



EXCEL AIR SYSTEMS



# EVOLUTION SERIES DESIGN GUIDELINES

# SHIPPING

## PACKAGING & GEAR

### PACKAGING

Systems are generally shipped as a complete unit on a single pallet.

Standard pallet sizes and weights are listed in relation to system capacities.

CAPACITY	ORIENTATION	DIMENSIONS	WEIGHT
2-TON	HORIZONTAL	42" x 42" x 38"	400 lb
3-TON	HORIZONTAL	55" x 44" x 45"	545 lb
3-TON	VERTICAL	42" x 48" x 55"	545 lb
4-TON & 5-TON	HORIZONTAL	55" x 44" x 45"	590 lb
4-TON & 5-TON	VERTICAL	42" x 48" x 55"	590 lb

Pallet height can be taller, depending on customized plenums and/or the addition of other add-on components.

In preparation for shipment, each pallet is first securely packaged with vinyl strapping, protective cardboard panels, and plastic shrinkwrap.

All coil faces are pointed inwards to reduce any potential coil damage.

Additional gear is placed separately within a cardboard box on the pallet as well.



### GEAR CHECKLIST

- INDOOR AIR HANDLER
- THERMOSTAT
- OUTDOOR CONDENSER
- ACCESSORIES
- LINESET (5/8" & 3/8")
- INSTRUCTIONS
- CONTROL WIRE

# INSTALLATION

## WARRANTY & PLANNING

### LIMITED WARRANTY

Excel Air Systems provides a 5 year warranty on the compressors of all new systems from the date of sale. For all other components, there is a 1 year parts warranty. Warranty covers parts only, not labor or shipping costs.

System purchase also includes unlimited access to Excel Air Systems' lifetime Technical Support services, active when a valid serial number is provided.



### SITE SELECTION PLANNING

Taking a moment to effectively plan for the layout of the unit will dramatically reduce installation time and effort.

#### FACTORS TO CONSIDER

##### **EASIEST PATH FOR THE LINESET**

Excel Air Systems offers Flexible Linesets as an upgrade to simplify installation in difficult runs. Bends can be customized at customer's request.

##### **SUSPENDING OR BRACKETING THE INDOOR AIR HANDLER**

As there are several possible methods, make sure to place the Air Handler in an easily accessible area for future maintenance and the ability to use a lift.

##### **PREVAILING WINDS**

If mounting the Outdoor Condenser on a rooftop, consult Excel Air Systems for localized wind charts in your area to determine directional mounting, which will prevent system freeze-ups during winter operation. Windwalls can also be fastened to the Condenser for additional protection.

##### **BRACKETING THE OUTDOOR CONDENSER**

The base of the Outdoor Condenser can be mounted to virtually any level surface, such as wall brackets, ties, or concrete.

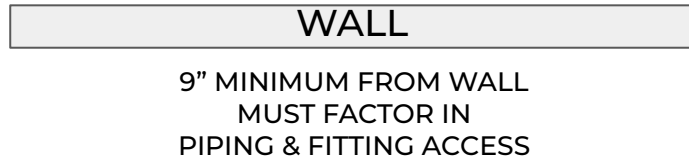
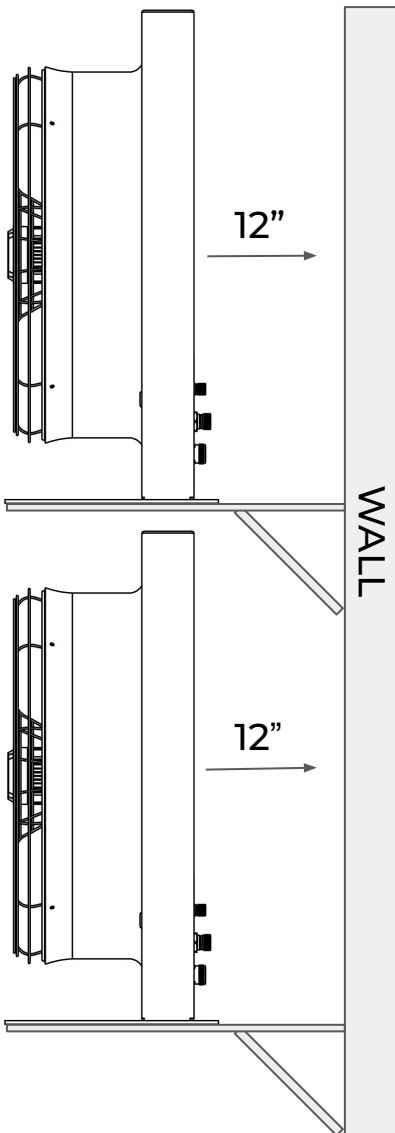
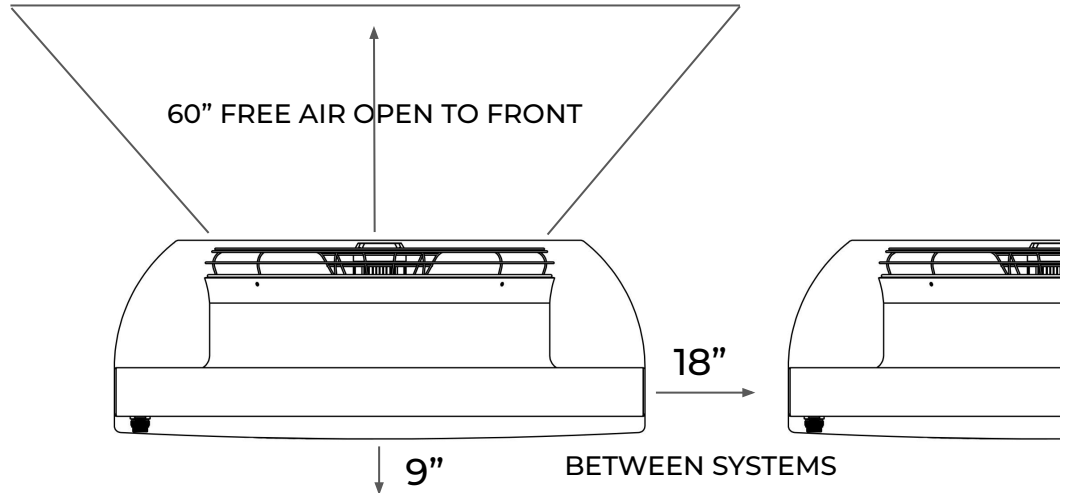
##### **POWER LOCATION**

Only one power drop to the Indoor Air Handler is required, since the Control Wire provides power to the Outdoor Condenser.

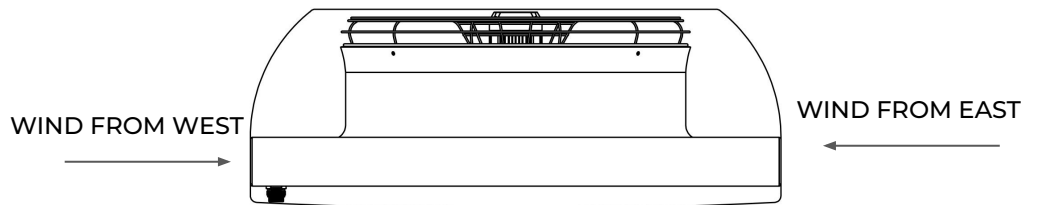
# CLEARANCE

## OUTDOOR CONDENSER

WALL-STACKED CONDENSERS REQUIRE A MINIMUM OF 12" FROM WALL WITH OPEN SIDES.



UNIT SHOULD BE PLACED **PERPENDICULAR** TO THE PREVAILING WIND DIRECTION.



INQUIRE ABOUT WINDSCREEN KIT AND/OR ASSISTANCE IN DETERMINING WIND FOR YOUR AREA.

# CLEARANCE

## INDOOR AIR HANDLER

### FACTORS TO CONSIDER

#### EASY ACCESS

Ensuring that Fittings, Electrical Panel, and Filter are effortlessly accessible.

#### DEEP P-TRAP REQUIREMENTS

To allow for efficiency system drainage, since 3- to 5-Ton systems lie on their right side, with Fittings at the top, and drain at the bottom.

#### L-BRACKETS OR HANGERS

Utilized to hang systems on walls and ceilings.

#### 90° BENDS

Potentially used on Fittings so that Linesets run directly up towards the ceiling.

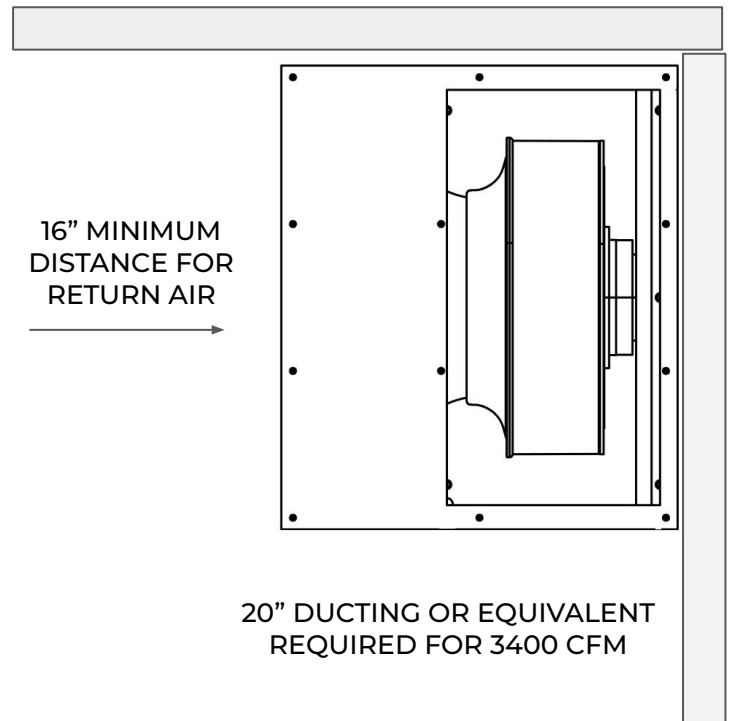
#### SUPPLY AIR CONFIGURATION

Whether Supply Air comes out the top, bottom, side, or back, all systems can be configured to provide it from additional sides. (2-ton systems have the Return Air coming in from the right side and the Supply Air coming out of the left side.)

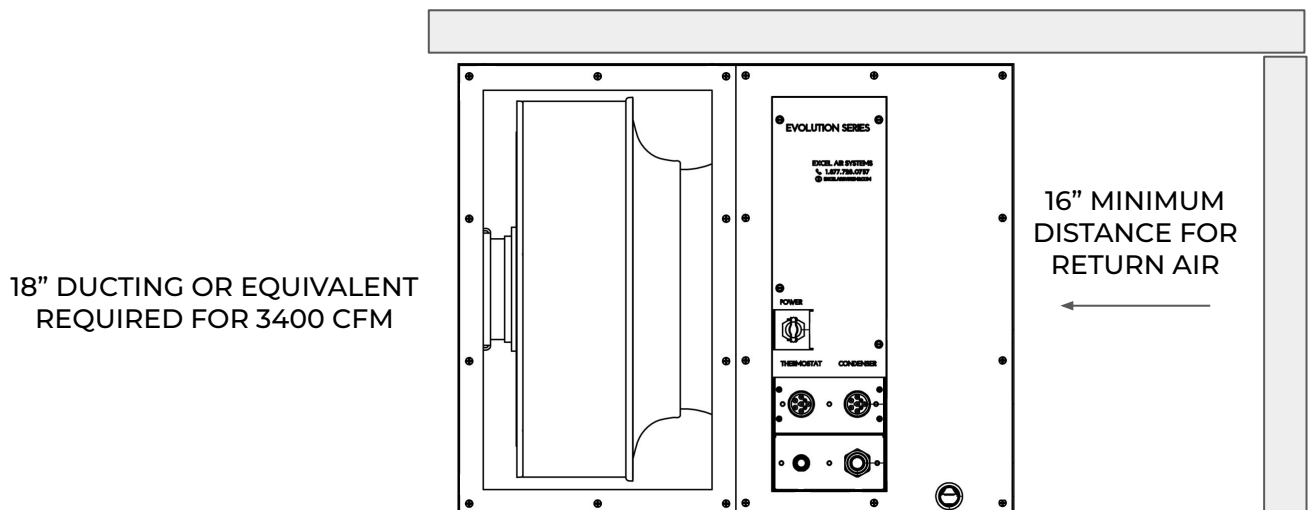
#### SAFE LIFTING

Making sure to use some sort of lift, since larger Air Handlers weigh in excess of 300 lb.

### 3- to 5-TON EVOLUTION SERIES INDOOR AIR HANDLER PLACEMENT



### 2-TON EVOLUTION SERIES INDOOR AIR HANDLER PLACEMENT





# INSTALLATION

## STEP-BY-STEP INSTRUCTIONS

1. Place the Outdoor Condenser unit outside, at least 9-12" from a wall, with all three sides open to air.
2. Place the Indoor Air Handler unit in desired location within your space. Make sure that the Filter, Fittings, and Electrical Panel are easily accessible for maintenance.
3. Run pre-charged Lineset from the Indoor Air Handler unit to the Outdoor Condenser unit. Having the small access Fittings on the lines connected to the Outdoor Condenser unit is recommended for any potential troubleshooting.
4. When connecting the Plug & Play Fittings, no tools are required – simply pull back the red portion of the female Fitting and slide it onto the male Fitting, roughly three quarters of the way over the Fitting, onto the threads. Make sure that both Fittings are Square, Up/Down, and Side/Side. Turn clockwise to tighten, until the ball bearings snap into the machined track.  
  
Repeat for all four Fittings on the unit. If a Fitting is not turning easily, threads may be misaligned. Turn counter-clockwise to reseal the Fitting, then clockwise to tighten the Fitting.
5. Screw the included white PVC P-Trap into the Condensation Drain on the unit, making sure that it is facing downward. This prevents air from entering, plugging the drain, and overflowing it. (Occasional priming is required to ensure constant water flowing from the P-Trap.)
6. Take Control Wire from connector labelled *Condenser* at the Indoor Air Handler and connect it to the Outdoor Condenser. Line up keyholes of male and female connectors and push them together. Turn the outer ring clockwise to lock connectors in place. The triangles etched on the connectors should line up on both sides of the connector. Repeat connection on the Outdoor Condenser unit.
7. Remove the Electrical Panel cover, gaining access to the system controls. Using one of the two available 1/2" holes, wire the thermostat to the following corresponding terminals inside the Electrical Panel: **Orange = O, White = C, Green = G, Black = Y, Red = R**
8. Run electrical wire from the main panel to the Indoor Air Handler, through the 3/4" electrical connector and into the box. Secure the wire onto the Contactor using the set screws on each terminal, connecting the ground to the green terminal block. Verify that all wires are secure and that the 3/4" electrical connector has been sufficiently tightened.  
(Installation of a single-phase system requires two hot wires and a ground, while installation of a three-phase system requires three hot wires and a ground. No common is required.)
9. Turn on the main electrical breaker, causing the Thermostat to energize and system to power on. If installing a three-phase system, verify that the fan is spinning in a clockwise direction. If that is not the case, swap placement of the two hot wires on the Contactor, then try again.

*For additional information  
and step-by-step videos,  
please visit:*




[www.excelairsystems.com/startup](http://www.excelairsystems.com/startup)





# OPERATION

## BASIC THERMOSTAT

### FAN TEST

1. Press , then press the  icon. Indoor fan turns **ON**.
2. Press , then press the  icon. Indoor fan turns **OFF**.





### COOLING MODE

1. Press , then press  until **COOL** mode is displayed.
2. Adjust set temperature so it is 5 degrees below room temperature.
3. Cooling should come on within just a few seconds.
4. Adjust the set temperature 2 degrees above the room temperature and the cooling should turn off. There may be a fan delay on your system.

*Note: There is a four-minute time delay to protect the compressor after it turns off.*

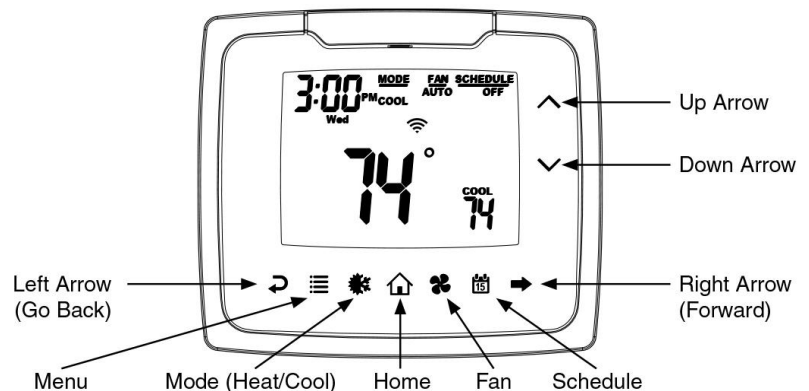
*To bypass the compressor time delay, go to **OFF** mode and press .*

### DEHUMIDIFICATION MODE

1. Go to **MENU / HUMIDITY** and press .
2. Change the humidity setpoint below the relative humidity by the differential (*Configuration Menu, Section 19, Page 17*).
3. Press  twice. If the relay configuration is set to normally open, there will be a click. The humidity screen will display **ON**.  
If the relay configuration is set to normally closed, the humidity screen will not display **ON**.
4. Change the humidity setting to greater than the relative humidity by the differential by pressing .
5. Press  twice. If the relay configuration is set to normally closed, there will be a click. The humidity screen will display **ON**.  
If the relay configuration is set to normally open, the humidity screen will not display **ON**.

*For scheduling, wifi connectivity,  
and other advanced settings,  
please visit:*

[www.excelairsystems.com/startup](http://www.excelairsystems.com/startup)



Power is applied to the Indoor Air Handler unit. Turn the breaker on.

#### COOLING

Energized by a call from the Thermostat to decrease room temperature, where the Indoor Air Handler fan will operate in conjunction with the compressor. The Outdoor Condenser fan will begin to spin, modulating its speed based on load and outdoor ambient air temperature.

#### FAN

Can be operated independently of the Thermostat for constant air movement and circulation inside the room.

#### DEHUMIDIFICATION

Only controls the system if there is no call for cooling, since Cooling mode is always prioritized over Dehumidification. Then, if a call to dehumidify is active, the Indoor Air Handler fan and compressor will start, but the Outdoor Condenser Fan fan motor will not run. Heat will be rejected from the Indoor Air Handler and begin to increase the room temperature as it dehumidifies. If room temperature exceeds the set cooling temperature, Cooling mode will take priority and cool the room to the desired setpoint.

# OPERATION

## COOLING MODE

Once all refrigerant lines and control wires have been connected to both the Indoor Air Handler unit and the Outdoor Condenser unit, connect power to the main contactor inside the Indoor Air Handler, then turn on the breaker.

Unlike traditional split air conditioning systems, the Evolution Series compressor is located inside the Air Handler unit and not outside in the Condenser unit. The unit has the ability to cool or dehumidify separately by rejecting hot gas to one of two separate condensing coils. All Evolution Series systems prioritize the call for cooling over the call for dehumidification.

### AIR HANDLER FAN

The Indoor Air Handler fan can be operated independently from the thermostat and will be forced on by a call for cooling or dehumidification. When G is energized, a 24-volt signal will pull in the fan relay/contacter, allowing line voltage power to reach the Air Handler blower fan motor.

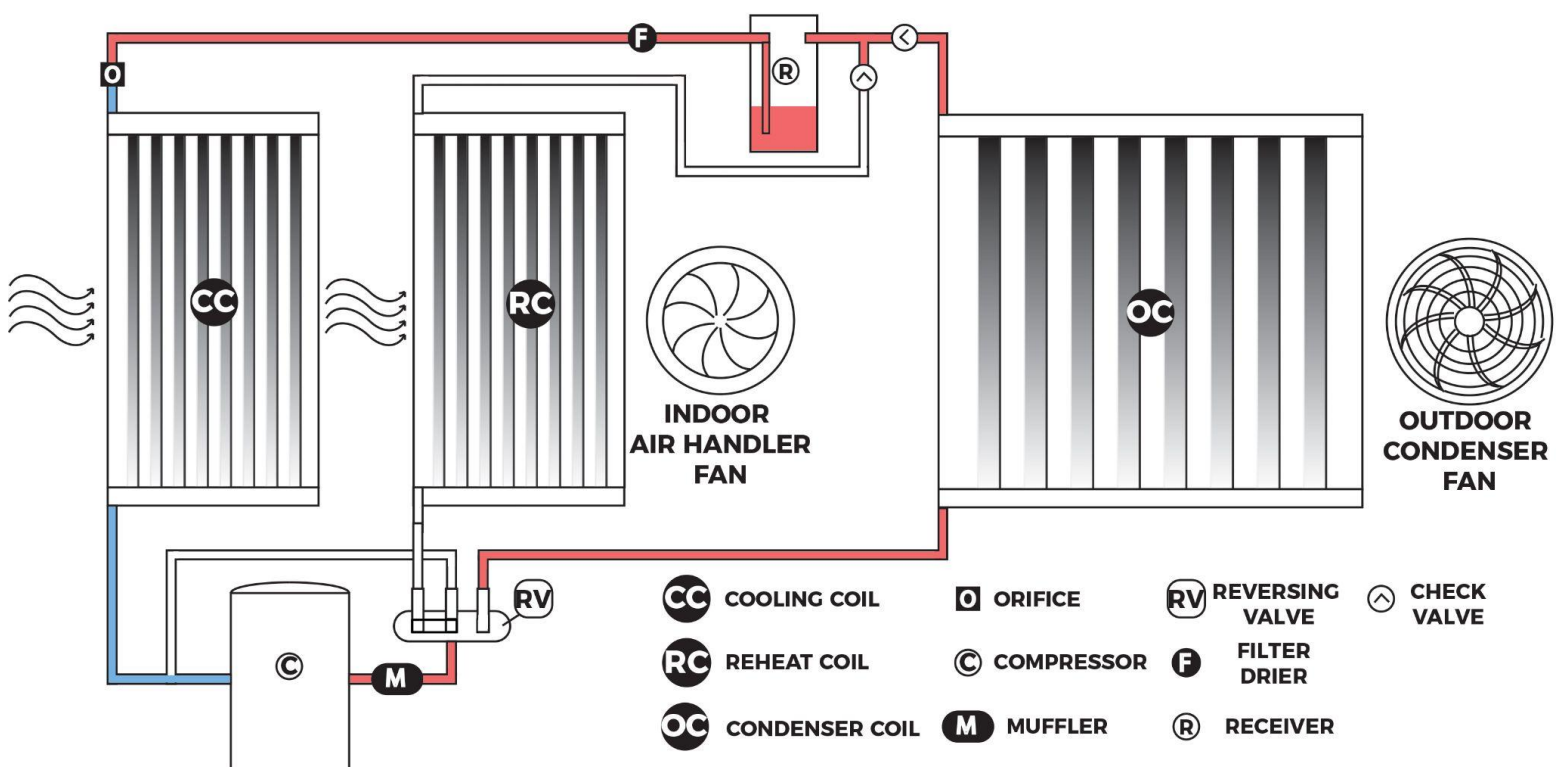
When a call for cooling is present, the thermostat automatically energizes G. During a call for dehumidification, a secondary relay is energized to apply a 24-volt signal to G and remove line voltage power to the Outdoor Condenser unit fan motor, which is not required as hot gas is diverted to the reheat coil in the Indoor Air Handler.

### COOLING

The thermostat will call for cooling when the room temperature rises by 3 ° F above the cooling setpoint. The thermostat sends a 24-volt signal to the compressor contactor, energizing the compressor and outdoor condensing units fan motor. The compressor pumps high pressure vapor refrigerant to the outdoor condensing unit where it is cooled to a high pressure liquid refrigerant. It then makes its way back into the indoor air handlers evaporator coil where the liquid refrigerant is metered and evaporated by the return air heat load. The compressor suction line pulls low pressure evaporated vapor from the evaporator and the cycle repeats until the thermostat setpoint is satisfied.

### CONDENSER FAN

The Outdoor Condenser fan only operates during cooling mode. The fan has the ability to completely self modulate from 0 to 100% in speed, depending on the temperature and pressure levels of the condensing refrigerant (generally, 90 to 100 ° F and 275 - 318 PSI, respectively).





# OPERATION

## DEHUMIDIFICATION MODE

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Unlike traditional split air conditioning systems, the Evolution Series compressor is located inside the Air Handler unit and not outside in the Condenser unit. The unit has the ability to cool or dehumidify separately by rejecting hot gas to one of two separate condensing coils. All Evolution Series systems prioritize the call for cooling over the call for dehumidification.

### AIR HANDLER FAN

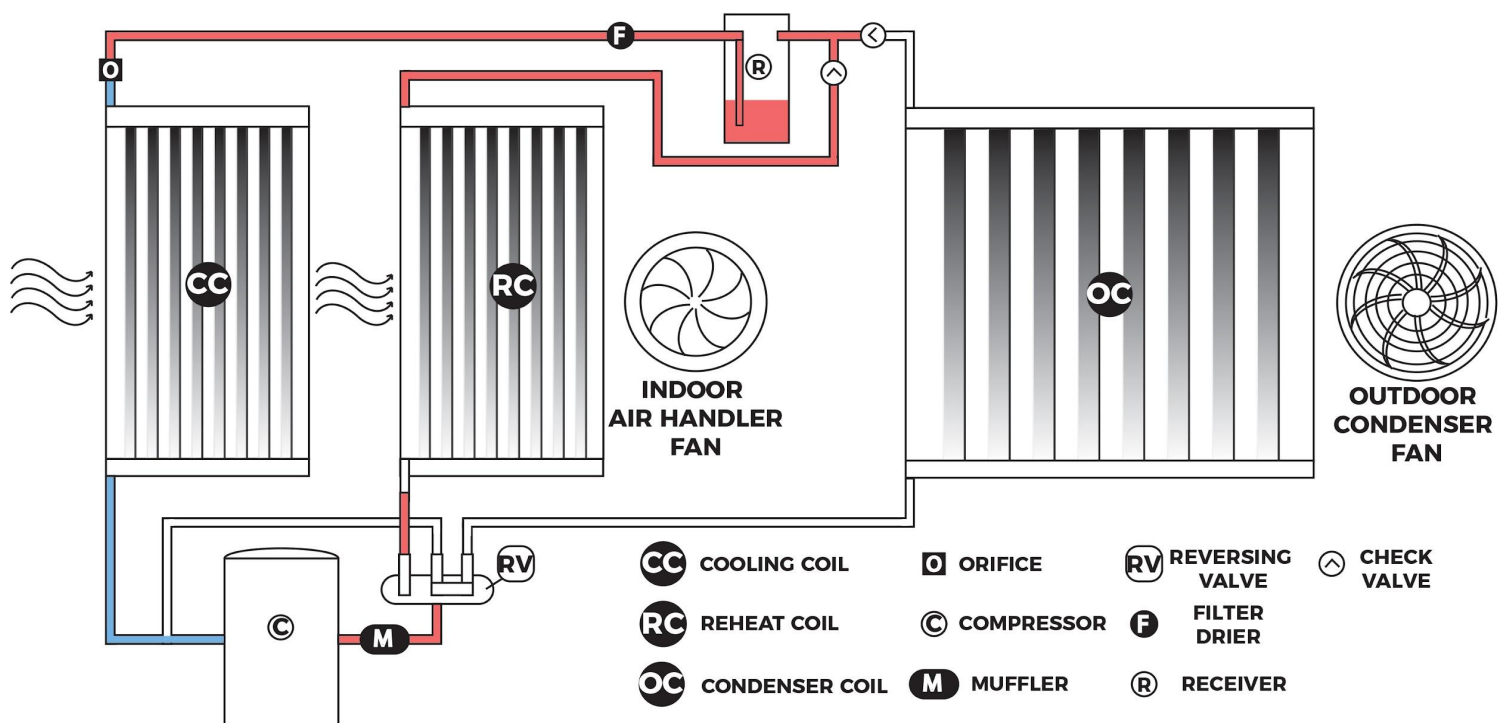
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### DEHUMIDIFICATION

When a call for dehumidification is present, a 24-volt signal is sent to both the compressor contactor and the reversing valve solenoid. The compressor pumps high-pressure vapor refrigerant into the Indoor Air Handler condensing coil, where it is cooled down to a high pressure liquid refrigerant.

It then makes its way to the Indoor Air Handler evaporator coil, where the liquid refrigerant is metered and evaporated by the Return Air heat load. The compressor suction line pulls low pressure vapor from the evaporator and the cycle repeats until the humidity level in the space reaches the desired humidity setpoint.



# MAINTENANCE

## EVOLUTION SERIES SYSTEM

Regular basic maintenance is required for all Evolution Series systems.

### **FILTER REPLACEMENT**

**Frequency:** 2-4 months

**Merv Rating:** >4

**Size:** 2-Ton = 17" x 18.5"  
3-Ton = 15" x 31"  
5-Ton = 22" x 38"

Filter replacements are recommended every 2-4 months, depending on the cleanliness of the environment. The Return Air filters are designed to stop large particles from clogging the Air Handler coils. If these become too restricted by debris, static pressure will continue to build, decreasing fan speed and eventually freezing the system. Custom size filters are available in packs of 6, directly from Excel Air Systems.

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### **CONDENSER INSPECTION**

**Frequency:** Monthly

**Cleaning Solution:**

Water or  
aluminum-rated coil cleaner

Regular inspection of the Outdoor Condenser unit is recommended, as debris from surrounding trees can become stuck in the coil face and/or impede axial fan movement during certain seasons. Spray water onto the coil face to clean it. Then, if any further cleaning is required, use either light soap or aluminum-rated coil cleaner and rinse. Repeat this process until all dirt and debris is removed. If the coil does not remain clean, performance will be impacted, as it will be much more difficult to keep the coil cool.

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### **CONDENSATE DRAIN**

**Frequency:** 6 months

It's important to clean out the condensation assembly every six months to ensure proper drainage of the condensate from the system. Make sure to clean out the P-Trap, as standing water could lead to sludge in the trap, eventually blocking the condensation from escaping, and overflowing the drain pan. If a condensate pump is being used, it's important to clean the reservoir out as well.

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### **ELECTRICAL PANEL**

**Frequency:** 6 months

With the power turned off, remove the electrical panel cover on the Indoor Air Handler and inspect the panel. Make sure to verify that all wires to the main contactor and all screw terminals on the relay bases are sufficiently tightened. Additionally, inspect all wires for any burned leads.

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### **GENERAL INSPECTION**

**Frequency:** Monthly

**Inquiries:**

[tech@excelairsystems.com](mailto:tech@excelairsystems.com)  
or 1-877-728-0757 Ext. 2

As these systems are fully sealed, there should be no refrigerant escaping, and the system should continue to operate until either a leak or component failure. Therefore, proactive measures, such as monthly inspections, will greatly reduce the chance of sudden unit failure. Inspect both the indoor and outdoor units, looking for any signs of wear to fittings, connectors, or motors. Ensure that the Turn & Lock Connectors are tightly fastened. Follow both the lineset and control wire from inside to outside, looking for any rips, tears, or kinks in the lines. Verify that the thermostat is clean and operational.

# MAINTENANCE

## ACCESSORIES

Regular basic maintenance is required for all accessories to prolong lifespan and increase effectiveness.

### UV AIR PURIFIER

**Frequency:** 6 months

**Replacement:** 2 years

With the system power turned off, access the Supply Air by removing the top plenum or side panel of the blower module. The UV-C Germicidal Bulb will either be either held magnetically in place or bolted to the unit frame. Inspect the bulb for any deficiencies and, with a microfiber cloth, lightly wipe away any dirt and debris that may have built up on the bulb. Bulbs have a life expectancy of two years (15,000 hours).

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### FABRIC DUCT

**Frequency:** 2-4 months

**Cleaning Solution:**

Standard wash cycle.  
Do not use fabric softener.

A recommended visual inspection every couple months should be adequate for most applications. In certain government facilities, continuous cleaning may be necessary in accordance with Food Safe requirements. Detach Fabric Duct from supply plenum by removing ratchet strap and unclipping plastic aircraft cable clips. Fabric Duct can be cleaned in standard washing machine with basic cleaning solution. For drying, either tumble dry (no warmer than 110 °F / 45 °C) or re-install, then run the system fan to air dry.

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### CLEANAIR - INLINE

**Frequency:**

1" Pre-Filter - 2-4 months  
4" HE Filter - 6-12 months  
2 x Charcoal - 9-12 months

Remove the front panel of the Inline CleanAir module, located right past the unit blower module (Supply Air), then take out both the 1" pre-filter and 4" high-efficiency filter for inspection. If filters are dark/full, replace them. Carefully slide both charcoal trays out of the unit and either discard charcoal or dump into a bin to mix it. Place charcoal back into trays. For vertical applications, place  $\frac{1}{3}$  of the charcoal (5 lb) in the lower tray, with the remaining  $\frac{2}{3}$  (10 lb) in the upper tray. For horizontal applications, distribute charcoal evenly (7.5 lb in each). Some charcoal may become loose on initial startup.

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### CLEANAIR - STANDALONE

**Frequency:**

1" Pre-Filter - 2-4 months  
4" HE Filter - 6-12 months  
2 x Charcoal - 6-12 months

Unplug system and remove the front panel to expose filters. Remove and inspect the 1" pre-filter and 4" high-efficiency filter. Replace any filters that may be heavily loaded. By replacing the 1" pre-filter regularly you will increase the longevity of both the high-efficiency filter and the coconut charcoal. Twice a year, remove the charcoal trays and dump the charcoal into a bin. Mix or replace charcoal by filling near top of tray for the two top trays, with the remaining charcoal (roughly half a tray) in the bottom. Standard charcoal lifespan is 1 year, but many factors can de-rate or prolong its life.

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### DAMPER PACKAGE

**Frequency:** Monthly

**Inquiries:**

[tech@excelairsystems.com](mailto:tech@excelairsystems.com)  
or 1-877-728-0757 Ext. 2

Regularly inspect operation of each motorized Damper to ensure smooth turning and sealing. If adjustment is required, carefully set the locking bolt by hand. Inspect the control panel to check that relays, bases, and screw terminals appear to be in proper condition. Test plug-in timer to make sure that it is communicating with the relay by turning the outer dial or digitally triggering the flip motion.

# PRODUCT CERTIFICATION

INTEREK

All Evolution Series units have been put through rigorous testing for both UL and CSA standards.

UL 1995: 2011, 4th Edition / CSA C22.2 #236: 2011, 4th Edition

UL 1004-3: 2012, 2nd Edition

CSA C22.2#77: 2014, 8th Edition



**Intertek**  
5016657

Conforms to UL STD 1995  
Certified to CSA STD C22.2#236

# SPECIFICATIONS

## UNIT DETAILS

UNIT CAPACITY	2-TON	3-TON	4-TON	5-TON
BTU	24,000	36,000	48,000	60,000
COOLING CAPACITY*	6,000 W	9,000 W	12,000 W	15,000 W
DEHUMIDIFICATION PINTS PER DAY	180	250	350	410
UNIT MODE TYPES AVAILABLE	COOLING ONLY or COOLING + MASS DEHUMIDIFICATION			
VOLTAGE/PHASE	230 V 1-PHASE / 230 V 3-PHASE / or SPECIAL ORDER 460 V 3-PHASE			
FLA	13.9 A / 7.8 A / 6.3 A	21.2 A / 16.0 A / 10.7 A	25.2 A / 17.4 A / 11.3 A	29.5 A / 20.5 A / 12.9 A
MCA	20 A / 15 A / 10 A	25 A / 20 A / 15 A	30 A / 20 A / 15 A	35 A / 25 A / 15 A
MOP	30 A / 20 A / 15 A	40 A / 30 A / 20 A	50 A / 35 A / 20 A	60 A / 50 A / 25 A
AIR HANDLER CAPACITOR	14 uF			
CONDENSER CAPACITOR	10 uF	16 uF		
REFRIGERANT TYPE	R-410A			
COOLING ONLY VERTICAL UNIT CHARGE	-	-	6 lb 12 oz	6 lb 12 oz
COOLING ONLY HORIZONTAL UNIT CHARGE	-	6 lb 4 oz	6 lb 10 oz	6 lb 4 oz
COOLING + DEHUMIDIFICATION VERTICAL UNIT CHARGE	7 lb 6 oz	6 lb 10 oz	8 lb 4 oz	8 lb 4 oz
COOLING + DEHUMIDIFICATION HORIZONTAL UNIT CHARGE	7 lb 6 oz	7 lb 3 oz	9 lb 4 oz	9 lb 4 oz
DISCHARGE LINE	5/8" INSULATED (75' MAXIMUM)			
LIQUID LINE	3/8" (75' MAXIMUM)			
CONTROL WIRE CONNECTION	9-PIN TURN & LOCK			
MODULATION	LOW AMBIENT CONTROLLER (-35 °F)			
AIR HANDLER CFM	2400	3000	3400	3400
CONDENSER CFM	1800	4500	4500	4500
AIR HANDLER DB	68	69	69	69
CONDENSER DB	48 / 58 / 68	55 / 62 / 69	55 / 62 / 69	55 / 62 / 69
AIR HANDLER WEIGHT	189 lb	260 lb	305 lb	305 lb
CONDENSER WEIGHT	79 lb	126 lb	126 lb	126 lb



# SPECIFICATIONS

## PERFORMANCE DATA

MODEL	EVOLUTION SERIES 5-TON	INDOOR AIR HANDLER BLOWER 3400 CFM at 0.5" STATIC PRESSURE				
		80	80	75	80	80
CONDENSING AIR TEMPERATURE	INDOOR DB (F)	80	80	75	80	80
	INDOOR WB (F)	57	62	62	67	72
65	TOTAL BTU	66.8	67.5	63.5	68.2	67.8
	SENSIBLE BTU	60.1	56.8	46.5	44.2	29.6
	LATENT BTU	6.7	10.7	17.0	24.0	38
75	TOTAL BTU	62.4	64.9	61.0	65.9	66.0
	SENSIBLE BTU	55.7	55.7	45.6	43.6	29.5
	LATENT BTU	6.7	9.2	15.4	22.3	36.5
85	TOTAL BTU	60.1	62.4	63.1	63.6	64.1
	SENSIBLE BTU	53.4	54.7	49.7	42.9	29.4
	LATENT BTU	6.7	7.7	13.4	20.7	34.7
95	TOTAL BTU	56.7	59.8	56.0	61.2	62.2
	SENSIBLE BTU	51.0	53.6	43.9	42.3	29.4
	LATENT BTU	5.7	6.2	12.1	18.9	32.8
105	TOTAL BTU	53.6	56.3	52.2	57.4	59.4
	SENSIBLE BTU	48.2	50.6	42.5	40.9	29.0
	LATENT BTU	5.4	5.7	9.7	6.5	30.4

MODEL	EVOLUTION SERIES 4-TON	INDOOR AIR HANDLER BLOWER 3400 CFM at 0.5" STATIC PRESSURE				
		80	80	75	80	80
CONDENSING AIR TEMPERATURE	INDOOR DB (F)	80	80	75	80	80
	INDOOR WB (F)	57	62	62	67	72
65	TOTAL BTU	54.4	54.7	53.2	56.9	56.3
	SENSIBLE BTU	51.2	48.7	40.4	38.8	29.0
	LATENT BTU	3.2	4.0	12.8	18.1	27.3
75	TOTAL BTU	52.0	52.1	50.2	54.3	53.8
	SENSIBLE BTU	49.0	47.6	39.3	38.2	28.1
	LATENT BTU	3.0	4.5	10.9	16.1	25.7
85	TOTAL BTU	49.7	49.4	47.1	51.7	51.4
	SENSIBLE BTU	46.8	46.5	38.2	37.6	27.2
	LATENT BTU	2.9	2.9	8.9	14.2	24.2
95	TOTAL BTU	47.4	46.8	44.1	49.1	48.9
	SENSIBLE BTU	44.5	45.4	37.1	37.0	26.3
	LATENT BTU	2.9	1.4	7.0	12.1	22.6
105	TOTAL BTU	43.5	42.9	39.5	44.4	44.5
	SENSIBLE BTU	40.8	41.5	34.9	35.1	25.0
	LATENT BTU	2.7	1.4	4.6	9.3	19.5

# SPECIFICATIONS

## PERFORMANCE DATA

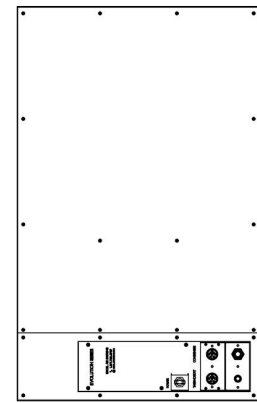
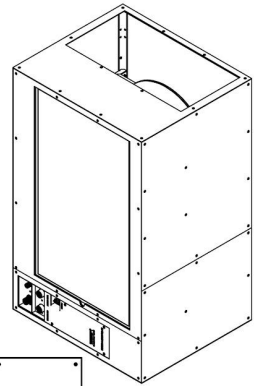
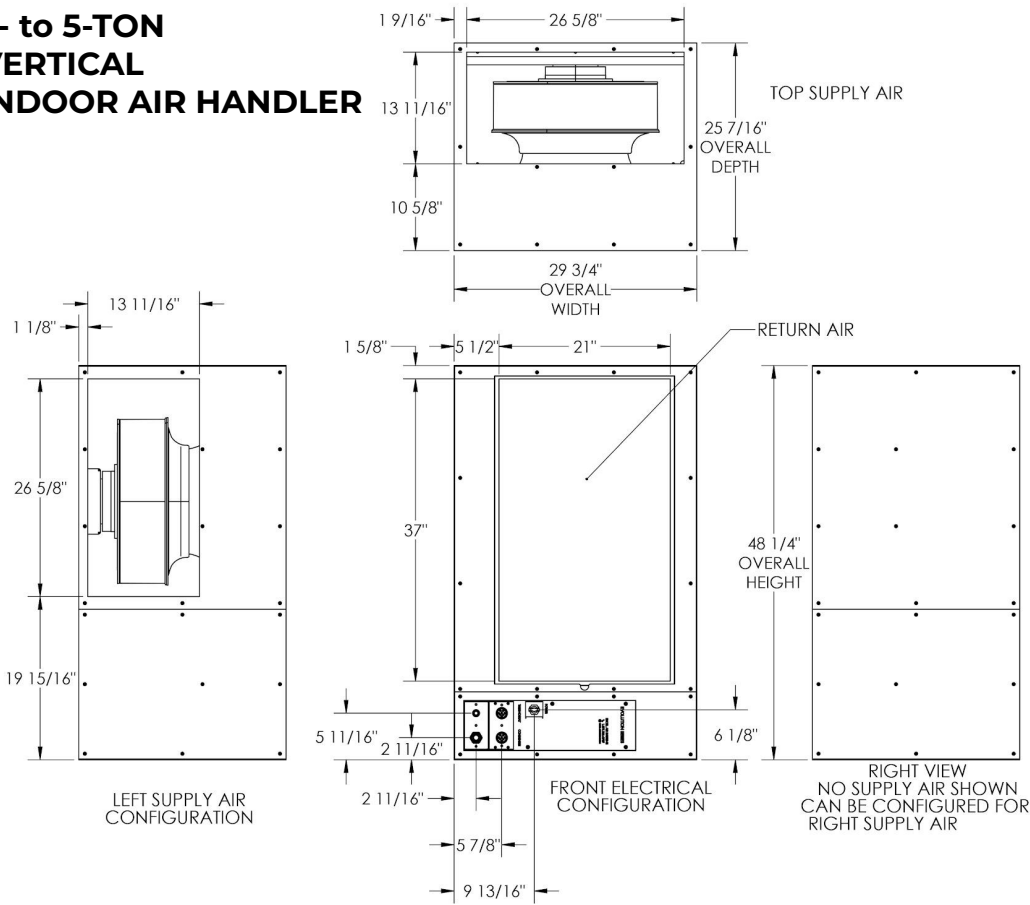
MODEL	EVOLUTION SERIES 3-TON	INDOOR AIR HANDLER BLOWER 2800 CFM at 0.5" STATIC PRESSURE				
		80 57	80 62	75 62	80 67	80 72
CONDENSING AIR TEMPERATURE	INDOOR DB (F) INDOOR WB (F)					
65	TOTAL BTU SENSIBLE BTU LATENT BTU	47.5 44.4 3.1	47.5 39.4 8.1	46.5 33.2 13.3	50.1 31.7 18.4	51.1 24.3 26.8
75	TOTAL BTU SENSIBLE BTU LATENT BTU	46.0 42.9 3.1	45.7 39.7 6.0	44.2 33.0 11.2	48.1 31.8 16.3	49.1 23.6 25.5
85	TOTAL BTU SENSIBLE BTU LATENT BTU	44.6 41.5 3.1	43.9 40.0 3.9	41.9 32.9 9.0	46.0 31.8 14.2	47.2 22.9 24.3
95	TOTAL BTU SENSIBLE BTU LATENT BTU	43.2 40.0 3.2	42.1 40.3 1.8	39.6 32.8 6.8	43.9 31.9 12.0	45.3 22.2 23.1
105	TOTAL BTU SENSIBLE BTU LATENT BTU	39.8 36.7 3.1	38.8 37.0 1.8	35.6 31.1 4.5	39.8 30.5 9.3	40.9 20.3 20.6

MODEL	EVOLUTION SERIES 2-TON	INDOOR AIR HANDLER BLOWER 2400 CFM at 0.5" STATIC PRESSURE				
		80 57	80 62	75 62	80 67	80 72
CONDENSING AIR TEMPERATURE	INDOOR DB (F) INDOOR WB (F)					
65	TOTAL BTU SENSIBLE BTU LATENT BTU	31.2 29.2 2.0	32.3 30.0 2.3	32.3 25.4 6.9	33.7 24.0 7.7	34.7 18.1 16.6
75	TOTAL BTU SENSIBLE BTU LATENT BTU	29.5 28.5 1.0	30.5 28.5 2.0	29.6 24.6 5.0	31.8 23.7 8.1	32.9 17.5 15.4
85	TOTAL BTU SENSIBLE BTU LATENT BTU	27.7 26.4 1.3	28.7 26.4 2.3	27.1 23.9 3.2	29.8 23.4 6.4	31.2 16.8 14.4
95	TOTAL BTU SENSIBLE BTU LATENT BTU	26.7 24.7 2.0	27.3 24.9 2.6	25.7 23.1 2.6	27.9 23.1 4.8	29.4 16.2 13.2
105	TOTAL BTU SENSIBLE BTU LATENT BTU	24.3 22.3 2.0	24.7 22.0 2.7	22.1 20 2.1	24.8 22.0 2.8	26.4 15.4 11.0

# SPECIFICATIONS

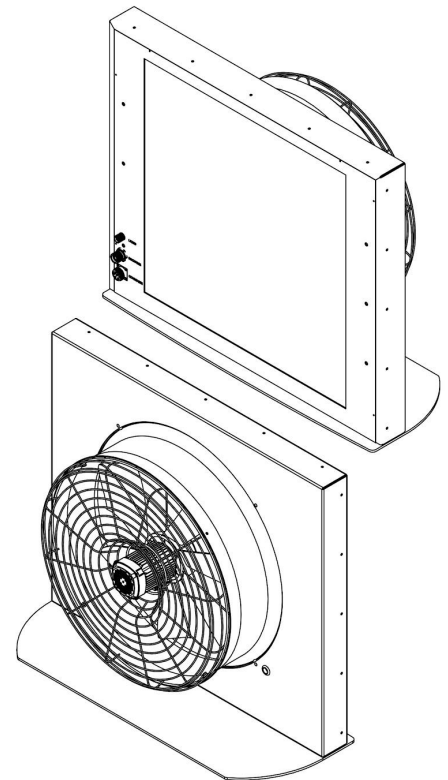
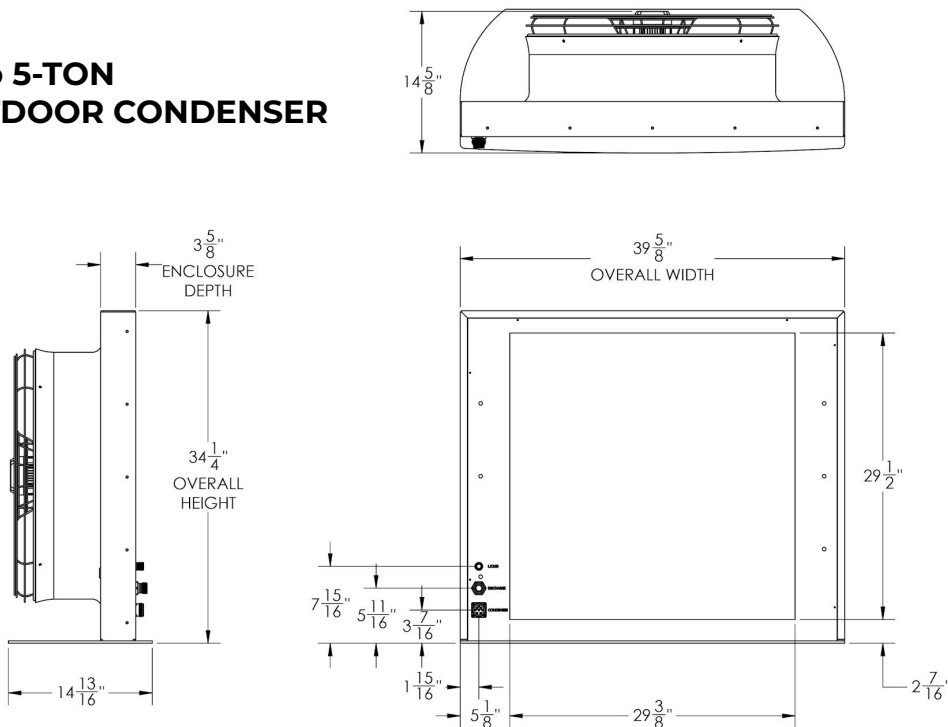
## DRAWINGS

### 3- to 5-TON VERTICAL INDOOR AIR HANDLER



REAR ELECTRICAL CONFIGURATION

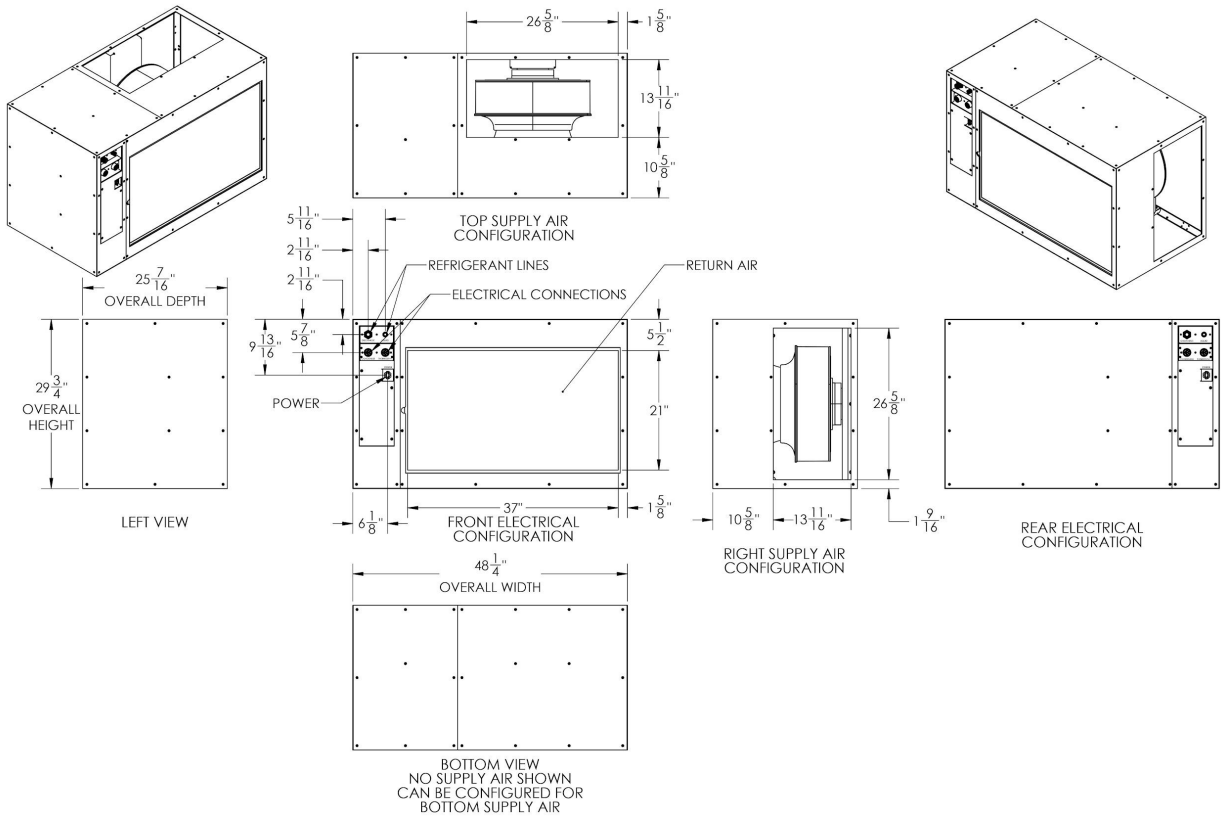
### 3- to 5-TON OUTDOOR CONDENSER



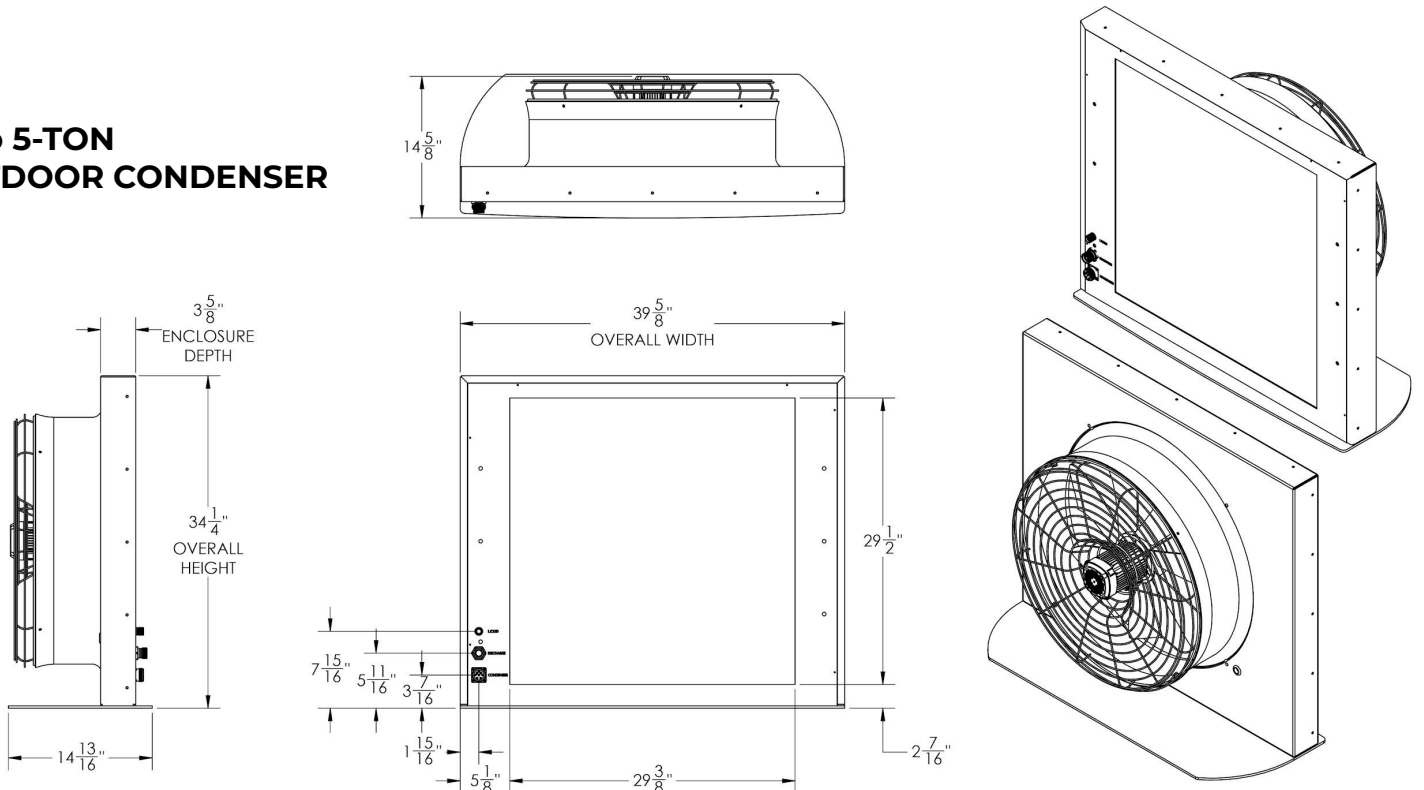
# SPECIFICATIONS

## DRAWINGS

### 3- to 5-TON HORIZONTAL INDOOR AIR HANDLER



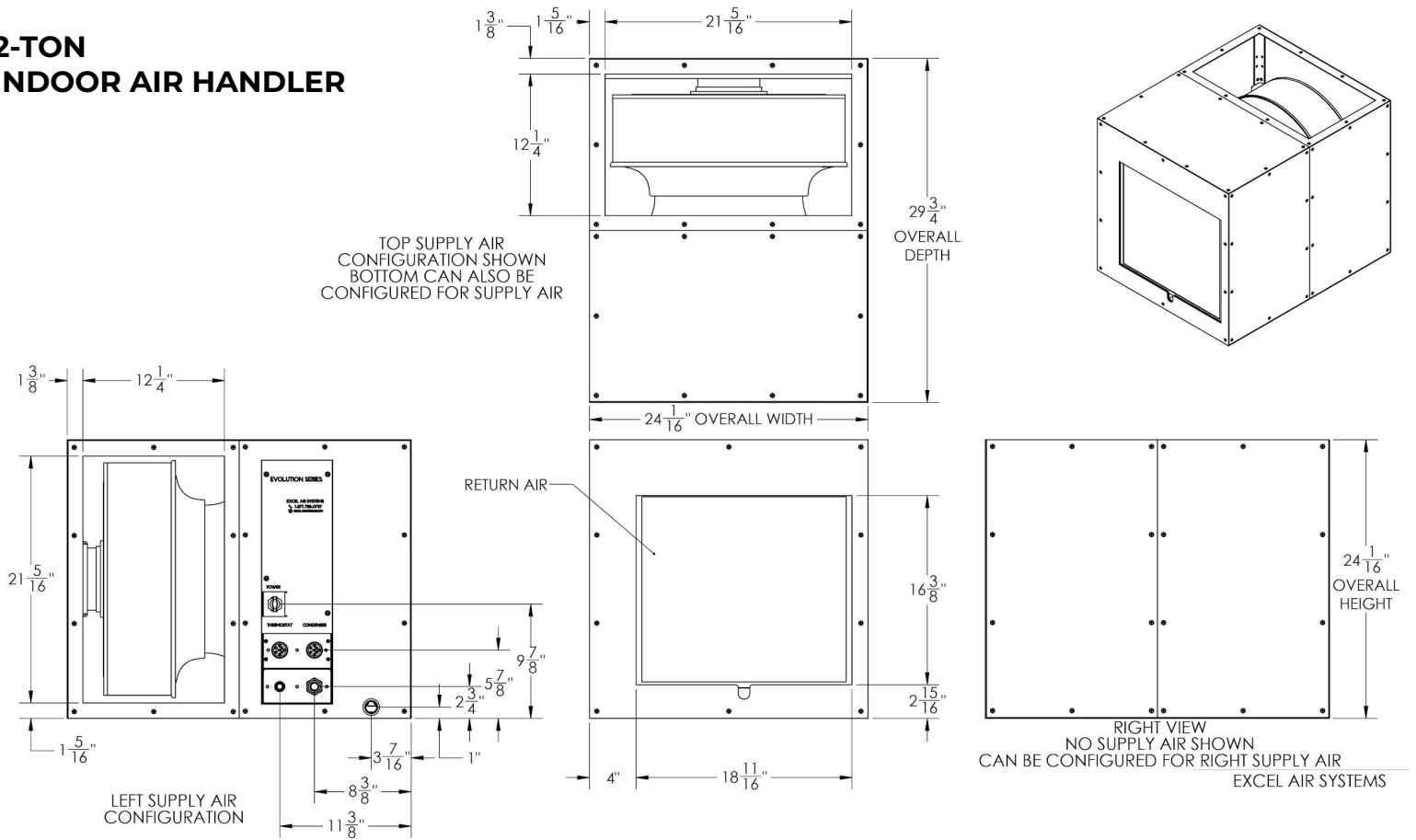
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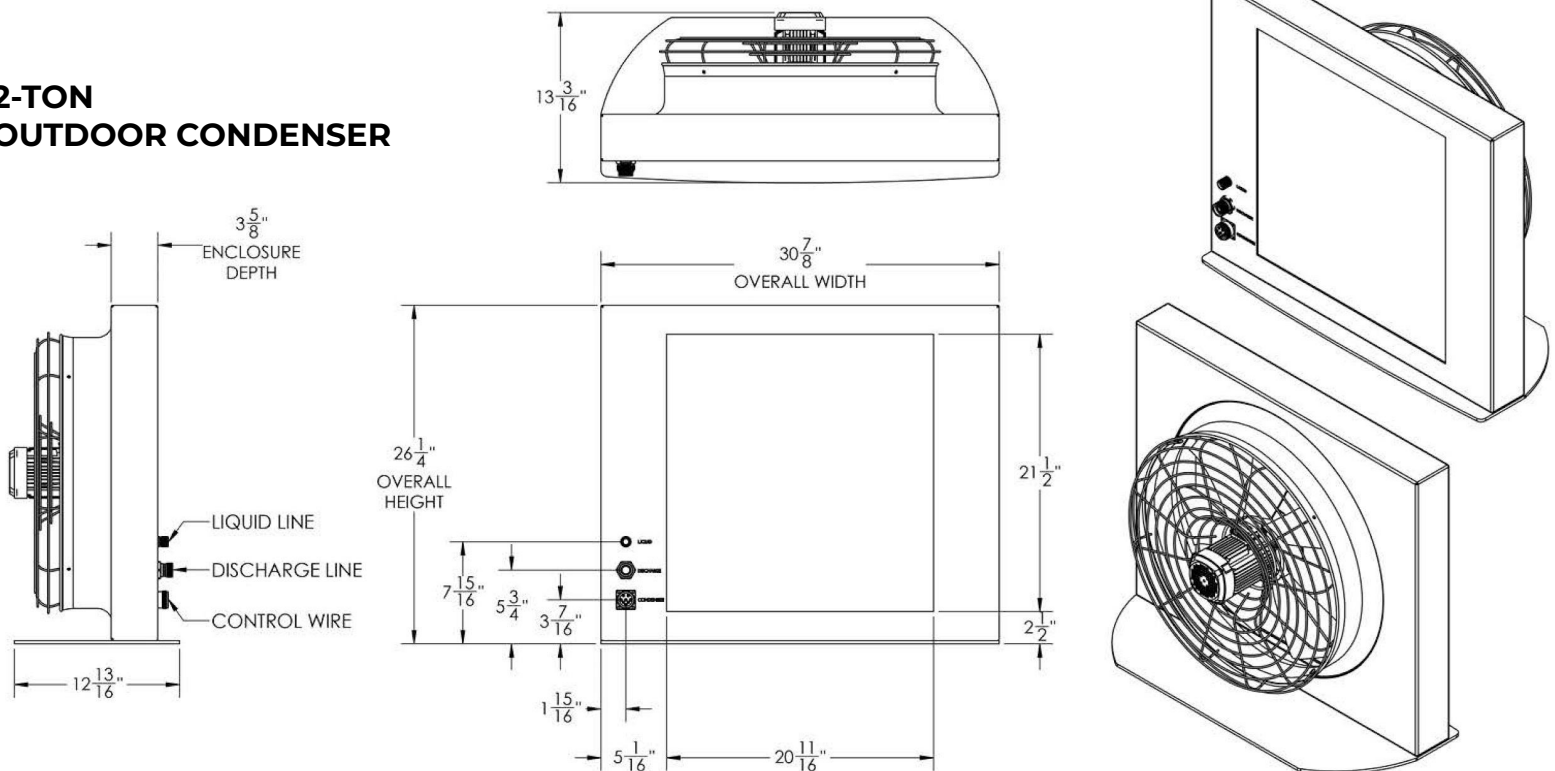
# SPECIFICATIONS

## DRAWINGS

### 2-TON INDOOR AIR HANDLER



### 2-TON OUTDOOR CONDENSER



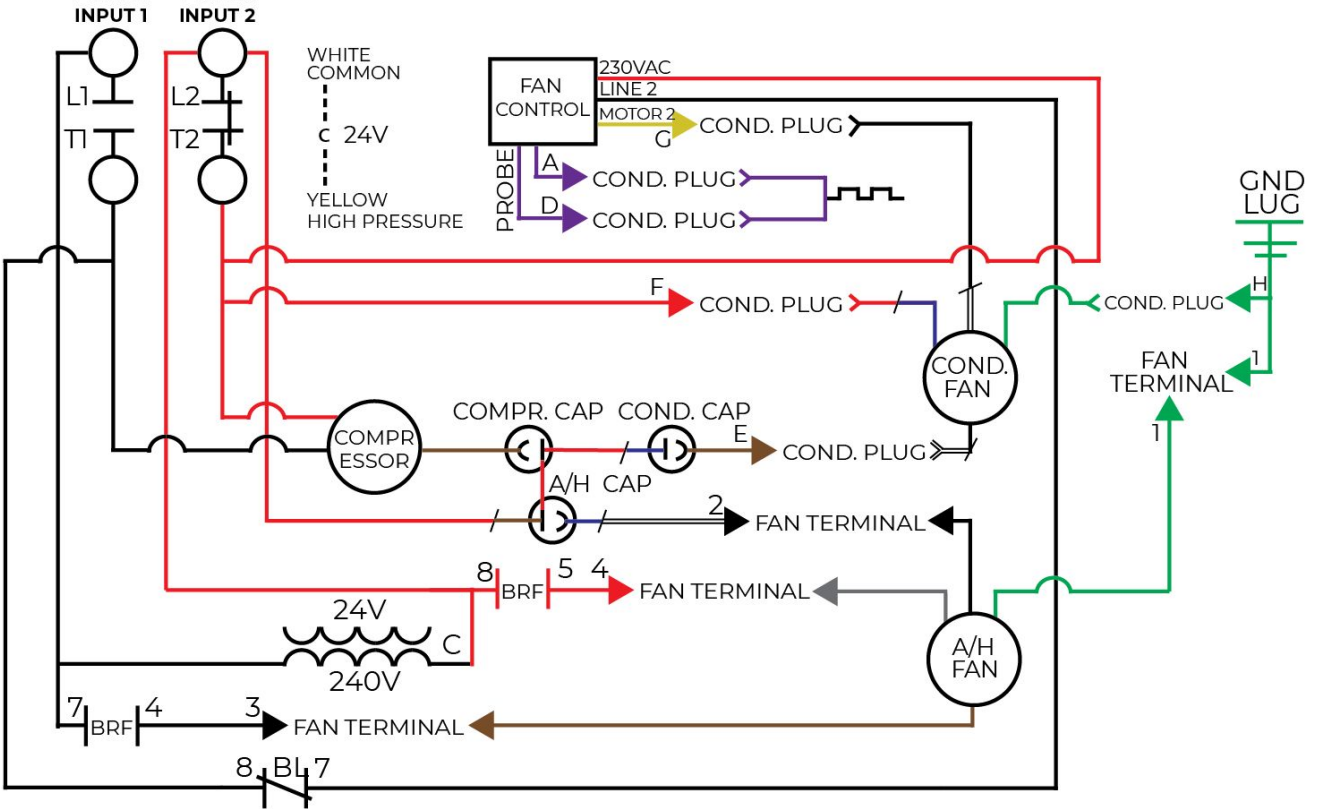


# WIRING DIAGRAMS

## 3- to 5-TON COOLING/DEHUMIDIFICATION

USE COPPER CONDUCTORS ONLY

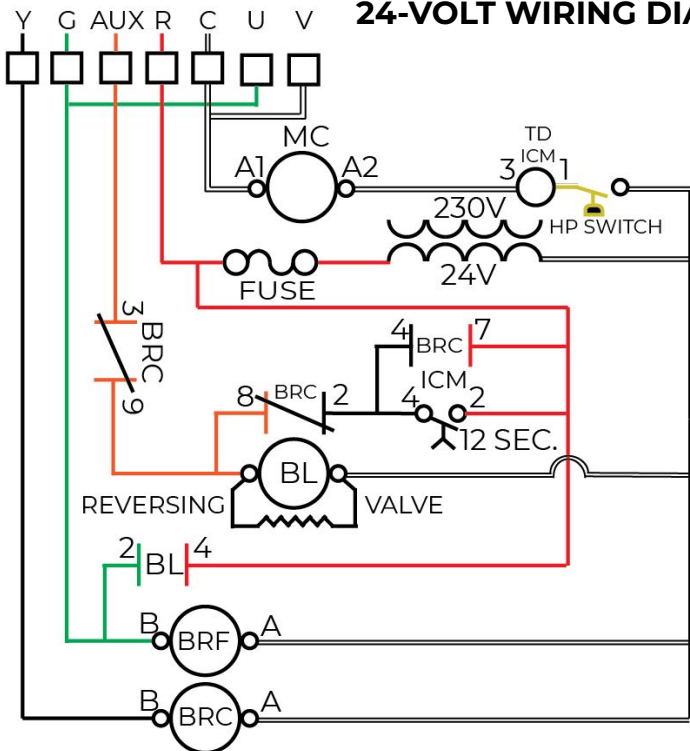
### 230-VOLT SINGLE-PHASE WIRING DIAGRAM



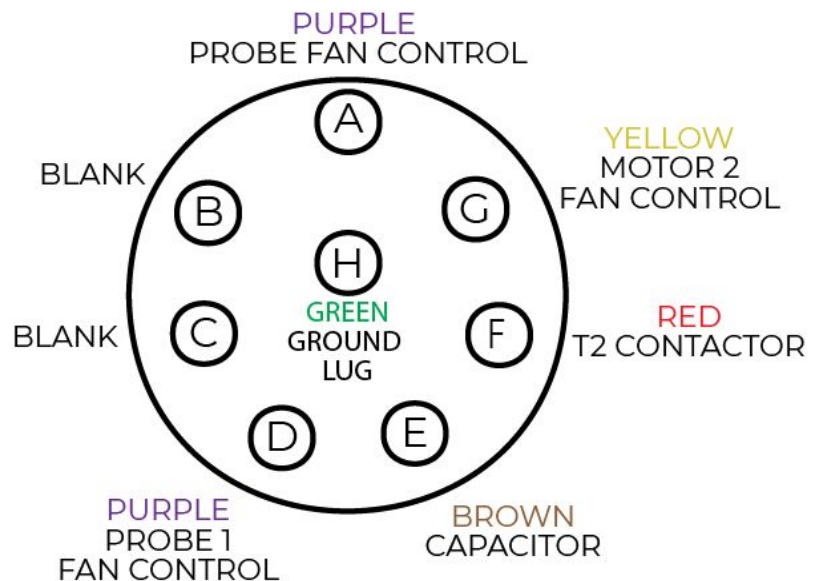
BRF BLUE RELAY FAN    BRC BLUE RELAY COOLING    BL BLACK RELAY    MC MAIN CONTACTOR

TERMINAL STRIP

### 24-VOLT WIRING DIAGRAM



### CONDENSER TURN & LOCK CONNECTOR

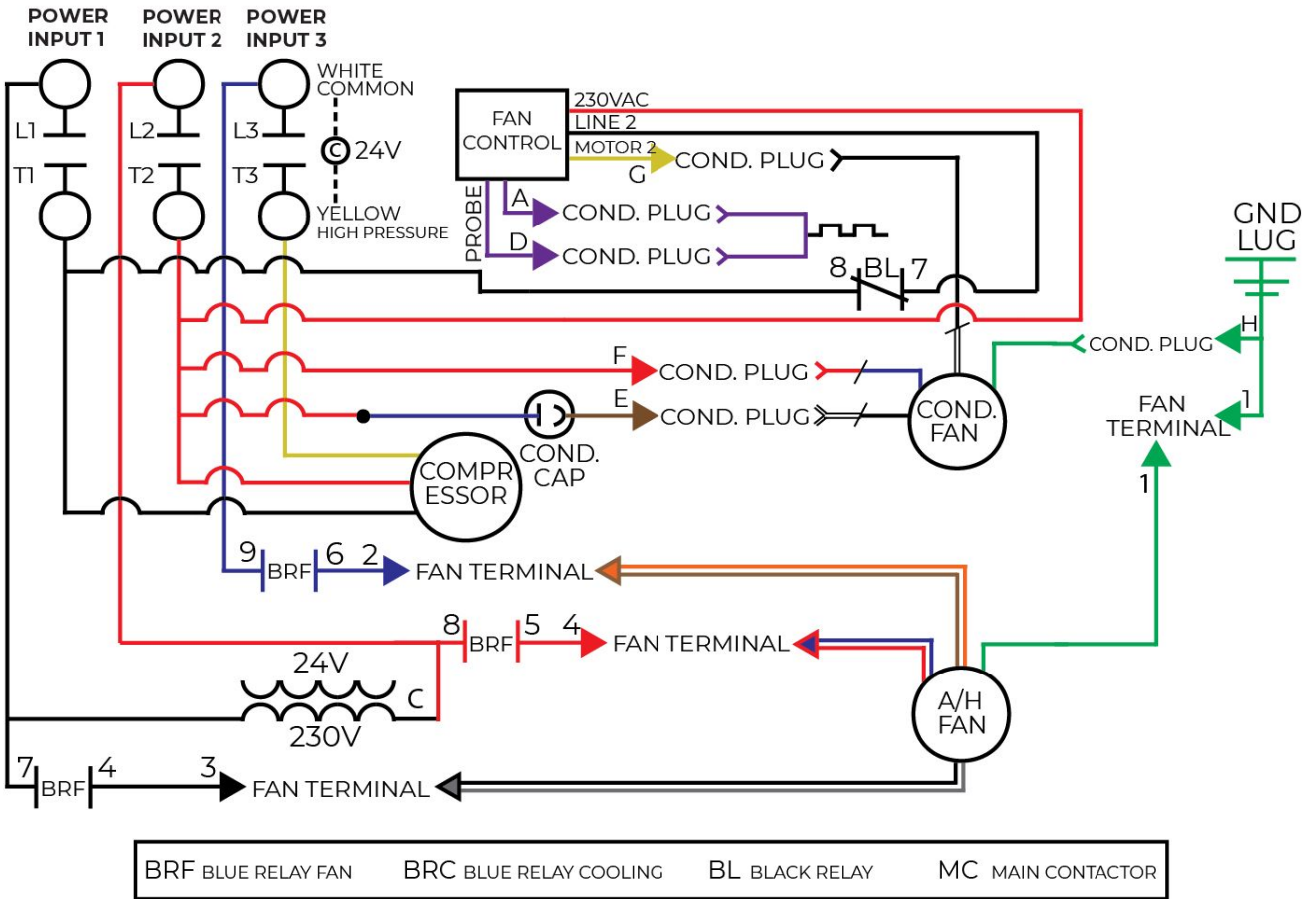


# WIRING DIAGRAMS

## 3- to 5-TON COOLING/DEHUMIDIFICATION

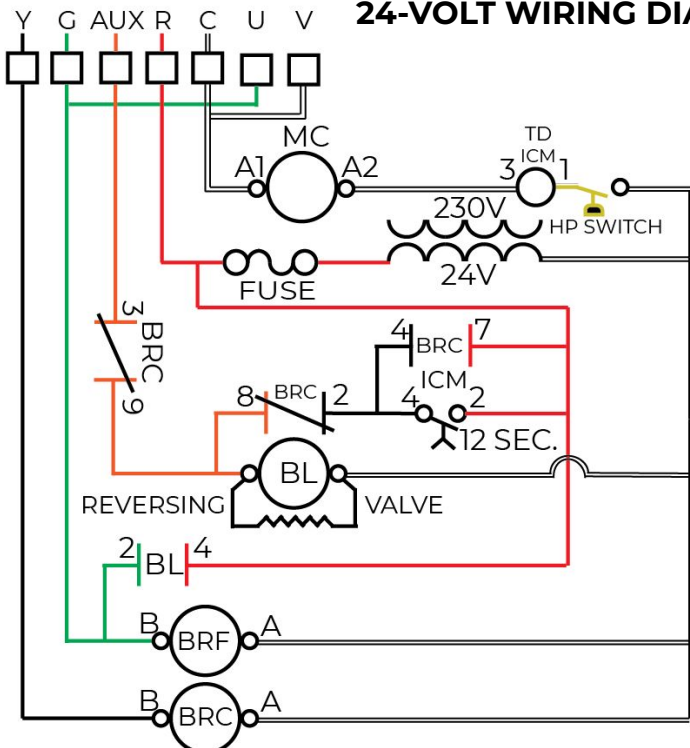
USE COPPER CONDUCTORS ONLY

### 230-VOLT THREE-PHASE WIRING DIAGRAM

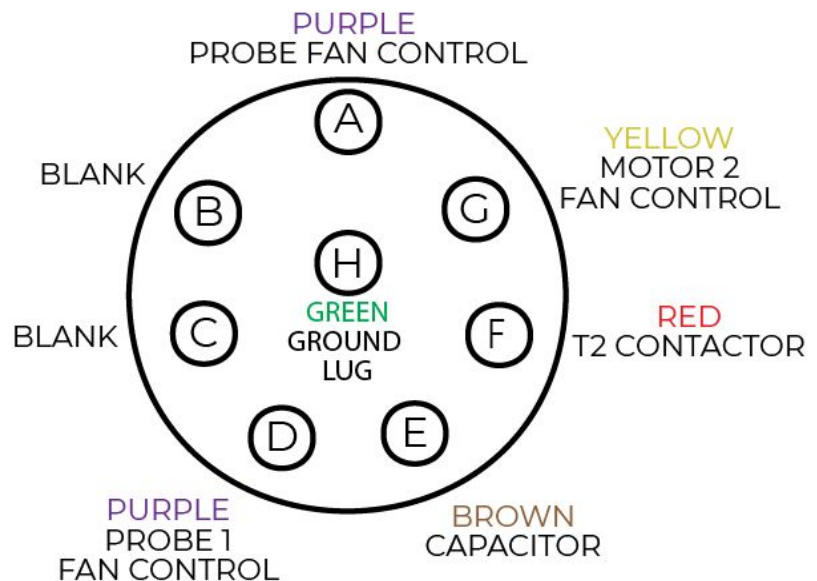


TERMINAL STRIP

### 24-VOLT WIRING DIAGRAM



### CONDENSER TURN & LOCK CONNECTOR



# LIMITED WARRANTY

## DOCUMENTATION

### **WARRANTOR**

Excel Air Systems  
120-20170 Stewart Crescent  
Maple Ridge, BC V2X0T4  
Tel: 1-877-728-0757  
[www.excelairsystems.com](http://www.excelairsystems.com)

### **WHO IS COVERED**

This warranty extends to any owner/end-user of a valid serial numbered Excel Air Systems unit. Any blacklisted units, due to theft or voided warranties, shall not be covered.

### **FIRST YEAR WARRANTY**

Excel Air Systems warrants that, for one (1) year after date of original purchase, the components will operate free from any defects in materials and workmanship.

Excel Air Systems' obligation under this warranty will be to supply, without charge, a replacement part in which a component is found to be defective within one (1) year from date of purchase and which is returned no later than thirty (30) days upon receiving the replacement part.

### **SECOND THROUGH FIFTH YEAR WARRANTY**

*(Specific to Systems Only)*

Excel Air Systems further warrants that, for a period of five (5) years, the compressor from any new valid serial numbered Excel Air Systems unit will operate free from any defects in material or workmanship, or Excel Air Systems, at its option, will repair or replace the defective part(s), provided that all labor and transportation charges for the part(s) shall be borne by the end-user.

### **END-USER RESPONSIBILITIES**

All systems must be troubleshooted via phone, email, text message, or any other means of communication with a representative on-site and an Excel Air Systems Technical Specialist before the warranty process can proceed.

If it is found that warranty service is to be performed, it is to be performed by a technician authorized by Excel Air Systems. If the end-user is unable to locate or obtain warranty service from an authorized technician they are to call Excel Air Systems and ask for the Technical Support Service Department, at which point Excel Air Systems will try to assist in finding a solution for the warranty service.

The end-user is responsible for normal care and maintenance required to the part and/or system as per the scheduling located on the *Maintenance* pages of this Design Guidelines Manual. This warranty does not cover any defect, malfunction, etc. resulting from misuse, abuse, lack of normal care, corrosion, freezing, flooding, tampering, modification, unauthorized or improper repair or installation, accident, acts of nature, or any other cause beyond Excel Air Systems' reasonable control.

### **LIMITATIONS & EXCLUSIONS**

If any Excel Air Systems part is repaired or replaced, the new part shall be warranted for only the remainder of the original warranty period.