric Heater

PROBLEM	POSSIBLE CAUSE	SOLUTION
No heat	No call for heat	Check that the controls are set to call for heating.
	No power and control voltage to heater	Check that heater has power and control voltage.
	Faulty component	Check components with continuity meter. Replace, as necessary.
Not enough heat	Faulty component	Check that ampere draw is reasonably close to that on the heater data plate. If more than 10% short, begin testing individual components. Replace, as necessary.
	Heat anticipator current draw too low, causing short cycling.	Check current draw.
Heater cycling on automatic limit	Improper airflow	Check for obstructions to return air, loose or broken fan belt, and clogged filters and/or evaporator coils.
	Faulty temperature limit switch	Test, and if necessary, replace.
Open secondary protective device	Stuck contactor	Check contactor.
Contractor chatter	Improper wiring	Check wiring.
	Insufficient transformer capacity	Check transformer.
Element failure	Corroded hardware and/or loose connections	Check hardware.

Table 19 — Revision G Mapping Points

BACnet					MODBUS		N2		LONWORKS	
POINT NAME	OBJECT NAME	READ/ WRITE	OBJECT		REGISTER		TYPE	ADDRESS	NV NAME	SNVT
			TYPE	ID	TYPE	NUMBER				
Alarm Reset	alarm_reset	R/W	BV	900	Coil	20	BD	137	nviAlarmReset	SNVT_switch(95)
Alarm Status	alarm_status	R	BV	851	Discrete Input	47	BD	51	nvoAlarmStatus	SNVT_switch(95)
Allow Compressor Disable	comp_dis	R/W	BV	539	Coil	13	BD	129	nviCompDis	SNVT_switch(95)
Allow Zone Set Point Adjust	zat_sp_adj_en	R/W	BV	202	Coil	10	BD	121	nviZatSpAdjEn	SNVT_switch(95)
Aux. Htg. Enable	ahtg_en	R	BV	580	Discrete Input	106	BD	112	nvoAhtgEn	SNVT_switch(95)
BAS Com Lost OAT/OARH Status	bas_com_lost_on	R	BV	1102	Discrete Input	38	BD	42	nvoBasComLostOn	SNVT_switch(95)
BAS Comm. Lost Delay	bas_comm_lost_delay	R/W	AV	103	Holding Register (Float)	129	ADF	104	nviBasCommLostDe	SNVT_count_inc(9)
BAS Communication Lost	bas_comm_lost	R	BV	107	Discrete Input	39	BD	43	nvoBasCommLost	SNVT_switch(95)
BAS LOST	bas_comm_lost_alarm	R	BV	899	Discrete Input	46	BD	50	nvoBasCommLostAl	SNVT_switch(95)
BAS Manual Occ Control	occ_en	R/W	BV	101	Coil	7	BD	113	nviOccEn	SNVT_switch(95)
C1 ALARM	c1_alarm	R	BV	863	Discrete Input	91	BD	96	nvoC1Alarm	SNVT_switch(95)
C1 Command	c1_cmd	R	BV	243	Discrete Input	48	BD	52	nvoC1Cmd	SNVT_switch(95)
C1 Freeze Status	c1_freeze_stat	R	BV	555	Discrete Input	9	BD	10	nvoC1FreezeStat	SNVT_switch(95)
C1 HAND	c1_hand_alarm	R	BV	873	Discrete Input	7	BD	8	nvoC1HandAlarm	SNVT_switch(95)
C1 STOP	c1_stop_alarm	R	BV	864	Discrete Input	92	BD	97	nvoC1StopAlarm	SNVT_switch(95)
C1/C2 Stop Disables Unit	c1c2_stop_disables_unit	R/W	BV	847	Coil	4	BD	18	nviC1c2StopDisab	SNVT_switch(95)
C1DIG Percentage Before C2 SP	dig1_pct_c2_sp	R/W	AV	6402	Holding Register (Float)	7	ADF	4	nviDig1PctC2Sp	SNVT_lev_percent(81)
C2 ALARM	c2_alarm	R	BV	877	Discrete Input	68	BD	73	nvoC2Alarm	SNVT_switch(95)
C2 Command	c2_cmd	R	BV	244	Discrete Input	49	BD	53	nvoC2Cmd	SNVT_switch(95)
C2 Freeze Status	c2_freeze_stat	R	BV	556	Discrete Input	10	BD	11	nvoC2FreezeStat	SNVT_switch(95)
C2 HAND	c2_hand_alarm	R	BV	887	Discrete Input	36	BD	40	nvoC2HandAlarm	SNVT_switch(95)
C2 STOP	c2_stop_alarm	R	BV	878	Discrete Input	96	BD	101	nvoC2StopAlarm	SNVT_switch(95)
CFI ALARM	cfi_alarm	R	BV	893	Discrete Input	99	BD	104	nvoCfiAlarm	SNVT_switch(95)
CFI Status	cfi_stat	R	BV	232	Discrete Input	58	BD	62	nvoCfiStat	SNVT_switch(95)
Clg #1 Enable LDB	clg1_en_ldb	R/W	AV	309	Holding Register (Float)	91	ADF	89	nviClg1EnLdb	SNVT_temp_p(105)
Clg #1 Enable SP	clg1_en_sp	R/W	AV	307	Holding Register (Float)	135	ADF	107	nviClg1EnSp	SNVT_temp_p(105)
Clg #1 Enable UDB	clg1_en_udb	R/W	AV	308	Holding Register (Float)	93	ADF	91	nviClg1EnUdb	SNVT_temp_p(105)
Clg #1 ZAT LDB	clg1_zat_ldb	R/W	AV	316	Holding Register (Float)	95	ADF	92	nviClg1ZatLdb	SNVT_temp_p(105)
Clg #1 ZAT UDB	clg1_zat_udb	R/W	AV	315	Holding Register (Float)	99	ADF	94	nviClg1ZatUdb	SNVT_temp_p(105)
Clg #2 Enable LDB	clg2_en_ldb	R/W	AV	329	Holding Register (Float)	103	ADF	95	nviClg2EnLdb	SNVT_temp_p(105)
Clg #2 Enable SP	clg2_en_sp	R/W	AV	327	Holding Register (Float)	190	ADF	110	nviClg2EnSp	SNVT_temp_p(105)
Clg #2 Enable UDB	clg2_en_udb	R/W	AV	328	Holding Register (Float)	105	ADF	96	nviClg2EnUdb	SNVT_temp_p(105)
Clg #2 ZAT LDB	clg2_zat_ldb	R/W	AV	334	Holding Register (Float)	109	ADF	97	nviClg2ZatLdb	SNVT_temp_p(105)
Clg #2 ZAT UDB	clg2_zat_udb	R/W	AV	333	Holding Register (Float)	111	ADF	108	nviClg2ZatUdb	SNVT_temp_p(105)
Clg Modulation SP Occ	clg_mod_sp_o	R/W	AV	375	Holding Register (Float)	150	ADF	122	nviClgModSpO	SNVT_temp_p(105)
Clg SAT SP Occ	clg_sat_sp_o	R/W	AV	313	Holding Register (Float)	59	ADF	54	nviClgSatSpO	SNVT_temp_p(105)
Clg SAT SP Unocc	clg_sat_sp_u	R/W	AV	314	Holding Register (Float)	61	ADF	55	nviClgSatSpU	SNVT_temp_p(105)
Clg. Mode Low Limit Unocc	clg_llim_u	R/W	AV	320	Holding Register (Float)	63	ADF	56	nviClgLlimU	SNVT_temp_p(105)
CO2 Dead Band	co2_db	R/W	AV	217	Holding Register (Float)	65	ADF	57	nviCo2Db	SNVT_ppm(29)
CO2 FAIL	co2_failure	R	BV	854	Discrete Input	86	BD	91	nvoCo2Failure	SNVT_switch(95)
CO2 From BAS	co2_bas	R/W	AV	213	Holding Register (Float)	117	ADF	98	nviCo2Bas	SNVT_ppm(29)
CO2 Occupancy Status	co2_occ_stat	R	BV	203	Discrete Input	107	BD	116	nvoCo2OccStat	SNVT_switch(95)
CO2 Set Point #1	co2_sp1	R/W	AV	215	Holding Register (Float)	3	ADF	2	nviCo2Sp1	SNVT_ppm(29)
CO2 Set Point #2	co2_sp2	R/W	AV	216	Holding Register (Float)	67	ADF	58	nviCo2Sp2	SNVT_ppm(29)
CO2 Status	co2_stat	R	AV	214	Input Register (Float)	3	ADF	26	nvoCo2Stat	SNVT_ppm(29)
Comp #1 CS Status	cc1_cs_stat	R	BV	224	Discrete Input	52	BD	56	nvoCc1CsStat	SNVT_switch(95)
Comp #2 CS Status	cc2_cs_stat	R	BV	227	Discrete Input	55	BD	59	nvoCc2CsStat	SNVT_switch(95)
Compressor Disable SP	comp_dis_sp	R/W	AV	541	Holding Register (Float)	69	ADF	59	nviCompDisSp	SNVT_temp_p(105)
Compressor Disabled by OAT	comp_dis_oat	R	BV	540	Discrete Input	66	BD	70	nvoCompDisOat	SNVT_switch(95)
Condensate Overflow Switch	cos_stat	R	BV	233	Discrete Input	59	BD	63	nvoCosStat	SNVT_switch(95)
Cooling #1 Enable	clg1_en	R	BV	551	Discrete Input	67	BD	71	nvoClg1En	SNVT_switch(95)
Cooling #2 Enable	clg2_en	R	BV	552	Discrete Input	8	BD	9	nvoClg2En	SNVT_switch(95)
Cooling Mode Low Limit	clg_llim	R/W	AV	319	Holding Register (Float)	71	ADF	60	nviClgLlim	SNVT_temp_p(105)
COS ALARM	cos_alarm	R	BV	894	Discrete Input	101	BD	106	nvoCosAlarm	SNVT_switch(95)
COS Status	cos_status	R	BV	823	Discrete Input	5	BD	6	nvoCosStatus	SNVT_switch(95)
CWV Action	cwv_action	R/W	BV	640	Coil	5	BD	72	nviCwvAction	SNVT_switch(95)
CWV Percentage	cwv_pct	R	AV	288	Input Register (Float)	69	ADF	76	nvoCwvPct	SNVT_lev_percent(81)
Dehumid. #1 Enable	dh1_en	R	BV	565	Discrete Input	19	BD	23	nvoDh1En	SNVT_switch(95)
Dehumid. #2 Enable	dh2_en	R	BV	566	Discrete Input	14	BD	16	nvoDh2En	SNVT_switch(95)
DH LDB C1 Dehum.	dh1_ldb	R/W	AV	340	Holding Register (Float)	113	ADF	109	nviDh1Ldb	SNVT_lev_percent(81)
DH LDB C2 Dehum.	dh2_ldb	R/W	AV	348	Holding Register (Float)	115	ADF	124	nviDh2Ldb	SNVT_lev_percent(81)
DH Mod. SP	dh_mod_sp	R/W	AV	346	Holding Register (Float)	97	ADF	88	nviDhModSp	SNVT_temp_p(105)
DH Mode Low Limit	dh_llim	R/W	AV	344	Holding Register (Float)	101	ADF	90	nviDhLlim	SNVT_temp_p(105)
DH Mode ZAT UDB	dh_zat_udb	R/W	AV	343	Holding Register (Float)	137	ADF	125	nviDhZatUdb	SNVT_temp_p(105)
DH SAT SP Occ	dh_sat_sp_o	R/W	AV	341	Holding Register (Float)	43	ADF	23	nviDhSatSpO	SNVT_temp_p(105)
DH SAT SP Unocc	dh_sat_sp_u	R/W	AV	342	Holding Register (Float)	45	ADF	24	nviDhSatSpU	SNVT_temp_p(105)
DH SP Occ	dh_sp_o	R/W	AV	337	Holding Register (Float)	39	ADF	21	nviDhSpO	SNVT_temp_p(105)
DH SP Unocc	dh_sp_u	R/W	AV	338	Holding Register (Float)	41	ADF	22	nviDhSpU	SNVT_lev_percent(81)
DH UDB C1 Dehum.	dh1_udb	R/W	AV	339	Holding Register (Float)	139	ADF	126	nviDh1Udb	SNVT_lev_percent(81)
DH UDB C2 Dehum.	dh2_udb	R/W	AV	347	Holding Register (Float)	152	ADF	127	nviDh2Udb	SNVT_lev_percent(81)
DH1 Sensor Status	dh1_stat	R	AV	345	Input Register (Float)	31	ADF	12	nvoDh1Stat	SNVT_temp_p(105)
DH2 Sensor Status	dh2_sens_stat	R	AV	349	Input Register (Float)	97	ADF	14	nvoDh2SensStat	SNVT_count_inc(9)
DIG1 Minimum Output	dig1_min	R/W	AV	647	Holding Register (Float)	21	ADF	15	nviDig1Min	SNVT_lev_percent(81)

Table 19 — Revision G Mapping Points (cont)

BACnet					MODBUS		N2		LONWORKS	
POINT NAME	OBJECT NAME	READ/ WRITE	OBJECT		REGISTER		TYPE	ADDRESS	NV NAME	SNVT
			TYPE	ID	TYPE	NUMBER				
Digital Compressor #1 Percent	dig_c1_pct	R	AV	6401	Input Register (Float)	77	ADF	87	nvoDigC1Pct	SNVT_lev_percent(81)
Digital Compressor #2 Percent	dig_c2_pct	R	AV	6501	Input Register (Float)	49	ADF	61	nvoDigC2Pct	SNVT_lev_percent(81)
DR1 Status	dr1_stat	R	BV	256	Discrete Input	113	BD	123	nvoDr1Stat	SNVT_switch(95)
DR2 Status	dr2_stat	R	BV	257	Discrete Input	114	BD	124	nvoDr2Stat	SNVT_switch(95)
DX LAT #2 Status	dx_lat2_stat	R	AV	245	Input Register (Float)	87	ADF	115	nvoDxLat2Stat	SNVT_temp_p(105)
DX LAT AVE Status	dx_lat_ave_stat	R	AV	244	Input Register (Float)	105	ADF	128	nvoDxLatAveStat	SNVT_temp_p(105)
DX LAT Status	dx_lat_stat	R	AV	243	Input Register (Float)	13	ADF	34	nvoDxLatStat	SNVT_temp_p(105)
DXLAT FAIL	dx_lat_failure	R	BV	843	Discrete Input	28	BD	32	nvoDxLatFailure	SNVT_switch(95)
DXLAT2 FAIL	dx_lat2_failure	R	BV	844	Discrete Input	29	BD	33	nvoDxLat2Failure	SNVT_switch(95)
ECAT FAIL	ecat_failure	R	BV	831	Discrete Input	1	BD	1	nvoEcatFailure	SNVT_switch(95)
ECAT Status	ecat_stat	R	AV	219	Input Register (Float)	59	ADF	71	nvoEcatStat	SNVT_temp_p(105)
ECON NOT	econ_not_fdd	R	BV	962	Discrete Input	103	BD	108	nvoEconNotFdd	SNVT_switch(95)
Econ. MAT SP	econ_mat_sp	R/W	AV	600	Holding Register (Float)	9	ADF	6	nviEconMatSp	SNVT_temp_p(105)
Econ. OAE SP	econ_oae_sp	R/W	AV	549	Holding Register (Float)	83	ADF	80	nviEconOaeSp	SNVT_enthalpy(153)
Econ. OAT Upper SP	econ_oat_usp	R/W	AV	550	Holding Register (Float)	23	ADF	13	nviEconOatUsp	SNVT_temp_p(105)
Econ. Staging DOM	econ_stg_dom	R/W	AV	553	Holding Register (Float)	154	ADF	129	nviEconStgDom	SNVT_count_inc(9)
ECRH FAIL	ecrh_failure	R	BV	832	Discrete Input	2	BD	2	nvoEcrhFailure	SNVT_switch(95)
EC-RH Status	ecrh_stat	R	AV	221	Input Register (Float)	57	ADF	70	nvoEcrhStat	SNVT_lev_percent(81)
ECW ALARM	ecw_alarm	R	BV	952	Discrete Input	102	BD	107	nvoEcwAlarm	SNVT_switch(95)
ECW Command	ecw_cmd	R	BV	247	Discrete Input	70	BD	75	nvoEcwCmd	SNVT_switch(95)
ECW CS Status	ecw_cs_stat	R	BV	222	Discrete Input	50	BD	54	nvoEcwCsStat	SNVT_switch(95)
ECW Defrost ON	ecw_def_on	R	BV	514	Discrete Input	4	BD	5	nvoEcwDefOn	SNVT_switch(95)
ECW Enable	ecw_en	R	BV	513	Discrete Input	3	BD	4	nvoEcwEn	SNVT_switch(95)
ECW HAND	ecw_hand_alarm	R	BV	953	Discrete Input	72	BD	77	nvoEcwHandAlarm	SNVT_switch(95)
ECW VFD Frequency	ecwvfd_freq	R	AV	284	Input Register (Float)	5	ADF	27	nvoEcwvfdFreq	SNVT_freq_f(75)
EF ALARM	ef_alarm	R	BV	860	Discrete Input	87	BD	92	nvoEfAlarm	SNVT_switch(95)
EF AMS SP	ef_ams_sp	R/W	AV	305	Holding Register (Float)	31	ADF	17	nviEfAmsSp	SNVT_flow(15)
EF DPT SP	ef_dpt_sp	R/W	AV	302	Holding Register (Float)	29	ADF	16	nviEfDptSp	SNVT_press_p(113)
EF HAND	ef_hand_alarm	R	BV	861	Discrete Input	88	BD	93	nvoEfHandAlarm	SNVT_switch(95)
EF Modulation	efmod_pct	R	AV	287	Input Register (Float)	7	ADF	28	nvoEfmodPct	SNVT_lev_percent(81)
EF OA AMS Status	ef_oa_ams_stat	R	AV	259	Input Register (Float)	55	ADF	69	nvoEfOaAmsStat	SNVT_flow(15)
EF PID Output Override	ef_pid_ovrd	R/W	AV	639	Holding Register (Float)	144	ADF	118	nviEfPidOvrd	SNVT_lev_percent(81)
EF PID Output Override Lock	ef_pid_ovrd_lock	R/W	BV	631	Coil	14	BD	130	nviEfPidOvrdLock	SNVT_switch(95)
EF-APS Status	ef_aps_stat	R	BV	221	Discrete Input	63	BD	67	nvoEfApsStat	SNVT_switch(95)
EM SHTDN	em_shtdn_alarm	R	BV	895	Discrete Input	18	BD	22	nvoEmShtdnAlarm	SNVT_switch(95)
Em. Htg. Enable	ehtg_en	R	BV	579	Discrete Input	11	BD	12	nvoEhtgEn	SNVT_switch(95)
Emerg. Shutdown Enable	emsd_en	R/W	BV	821	Coil	1	BD	3	nviEmsdEn	SNVT_switch(95)
Emergency Shutdown Status	emsd_status	R	BV	822	Discrete Input	16	BD	20	nvoEmsdStatus	SNVT_switch(95)
EMR/EMSD Status	emrsd_stat	R	BV	234	Discrete Input	60	BD	64	nvoEmrsdStat	SNVT_switch(95)
Enable BAS Mon OAT/OARH	en_bas_mon_oa	R/W	BV	1100	Coil	2	BD	13	nviEnBasMonOa	SNVT_switch(95)
Enable BAS Monitor Schedule	en_bas_mon	R/W	BV	106	Coil	9	BD	115	nviEnBasMon	SNVT_switch(95)
Enable FDD Alarms	fdd_alarm_en	R/W	BV	960	Coil	17	BD	133	nviFddAlarmEn	SNVT_switch(95)
Entering Coil Air Dew Point	eca_dewpoint	R	AV	262	Input Register (Float)	9	ADF	29	nvoEcaDewpoint	SNVT_temp_p(105)
Entering coil Air Enthalpy	ec_enthalpy	R	AV	263	Input Register (Float)	11	ADF	30	nvoEcEnthalpy	SNVT_enthalpy(153)
ET ZAT	et_zat	R/W	AV	1902	Holding Register (Float)	156	ADF	130	nviEtZat	SNVT_count_inc(9)
ET ZRH	et_zrh	R/W	AV	1904	Holding Register (Float)	158	ADF	131	nviEtZrh	SNVT_temp_p(105)
EXCESS OA	excess_oa_fdd	R	BV	964	Discrete Input	104	BD	109	nvoExcessOaFdd	SNVT_switch(95)
Field BAS Comm. Status	bas_comm_status	R/W	BV	110	Coil	8	BD	114	nviBasCommStatus	SNVT_switch(95)
FP1 ALARM	fp1_alarm	R	BV	871	Discrete Input	90	BD	95	nvoFp1Alarm	SNVT_switch(95)
FP1 STOP	fp1_stop_alarm	R	BV	872	Discrete Input	6	BD	7	nvoFp1StopAlarm	SNVT_switch(95)
FP2 ALARM	fp2_alarm	R	BV	885	Discrete Input	37	BD	41	nvoFp2Alarm	SNVT_switch(95)
FP2 STOP	fp2_stop_alarm	R	BV	886	Discrete Input	35	BD	39	nvoFp2StopAlarm	SNVT_switch(95)
Freeze Protection LSP	fp_lsp	R/W	AV	323	Holding Register (Float)	49	ADF	31	nviFpLsp	SNVT_temp_p(105)
Freeze Protection MSP	fp_msp	R/W	AV	322	Holding Register (Float)	51	ADF	32	nviFpMsp	SNVT_temp_p(105)
Freeze Protection USP	fp_usp	R/W	AV	321	Holding Register (Float)	53	ADF	33	nviFpUsp	SNVT_temp_p(105)
FRZ Status	frz_stat	R	BV	231	Discrete Input	65	BD	69	nvoFrzStat	SNVT_switch(95)
FZT ALARM	fzt_alarm	R	BV	830	Discrete Input	83	BD	88	nvoFztAlarm	SNVT_switch(95)
Heat Mod. Minimum Output	htg_mod_min	R/W	AV	677	Holding Register (Float)	25	ADF	18	nviHtgModMin	SNVT_lev_percent(81)
Heat Modulation	htg_mod	R	AV	286	Input Register (Float)	51	ADF	62	nvoHtgMod	SNVT_lev_percent(81)
Heat PID Output Override	htg_pid_ovrd	R/W	AV	678	Holding Register (Float)	107	ADF	93	nviHtgPidOvrd	SNVT_lev_percent(81)
Heat PID Output Override Lock	htg_pid_ovrd_lock	R/W	BV	671	Coil	6	BD	111	nviHtgPidOvrdLoc	SNVT_switch(95)
Heat Pump #1 Enable	hp1_en	R	BV	571	Discrete Input	20	BD	24	nvoHp1En	SNVT_switch(95)
Heat Pump #2 Enable	hp2_en	R	BV	572	Discrete Input	21	BD	25	nvoHp2En	SNVT_switch(95)
Heating Supports Reheat	htg_rh_en	R/W	BV	563	Coil	18	BD	134	nviHtgRhEn	SNVT_switch(95)
HGRH Mod. Minimum Output	hgrh_mod_min	R/W	AV	668	Holding Register (Float)	27	ADF	44	nviHgrhModMin	SNVT_lev_percent(81)
HGRH Modulation	hgrh_mod	R	AV	285	Input Register (Float)	95	ADF	123	nvoHgrhMod	SNVT_lev_percent(81)
HGRH PID Output Override	hgrh_pid_ovrd	R/W	AV	669	Holding Register (Float)	15	ADF	9	nviHgrhPidOvrd	SNVT_lev_percent(81)
HGRH PID Output Override Lock	hgrh_pid_ovrd_lock	R/W	BV	661	Coil	11	BD	127	nviHgrhPidOvrdLo	SNVT_switch(95)
HIGH CO2	high_co2_alarm	R	BV	826	Discrete Input	17	BD	21	nvoHighCo2Alarm	SNVT_switch(95)
High Supply DPT SP	high_sfdpt_sp	R/W	AV	804	Holding Register (Float)	73	ADF	63	nviHighSfdpt	SNVT_press_p(113)
HPS #1 Status	hps1_stat	R	BV	226	Discrete Input	54	BD	58	nvoHps1Stat	SNVT_switch(95)
HPS #2 Status	hps2_stat	R	BV	229	Discrete Input	57	BD	61	nvoHps2Stat	SNVT_switch(95)
HPS1 ALARM	hps1_alarm	R	BV	867	Discrete Input	93	BD	98	nvoHps1Alarm	SNVT_switch(95)
HPS1 STOP	hps1_stop_alarm	R	BV	868	Discrete Input	94	BD	99	nvoHps1StopAlarm	SNVT_switch(95)

Table 19 — Revision G Mapping Points (cont)

BACnet					MODBUS		N2		LONWORKS	
POINT NAME	OBJECT NAME	READ/ WRITE	OBJECT		REGISTER		TYPE	ADDRESS	NV NAME	SNVT
			TYPE	ID	TYPE	NUMBER				
HPS2 ALARM	hps2_alarm	R	BV	881	Discrete Input	97	BD	102	nvoHps2Alarm	SNVT_switch(95)
HPS2 STOP	hps2_stop_alarm	R	BV	882	Discrete Input	75	BD	80	nvoHps2StopAlarm	SNVT_switch(95)
HSAT ALARM	hsat_alarm	R	BV	892	Discrete Input	98	BD	103	nvoHsatAlarm	SNVT_switch(95)
HSDP ALARM	hsdp_alarm	R	BV	858	Discrete Input	32	BD	36	nvoHsdpAlarm	SNVT_switch(95)
HSDP STOP	hsdp_stop_alarm	R	BV	859	Discrete Input	33	BD	37	nvoHsdpStopAlarm	SNVT_switch(95)
HT FAIL	heat_failure	R	BV	891	Discrete Input	40	BD	44	nvoHeatFailure	SNVT_switch(95)
Htg Enable LDB	htg_en_ldb	R/W	AV	353	Holding Register (Float)	160	ADF	132	nviHtgEnLdb	SNVT_temp_p(105)
Htg Enable SP	htg_en_sp	R/W	AV	351	Holding Register (Float)	19	ADF	11	nviHtgEnSp	SNVT_temp_p(105)
Htg Enable UDB	htg_en_udb	R/W	AV	352	Holding Register (Float)	162	ADF	133	nviHtgEnUdb	SNVT_temp_p(105)
Htg Mode High Limit Setpoint	htg_hlim	R/W	AV	360	Holding Register (Float)	17	ADF	10	nviHtgHlim	SNVT_temp_p(105)
Htg SAT LDB	htg_sat_ldb	R/W	AV	357	Holding Register (Float)	164	ADF	134	nviHtgSatLdb	SNVT_temp_p(105)
Htg SAT SP Occ	htg_sat_sp_o	R/W	AV	354	Holding Register (Float)	11	ADF	7	nviHtgSatSpO	SNVT_temp_p(105)
Htg SAT SP Unocc	htg_sat_sp_u	R/W	AV	355	Holding Register (Float)	13	ADF	8	nviHtgSatSpU	SNVT_temp_p(105)
Htg SAT UDB	htg_sat_udb	R/W	AV	356	Holding Register (Float)	166	ADF	135	nviHtgSatUdb	SNVT_temp_p(105)
Htg Sensor	htg_sensor	R	AV	6701	Input Register (Float)	103	ADF	86	nvoHtgSensor	SNVT_count_inc(9)
Htg ZAT LDB	htg_zat_ldb	R/W	AV	359	Holding Register (Float)	168	ADF	136	nviHtgZatLdb	SNVT_temp_p(105)
Htg ZAT UDB	htg_zat_udb	R/W	AV	358	Holding Register (Float)	170	ADF	137	nviHtgZatUdb	SNVT_temp_p(105)
IN0/11_ZN/EFdpt Status	zn_ef_dpt11_stat	R	AV	253	Input Register (Float)	53	ADF	68	nvoMulti11Stat	SNVT_press_p(113)
Local OAT/OARH Sensor Enabled	local_oa_sens_en	R/W	BV	1115	Coil	21	BD	138	nviLocalOaSensEn	SNVT_switch(95)
Low SAT Delay	low_sat_delay	R/W	AV	809	Holding Register (Float)	172	ADF	138	nviLowSatDelay	SNVT_count_inc(9)
LPS #1 Status	lps1_stat	R	BV	225	Discrete Input	53	BD	57	nvoLps1Stat	SNVT_switch(95)
LPS #2 Status	lps2_stat	R	BV	228	Discrete Input	56	BD	60	nvoLps2Stat	SNVT_switch(95)
LPS1 ALARM	lps1_alarm	R	BV	869	Discrete Input	89	BD	94	nvoLps1Alarm	SNVT_switch(95)
LPS1 STOP	lps1_stop_alarm	R	BV	870	Discrete Input	76	BD	81	nvoLps1StopAlarm	SNVT_switch(95)
LPS2 ALARM	lps2_alarm	R	BV	883	Discrete Input	34	BD	38	nvoLps2Alarm	SNVT_switch(95)
LPS2 STOP	lps2_stop_alarm	R	BV	884	Discrete Input	95	BD	100	nvoLps2StopAlarm	SNVT_switch(95)
LSAT ALARM	low_sat_alarm	R	BV	898	Discrete Input	45	BD	49	nvoLowSatAlarm	SNVT_switch(95)
MARH FAIL	marh_failure	R	BV	828	Discrete Input	77	BD	82	nvoMarhFailure	SNVT_switch(95)
MA-RH Status	marh_stat	R	AV	224	Input Register (Float)	61	ADF	72	nvoMarhStat	SNVT_lev_percent(81)
MAT FAIL	mat_failure	R	BV	827	Discrete Input	78	BD	83	nvoMatFailure	SNVT_switch(95)
MAT Low Limit	mat_llim	R/W	AV	242	Holding Register (Float)	174	ADF	139	nviMatLlim	SNVT_temp_p(105)
MAT Status	mat_stat	R	AV	223	Input Register (Float)	91	ADF	117	nvoMatStat	SNVT_temp_p(105)
Misc. Options #1	misc1_opts	R/W	MSV	927	Holding Register (Signed)	186	ADI	3	nviMisc1Opts	SNVT_count_inc(9)
Misc. Options #2	misc2_opts	R/W	MSV	928	Holding Register (Signed)	187	ADI	4	nviMisc2Opts	SNVT_count_inc(9)
Mixed Air Dew Point	ma_dewpoint	R	AV	264	Input Register (Float)	15	ADF	35	nvoMaDewpoint	SNVT_temp_p(105)
Mixed Air Enthalpy	ma_enthalpy	R	AV	265	Input Register (Float)	17	ADF	36	nvoMaEnthalpy	SNVT_enthalpy(153)
Night Setback Mode ON	nsb_on	R	BV	219	Discrete Input	105	BD	110	nvoNsbOn	SNVT_switch(95)
NOT ECON	not_econ_fdd	R	BV	961	Discrete Input	79	BD	84	nvoNotEconFdd	SNVT_switch(95)
OA AMS SP	oa_ams_sp	R/W	AV	306	Holding Register (Float)	35	ADF	19	nviOaAmsSp	SNVT_flow(15)
OA Damper Enable	oada_en	R	BV	242	Discrete Input	13	BD	15	nvoOadaEn	SNVT_switch(95)
OADA ALARM	oada_alarm	R	BV	950	Discrete Input	80	BD	85	nvoOadaAlarm	SNVT_switch(95)
OADA HAND	oada_hand_alarm	R	BV	951	Discrete Input	81	BD	86	nvoOadaHandAlarm	SNVT_switch(95)
OADA Minimum Position Cmd	oada_min_pos_cmd	R/W	AV	607	Holding Register (Float)	55	ADF	37	nviOadaMinPosCmd	SNVT_lev_percent(81)
OADA PID Output Override	oada_pid_ovrd	R/W	AV	609	Holding Register (Float)	146	ADF	119	nviOadaPidOvrd	SNVT_lev_percent(81)
OADA PID Output Override Lock	oada_pid_ovrd_lock	R/W	BV	601	Coil	15	BD	131	nviOadaPidOvrdLo	SNVT_switch(95)
OADA Position	oada_pos	R	AV	204	Input Register (Float)	93	ADF	121	nvoOadaPos	SNVT_lev_percent(81)
OADA Status	oada_stat	R	BV	220	Discrete Input	51	BD	55	nvoOadaStat	SNVT_switch(95)
OARH FAIL	oarh_failure	R	BV	836	Discrete Input	23	BD	27	nvoOarhFailure	SNVT_switch(95)
OARH from BAS	bas_oarh	R/W	AV	1106	Holding Register (Float)	89	ADF	84	nviBasOarh	SNVT_count_inc(9)
OA-RH Status	oarh_stat	R	AV	229	Input Register (Float)	85	ADF	114	nvoOarhStat	SNVT_lev_percent(81)
OAT FAIL	oat_failure	R	BV	835	Discrete Input	22	BD	26	nvoOatFailure	SNVT_switch(95)
OAT from BAS	bas_oat	R/W	AV	1104	Holding Register (Float)	87	ADF	83	nviBasOat	SNVT_temp_p(105)
OAT Status	oat_stat	R	AV	227	Input Register (Float)	83	ADF	113	nvoOatStat	SNVT_temp_p(105)
Occupancy Control Options	occ_ctrl_opts	R/W	MSV	101	Holding Register (Float)	127	ADI	1	nviOccCtrlOpts	SNVT_count_inc(9)
Occupancy Status	occ_status	R	BV	105	Discrete Input	41	BD	45	nvoOccStatus	SNVT_switch(95)
OD Command	od_cmd	R	BV	1120	Discrete Input	42	BD	46	nvoOdCmd	SNVT_switch(95)
Operating Condition	op_cond	R	AV	111	Input Register (Float)	71	ADF	77	nvoOpCond	SNVT_count_inc(9)
Operating Mode	op_mode	R	AV	112	Input Register (Float)	81	ADF	111	nvoOpMode	SNVT_count_inc(9)
Optimal Start On	opt_start_on	R	BV	902	Discrete Input	108	BD	117	nvoOptStartOn	SNVT_switch(95)
Outside Air Dew Point	oa_dewpoint	R	AV	266	Input Register (Float)	19	ADF	38	nvoOaDewpoint	SNVT_temp_p(105)
Outside Air Enthalpy	oa_enthalpy	R	AV	267	Input Register (Float)	21	ADF	39	nvoOaEnthalpy	SNVT_enthalpy(153)
Purge Cycle	purge_cycle	R/W	AV	547	Holding Register (Float)	176	ADF	140	nviPurgeCycle	SNVT_count_inc(9)
RADA NOT	rada_not_mod_fdd	R	BV	963	Discrete Input	69	BD	74	nvoRadaNotModFdd	SNVT_switch(95)
RADA Position	rada_pos	R	AV	601	Input Register (Float)	1	ADF	5	nvoRadaPos	SNVT_lev_percent(81)
RADA Status	rada_stat	R	AV	283	Input Register (Float)	75	ADF	79	nvoRadaStat	SNVT_lev_percent(81)
RARH FAIL	rarh_failure	R	BV	834	Discrete Input	43	BD	47	nvoRarhFailure	SNVT_switch(95)
RA-RH Status	rarh_stat	R	AV	226	Input Register (Float)	63	ADF	73	nvoRarhStat	SNVT_lev_percent(81)
RAT FAIL	rat_failure	R	BV	833	Discrete Input	24	BD	28	nvoRatFailure	SNVT_switch(95)
RAT Status	rat_stat	R	AV	225	Input Register (Float)	47	ADF	52	nvoRatStat	SNVT_temp_p(105)
Reheat SAT LDB	rh_sat_ldb	R/W	AV	336	Holding Register (Float)	178	ADF	141	nviRhSatLdb	SNVT_temp_p(105)
Reheat SAT UDB	rh_sat_udb	R/W	AV	335	Holding Register (Float)	180	ADF	142	nviRhSatUdb	SNVT_temp_p(105)
Return Air Damper Command	rada_cmd	R	BV	503	Discrete Input	12	BD	14	nvoRadaCmd	SNVT_switch(95)
Return Air Dew Point	ra_dewpoint	R	AV	268	Input Register (Float)	23	ADF	40	nvoRaDewpoint	SNVT_temp_p(105)
Return Air Enthalpy	ra_enthalpy	R	AV	269	Input Register (Float)	79	ADF	103	nvoRaEnthalpy	SNVT_enthalpy(153)

Table 19 — Revision G Mapping Points (cont)

BACnet					MODBUS		N2		LONWORKS	
POINT NAME	OBJECT NAME	READ/ WRITE	OBJECT		REGISTER		TYPE	ADDRESS	NV NAME	SNVT
			TYPE	ID	TYPE	NUMBER				
RH CMD	rh_cmd	R	BV	564	Discrete Input	71	BD	76	nvoRhCmd	SNVT_switch(95)
RH in Cooling	rh_clg_mode	R/W	BV	561	Coil	19	BD	135	nviRhClgMode	SNVT_switch(95)
RV CMD	rv_cmd	R	BV	550	Discrete Input	116	BD	126	nvoRvCmd	SNVT_switch(95)
S/S Switch Status	ss_sw_stat	R	BV	236	Discrete Input	112	BD	122	nvoSsSwStat	SNVT_switch(95)
SA-RH FAIL	sarh_failure	R	BV	840	Discrete Input	26	BD	30	nvoSarhFailure	SNVT_switch(95)
SA-RH Status	sarh_stat	R	AV	237	Input Register (Float)	41	ADF	49	nvoSarhStat	SNVT_lev_percent(81)
SAT FAIL	sat_failure	R	BV	839	Discrete Input	25	BD	29	nvoSatFailure	SNVT_switch(95)
SAT Heat Fail SP	sat_heat_fail_sp	R/W	AV	361	Holding Register (Float)	33	ADF	53	nviSatHeatFailSp	SNVT_temp_p(105)
SAT High Limit SP	sat_high_limit_sp	R/W	AV	362	Holding Register (Float)	5	ADF	3	nviSatHighLimitS	SNVT_temp_p(105)
SAT Low Limit SP	sat_low_limit_sp	R/W	AV	808	Holding Register (Float)	37	ADF	20	nviSatLowLimit	SNVT_temp_p(105)
SAT Maximum Reset	sat_max_reset	R/W	AV	326	Holding Register (Float)	75	ADF	64	nviSatMaxReset	SNVT_temp_p(105)
SAT Ratio	sat_ratio	R/W	AV	325	Holding Register (Float)	77	ADF	65	nviSatRatio	SNVT_temp_p(105)
SAT Status	sat_stat	R	AV	235	Input Register (Float)	43	ADF	50	nvoSatStat	SNVT_temp_p(105)
SC LDB	sc_ldb	R/W	AV	556	Holding Register (Float)	182	ADF	143	nviScLdb	SNVT_temp_p(105)
SC ZAT DISA	sc_zat_disa	R/W	BV	1110	Coil	3	BD	17	nviScZatDisa	SNVT_switch(95)
SD ALARM	sd_alarm	R	BV	896	Discrete Input	100	BD	105	nvoSdAlarm	SNVT_switch(95)
SD Status	sd_stat	R	BV	235	Discrete Input	61	BD	65	nvoSdStat	SNVT_switch(95)
SF ALARM	sf_alarm	R	BV	855	Discrete Input	110	BD	119	nvoSfAlarm	SNVT_switch(95)
SF AMS SP	sf_ams_sp	R/W	AV	304	Holding Register (Float)	131	ADF	105	nviSfAmsSp	SNVT_flow(15)
SF AMS Status	sf_ams_stat	R	AV	261	Input Register (Float)	45	ADF	51	nvoSfAmsStat	SNVT_flow(15)
SF Command	sf_cmd	R	BV	241	Discrete Input	44	BD	48	nvoSfCmd	SNVT_switch(95)
SF DPT SP	sf_dpt_sp	R/W	AV	301	Holding Register (Float)	133	ADF	106	nviSfDptSp	SNVT_press_p(113)
SF DPT Status	sf_dpt_stat	R	AV	255	Input Register (Float)	89	ADF	116	nvoSfDptStat	SNVT_press_p(113)
SF HAND	sf_hand_alarm	R	BV	856	Discrete Input	111	BD	120	nvoSfHandAlarm	SNVT_switch(95)
SF Mod. CLG Min. Output	sf_clg_min_out	R/W	AV	630	Holding Register (Float)	57	ADF	67	nviSfClgMinOut	SNVT_lev_percent(81)
SF Mod. HP Min. Output	sf_hp_min_out	R/W	AV	629	Holding Register (Float)	81	ADF	81	nviSfHpMinOut	SNVT_lev_percent(81)
SF Modulation	sfmod_pct	R	AV	282	Input Register (Float)	25	ADF	41	nvoSfmodPct	SNVT_lev_percent(81)
SF Operation	sf_oper	R/W	MSV	931	Holding Register (Float)	85	ADI	2	nviSfOper	SNVT_count_inc(9)
SF PID Output Override	sf_pid_ovrd	R/W	AV	628	Holding Register (Float)	148	ADF	120	nviSfPidOvrd	SNVT_lev_percent(81)
SF PID Output Override Lock	sf_pid_ovrd_lock	R/W	BV	621	Coil	16	BD	132	nviSfPidOvrdLock	SNVT_switch(95)
SF-APS Status	sf_aps_stat	R	BV	223	Discrete Input	62	BD	66	nvoSfApsStat	SNVT_switch(95)
SFMinimum Output	sf_min_out	R	AV	627	Input Register (Float)	101	ADF	85	nvoSfMinOut	SNVT_count_inc(9)
SLT #1 Status	slt_stat	R	AV	250	Input Register (Float)	65	ADF	74	nvoSltStat	SNVT_temp_p(105)
SLT #2 Status	slt2_stat	R	AV	251	Input Register (Float)	67	ADF	75	nvoSlt2Stat	SNVT_temp_p(105)
SLT FAIL	slt_failure	R	BV	845	Discrete Input	30	BD	34	nvoSltFailure	SNVT_switch(95)
SLT2 FAIL	slt2_failure	R	BV	846	Discrete Input	82	BD	87	nvoSlt2Failure	SNVT_switch(95)
Sub-Cooling Command	sc_cmd	R	BV	248	Discrete Input	73	BD	78	nvoScCmd	SNVT_switch(95)
Sub-Cooling UDB	sc_udb	R/W	AV	555	Holding Register (Float)	184	ADF	144	nviScUdb	SNVT_temp_p(105)
Supply Air Dew Point	sa_dewpoint	R	AV	270	Input Register (Float)	27	ADF	42	nvoSaDewpoint	SNVT_temp_p(105)
Supply Air Enthalpy	sa_enthalpy	R	AV	271	Input Register (Float)	29	ADF	43	nvoSaEnthalpy	SNVT_enthalpy(153)
Unit Stop	unit_stop	R	BV	819	Discrete Input	15	BD	19	nvoUnitStop	SNVT_switch(95)
W1 Command	w1_cmd	R	BV	240	Discrete Input	115	BD	125	nvoW1Cmd	SNVT_switch(95)
W1 Enable	w1_en	R	BV	578	Discrete Input	109	BD	118	nvoW1En	SNVT_switch(95)
W2 Command	w2_cmd	R	BV	239	Discrete Input	74	BD	79	nvoW2Cmd	SNVT_switch(95)
WExAT FAIL	wexat_failure	R	BV	837	Discrete Input	27	BD	31	nvoWexatFailure	SNVT_switch(95)
WExAT Status	wexat_stat	R	AV	238	Input Register (Float)	73	ADF	78	nvoWexatStat	SNVT_temp_p(105)
WExRH FAIL	wexrh_failure	R	BV	838	Discrete Input	117	BD	136	nvoWexrhFailure	SNVT_switch(95)
WEx-RH Status	wexrh_stat	R	AV	239	Input Register (Float)	99	ADF	82	nvoWexrhStat	SNVT_lev_percent(81)
WFS ALARM	wfs_alarm	R	BV	829	Discrete Input	31	BD	35	nvoWfsAlarm	SNVT_switch(95)
WFS Status	wfs_stat	R	BV	230	Discrete Input	64	BD	68	nvoWfsStat	SNVT_switch(95)
ZAT FAIL	zat_failure	R	BV	852	Discrete Input	84	BD	89	nvoZatFailure	SNVT_switch(95)
ZAT From BAS	zat_bas	R/W	AV	208	Holding Register (Float)	142	ADF	112	nviZatBas	SNVT_temp_p(105)
ZAT Ratio	zat_ratio	R/W	AV	324	Holding Register (Float)	79	ADF	66	nviZatRatio	SNVT_temp_p(105)
ZAT Status	zat_stat	R	AV	209	Input Register (Float)	35	ADF	46	nvoZatStat	SNVT_temp_p(105)
ZAT/SAT Set Point Reset Enable	rs_sat_en	R/W	BV	301	Coil	12	BD	128	nviRsSatEn	SNVT_switch(95)
ZN DPT SP	zn_dpt_sp	R/W	AV	303	Holding Register (Float)	1	ADF	1	nviZnDptSp	SNVT_press_p(113)
Zone Air Dew Point	za_dewpoint	R	AV	274	Input Register (Float)	37	ADF	47	nvoZaDewpoint	SNVT_temp_p(105)
Zone Air Enthalpy	za_enthalpy	R	AV	275	Input Register (Float)	39	ADF	48	nvoZaEnthalpy	SNVT_enthalpy(153)
Zone Sensor Options	zn_opts	R/W	MSV	920	Holding Register (Signed)	188	ADI	5	nviZnOpts	SNVT_count_inc(9)
Zone Set Points	clg_zat_sp_o	R/W	AV	200	Holding Register (Float)	119	ADF	99	nviClgZatSpO	SNVT_temp_p(105)
Zone Set Points	htg_zat_sp_o	R/W	AV	201	Holding Register (Float)	121	ADF	100	nviHtgZatSpO	SNVT_temp_p(105)
Zone Set Points	clg_zat_sp_u	R/W	AV	202	Holding Register (Float)	123	ADF	101	nviClgZatSpU	SNVT_temp_p(105)
Zone Set Points	htg_zat_sp_u	R/W	AV	203	Holding Register (Float)	125	ADF	102	nviHtgZatSpU	SNVT_temp_p(105)
ZRH FAIL	zrh_failure	R	BV	853	Discrete Input	85	BD	90	nvoZrhFailure	SNVT_switch(95)
Z-RH From BAS	zrh_bas	R/W	AV	211	Holding Register (Float)	47	ADF	25	nviZrhBas	SNVT_lev_percent(81)
Z-RH Status	zrh_stat	R	AV	212	Input Register (Float)	33	ADF	45	nvoZrhStat	SNVT_lev_percent(81)

PRE-START-UP CHECKLIST

NOTE: To avoid injury to personnel and damage to equipment or property when completing the procedures listed in this start-up checklist, use good judgment, follow safe practices, and adhere to the safety considerations/information as outlined in preceding sections of this Installation, Start-Up and Service document.

NOTE: Prior to performing start-up, the crankcase heaters must operate for 24 hours. Cooling start-up is only recommended when ambient air temperatures are above 55°F.

PROJECT INFORMATION

Job Name _____ Installing Contractor _____

Address _____ Carrier Office _____

City _____ State _____ Zip _____

Model Number _____ Serial Number _____

PRESTART-UP CHECKLIST

☐ Has a control interface (Equipment Touch) been installed? If no, make sure the start-up technician is aware of this and has either an Equipment Touch or the necessary components to use the Equipment Touch App.

☐ The unit is free of damage. If damage exists, contact your local Carrier representative.

☐ The unit power feed is installed. Voltage and phasing have been verified to be correct.

☐ The power feed meets the MCA requirements as indicated on the unit label.

☐ The power feed safeties meet the MOCP requirements as indicated on the unit label.

☐ All electrical connections and terminals are tight, all terminals are free from corrosion.

☐ All packing materials have been removed from the unit.

☐ All required unit accessories have been installed.

☐ The outdoor intake hood and screen have been installed.

☐ The unit leaving air temperature sensor (LAT) has been installed.

☐ The unit has been leak checked and has been found to be free of leaks.

☐ The compressor oil level is acceptable.

☐ The condenser fan(s) rotation is not inhibited.

☐ The gas piping has been checked for leaks and has been found to be leak free (if equipped).

☐ Gas shutoff valves and gas regulator have been installed and have been verified to operate properly.

☐ The inlet gas pressure and gas quality is sufficient for proper unit operation.

☐ The gas furnace condensate drain has been installed as per the unit instructions.

☐ The hot water or steam piping has been installed and is free from leaks (if equipped).

☐ The hot water/steam control valve has been installed and is operational (if equipped with hydronic heat).

☐ The unit steam trap has been installed (if equipped with steam heat).

☐ The unit filters and ECW filters (if equipped) have been installed and are clean.

☐ The unit is within level tolerances to promote proper condensate drainage.

☐ The condensate drain has been installed as the installation instructions.

☐ All fire dampers, VAV dampers, or auxiliary units required for proper 62 Series unit operation are functional.

☐ The supply and exhaust (if equipped) fan rotation is not inhibited.

☐ The crank case heaters have been verified to be operational and will operate 24 hours prior to start-up.

Please note if the following sensors have been installed:

☐ ZAT (space temperature)

☐ Z-RH (zone relative humidity)

☐ SF-DPT (supply fan static pressure)

☐ EF-DPT (exhaust fan static pressure)

Unit Supply Voltage L1-L2 _____ L2-L3 _____ L3-L1 _____

START-UP CHECKLIST

NOTE: Prior to performing start-up, the crank case heaters must operate for 24 hours. A BACview device is required to perform unit start-up.

PROJECT INFORMATION

Job Name _____
Address _____
City _____ State _____ Zip _____

Model Number _____

Installing Contractor _____
Carrier Office _____
Serial Number _____
Software _____
Software Date _____

CHECKLIST

- ☐ Verify the unit is free of damage. If damage exists, contact your local Carrier representative.
- ☐ Check the unit power feed for voltage and phasing.
- ☐ Check unit power wiring, verify correct fuses/breakers are installed.
- ☐ Verify all electrical connections and terminals are tight.
- ☐ Verify the crankcase heater(s) have been operating for 24 hours.
- ☐ Verify all packing materials have been removed from the unit.
- ☐ Verify all unit accessories have been installed.
- ☐ Verify outdoor intake hood and screen has been installed.
- ☐ Verify control cabinet ventilation holes are free from obstruction.
- ☐ Verify exhaust/relief hood and screen (if equipped) has been installed.
- ☐ Verify barometric relief damper (equipped) has been installed and moves freely.
- ☐ Verify the unit service clearances are in accordance with manufacturers recommendation.
- ☐ Verify if the supply and exhaust duct pressure transducers (if equipped) have been installed.
- ☐ Verify leaving air/supply air temperature sensor has been installed.
- ☐ Check for refrigerant leaks.
- ☐ Check compressor oil level.
- ☐ Check condenser fan rotation.
- ☐ Check condenser coil for debris.
- ☐ Check gas piping for leaks (for gas heat units, if equipped).
- ☐ Verify gas furnace condensate drain has been installed as per the unit instructions.
- ☐ Check hot water piping (if equipped) for leaks.
- ☐ Verify hot water control valve has been installed and is operational (if equipped with hydronic heat).
- ☐ Verify the unit filters and ERW filters (if equipped) have been installed and are clean.
- ☐ Verify ECW belt is installed at the proper tension.
- ☐ Verify the unit is level within tolerances for proper condensate drainage.
- ☐ Verify condensate drain is installed as per unit instructions.
- ☐ Verify all duct fire dampers or VAV dampers are open.
- ☐ Check fan blower clearance.
- ☐ Verify the controller power switch is on and the battery is installed.
- ☐ Verify control time and data has been set, and schedules are active.
- ☐ Verify control set points are accurate.

NOTE: Cooling start-up is only recommended when ambient air temperatures are above 55°F.

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

UNIT START-UP:

ELECTRICAL

UNIT SUPPLY VOLTAGE	L1-L2 _____	L2-L3 _____	L3-L1 _____
COMPRESSOR 1 AMPS	C1-L2 _____	C1-L2 _____	C1-L3 _____
COMPRESSOR 2 AMPS	C2-L1 _____	C2-L2 _____	C2-L3 _____
SUPPLY FAN AMPS	CV_____	VAV*_____	
EXHAUST FAN AMPS	CV_____	VAV*_____	
ECW MOTOR AMPS	_____	_____	

*VAV fan readings must be taken with a true RMS meter for accurate readings.

TEMPERATURES

COOLING OAT	_____ °F DB	_____ °F WB
COOLING LAT	_____ °F DB	_____ °F WB
HEATING OAT	_____ °F DB	
HEATING LAT	_____ °F DB	

REFRIGERATION SYSTEM

Note: All 62X units are equipped with lead circuit digital compressors and hot gas reheat (HGRH). Additionally, some 62X units are equipped with a liquid subcooling reheat on all circuits and lag circuit digital compressor. When checking refrigeration system performance, HGRH must be disabled, digital compressors must be manually forced to 100% operation, and the liquid subcooling circuit(s) must be active.

SUCTION LINE TEMPERATURE	CIRCUIT NO. 1_____ ° F	CIRCUIT NO. 2 _____ ° F
SUCTION PRESSURE	CIRCUIT NO. 1_____ IN. WG	CIRCUIT NO. 2 _____ IN. WG
SUPERHEAT	CIRCUIT NO. 1_____ ° F	CIRCUIT NO. 2 _____ ° F
LIQUID TEMPERATURE	CIRCUIT NO. 1_____ ° F	CIRCUIT NO. 2_____ ° F
LIQUID PRESSURE	CIRCUIT NO. 1_____ IN. WG	CIRCUIT NO. 2 _____ IN. WG
SUBCOOLING	CIRCUIT NO. 1_____ ° F	CIRCUIT NO. 2 _____ ° F

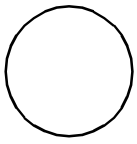
Note: All 62X units are charged at factory environmental conditions. Refrigerant charge may need to be adjusted based on local environmental and application conditions. Adjust charge as needed to achieve 10-12°F of subcooling with HGRH disabled, all compressors operating at 100%, and all subcooling circuits active (if equipped).

HEATING

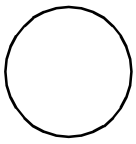
HEATING SOURCE		_____				
INLET PRESSURE		_____	IN. WG			
MANIFOLD PRESSURE	LOW	_____	IN. WG	HIGH	_____	IN. WG
CO_2 IN FLUE GAS	LOW	_____	%	HIGH	_____	%
CO IN FLUE GAS	LOW	_____	PPM	HIGH	_____	PPM
DRAFT FAN PRESSURE	LOW	_____	IN. WG	HIGH	_____	IN. WG
ELECTRIC HEATER AMPS		_____	AMPS			
HOT WATER ENTERING TEMPERATURE		_____	° F			
HOT WATER LEAVING TEMPERATURE		_____	° F			
HOT WATER FLOW RATE		_____	GPM			

COMPRESSOR OIL LEVEL

FILL IN THE CIRCLE TO INDICATE SIGHT GLASS OIL LEVEL.



CIRCUIT 1



CIRCUIT 2

SET POINTS:

CONTROL VARIABLE	ABBREVIATION	DEFAULT SET POINT	UNITS	CURRENT SP	UNITS
Supply Fan Static Pressure	SFDPT STATIC	0.75	in. H2O		in. H2O
Exhaust Fan Static Pressure	EFDPT STATIC	0.020	in. H2O		in. H2O
Cooling Leaving Air Temp	COOLING LAT	70	°F		°F
Cooling Suction Line Temp	COOLING SLT	45	°F		°F
Cooling OAT/ECAT Low Limit	CLG OAT/ECAT	55	°F		°F
Cooling Zone Air Temp	COOLING ZAT	72	°F		°F
Leaving Air Temp Low Limit	LAT LOW LIMIT	40	°F		°F
Leaving Air Temp High Limit	LAT HIGH LIMIT	130	°F		°F
Heating OAT/ECAT	HTG OAT/ECAT	58	°F		°F
Dehumidify OAT/ECAT	DEHUMID OAT/ECAT	60	°F		°F
Heating Leaving Air Temp	HEATING LAT	72	°F		°F
Heating Zone Air Temp	HEATING ZAT	72	°F		°F
Leaving Air Temp Heat Fail	LAT HEAT FAIL	50	°F		°F
RTRHO Enabled	RTRHO ENABLE	NO	YES/NO		YES/NO
Cooling ZAT Set Point	COOLING ZAT	72	°F		°F
RTHO Enabled	RTHO ENABLE	NO	YES/NO		YES/NO
Heating ZAT Set Point	HEATING ZAT	72	°F		°F
Dehumidification Mode Enable	DEHUMID	NO	YES/NO		YES/NO

SCHEDULES:

SCHEDULE NAME	M	T	W	T	F	S	S	START TIME	END TIME
Daily Schedule 1									
Daily Schedule 2									
Daily Schedule 3									
Daily Schedule 4									
Holiday Schedule 1									
Holiday Schedule 2									
Holiday Schedule 3									
Holiday Schedule 4									
Holiday Schedule 5									
Holiday Schedule 6									
Holiday Schedule 7									
Holiday Schedule 8									
Holiday Schedule 9									
Holiday Schedule 10									
Holiday Schedule 11									
Holiday Schedule 12									
Override Schedule 1									
Override Schedule 2									

SERVICE INFORMATION

Final Filter Size _____ Quantity _____

Pre-Filter Size _____ Quantity _____

ECW Belt Part Number _____ Size _____

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE