

## Installation Instructions

# Moduleflex eFurnace™



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### WARNING



This product may contain fiberglass wool insulation. Glass wool fibers are known to the State of California to cause cancer. Disturbing insulation during installation, maintenance, or repair may expose you to glass wool fibers and may cause respiratory, skin or eye irritation. For further information on risks associated with fiberglass wool, consult Material Safety Data Sheet available from OEM.



### Caution



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised ensure that they do not play with the appliance.



Product improvement is a continuous process at Advanced Distributor Products. Therefore, product specifications are subject to change without notice and without obligation on our part. Please contact your ADP representative or distributor to verify details.

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# SAFETY

## Your safety and the safety of others are very important.

We have provided many important safety messages in this manual and on your appliance. Always read and obey all safety messages.



This is the safety alert symbol.

This symbol alerts you to potential hazards that can kill or hurt you and others.

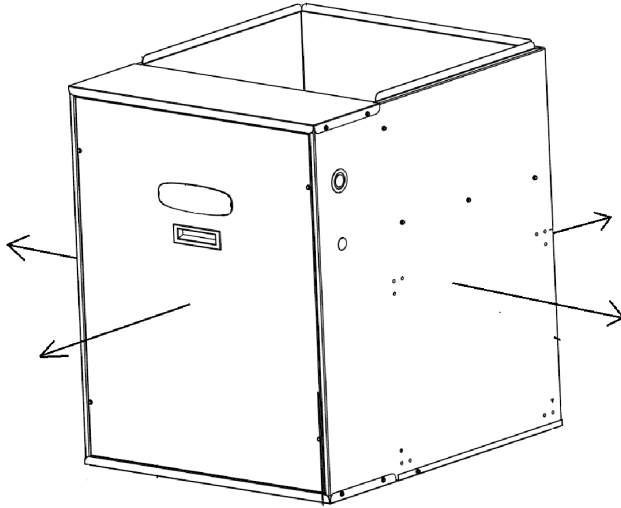
All safety messages will follow the safety alert symbol and either the word "DANGER" or "WARNING." These words mean:

**DANGER:** You can be **killed or seriously injured** if you don't **immediately** follow instructions.

**WARNING:** You can be killed or seriously injured if you don't follow instructions.

All safety messages will tell you what the potential hazard is, tell you how to reduce the chance of injury, and tell you what can happen if the instructions are not followed.

# CLEARANCES



Top (in)	Side (in)	Back (in)	Front Access Panel (in)	Bottom (in)
0	0	0	24	0

**Note:**

Clearances to combustible material to be 0" to unit sides and 24" for front panel access.

# INSTALLATION REQUIREMENTS

These instructions are intended as a general guide only and do not supersede any national or local codes in any way. Compliance with all local, state, or national codes pertaining to this type of equipment should be determined prior to installation. Read this entire instruction manual, as well as the instructions supplied in separate equipment, before starting the installation. All models are designed for indoor installation only.

The installation of the blower section, field wiring, warm air ducts, etc. must conform to the requirements of the National Electrical Code, ANSI/NFPA No. 70 (latest edition) in the United States, and any state laws, and local ordinances (including plumbing or wastewater codes). Local authorities having jurisdiction should be consulted before installation is made. Such applicable regulations or requirements take precedence over the general instructions in this manual.

Install the conditioned air plenum, ducts and air filters (not provided) in accordance with NFPA 90B Standard for the Installation of Warm Air Heating and Air-Conditioning Systems (latest edition). The blower section is provided with flanges for the connection of the plenum and ducts. Air filters must be listed as Class 2 furnace air filters. The blower section is shipped from the factory completely assembled.

Do not remove the cabinet knockouts until it has been determined which knockouts will need to be removed for the installation.

Select the final installation position that best suits the site conditions. Consider required clearances, space, and routing requirements for refrigerant line, condensate disposal, filters, ductwork, wiring, and accessibility for service. Refer to the rating plate on the blower section for specific information.

	<b>WARNING</b>	
<b>Electrical Shock</b>		
Disconnect power before servicing.		
Replace all parts and panels before operating.		
Electrically ground the unit.		
Connect ground wire to ground terminal marked		
Failure to do so can result in death or electrical shock.		
<b>Explosion Hazard</b>		
Keep flammable materials and vapors, such as gasoline, away from this unit.		
Failure to follow these instructions can result in death, explosion or fire.		

## TOOLS AND PARTS

Gather the required tools and parts before starting installation. Read and follow the instructions provided with any tools listed here.

### Tools Needed

¼" nut driver	Tape Measure
Level	Sealant
Screwdriver	UL listed wire nuts

### Parts Needed

Check local codes, check existing electrical supply, and read "Ductwork Requirements," and "Electrical Requirements," before purchasing parts.

## LOCATION REQUIREMENTS

**NOTE:** When the unit is installed in a very humid space and used in cooling applications, excessive sweating may occur on outside of unit. To prevent excessive sweating wrap unit with 1" fiberglass insulation. All openings should be sealed to prevent air leakage that could cause condensate to form inside the cabinet.

- If installed in an unconditioned space, sealant should be applied around the electrical wires, refrigerant tubing, and condensate lines where they enter the cabinet.
- Electrical wires should be sealed on the inside where they exit the conduit opening. Sealant is required to prevent air leakage and from condensate from forming inside the blower, control box, and on the electrical controls.

- The blower section and its complementing coil must be installed in such a way as to allow free access to the blower/control compartment.
- The blower section and its complementing coil must be installed with a ¾" drop in the horizontal position towards the drain pan to ensure proper condensate drainage. The blower section and coil should also be tilted ½" from back to front toward the drain line.

## IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFC's and HFC's) as of July 1, 1992. Approved methods of reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

## INSTALLATION INSTRUCTIONS

### 1. Unpacking

The blower section is completely factory assembled, and all components are performance tested. Each unit consists of a blower assembly and controls, in an insulated galvanized steel factory finished enclosure. Knockouts are provided for electrical wiring entrance.

1. Check the unit rating plate to confirm specifications are as ordered.
2. Upon receipt of equipment, thoroughly inspect it for possible shipping damage. Closely examine the unit inside the carton if the carton is damaged.
3. If damage is found, it should be noted on the carrier's freight bill. Damage claims should be filed with carrier immediately. Claims of shortages should be filed with the seller within 5 days.

**NOTE:** If any damages are discovered and reported to the carrier, do not install the unit because your claim may be denied.

### 2. Location

- The blower section should be centered in its locations and may be installed in a closet, alcove, utility room, basement, crawl space or attic. Minimum clearances must be met.

- If the unit is installed in an unconditioned space such as an attic or crawl space, you must ensure that the area provides sufficient air circulation to prevent moisture collections on the cabinet during high dew point conditions.

### 3. Ductwork





- Install the conditioned air plenum, ducts and air filters (not provided) in accordance with NFPA 90B Standard for the installation of Warm Air Heating and Air-Conditioning Systems (latest edition).
- Air filters must be listed as Class 2 furnace air filters.
- Supply and return ductwork must be adequately sized to meet the system's air requirements and static pressure capabilities. Ductwork should be insulated with a minimum of 1" thick insulation with a vapor barrier in conditioned areas or 2" minimum in unconditioned areas.
- If installing the blower section without an evaporator coil, the supply plenum should be the same size as the flanged opening provided around the blower outlet and should extend ideally at least 3 ft. from the blower section before turning or branching off plenum into duct runs. The plenum forms an extension of the blower housing and minimizes air expansion losses from the blower.

## INSTALLATION INSTRUCTIONS CONT.

### 4. Blower

This unit is supplied with a 5 speed ECM motor which can achieve various air flows. The unit is shipped with factory set speeds for heating and cooling. Additional air flow data is provided, be sure to check the air flow and temperature drop across the evaporator coil to ensure sufficient air flow.

### 5. Wiring

WARNING 	
<b>Electrical Shock</b>	
Disconnect power before servicing.	
Replace all parts and panels before operating.	
Electrically ground the unit.	
Connect ground <b>wire to</b> ground terminal marked  .	
Failure to do so can result in death or electrical shock.	
<b>Explosion Hazard</b>	
Keep flammable materials and vapors, such as gasoline, away from this unit.	
Failure to follow these instructions can result in death, explosion or fire.	

**NOTE:** Use copper conductors only.


- All field wiring must be done in accordance with National Electrical Code, applicable requirements of UL and local codes, where applicable.
- Electrical wiring, disconnect means and over-current protection are to be supplied by the installer. Refer to the blower section rating plate for maximum over-current protection, minimum circuit ampacity, as well as operating voltage.
- The power supply must be sized and protected according to the specifications supplied on the product.
- This blower section is factory-configured for 120 Volts, single phase, 60 Hz.
- Refer to the instructions provided with the accessory for proper installation.

### 6. Air Filter

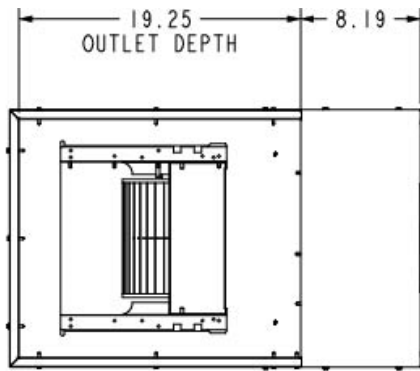
An air filter must be installed before air enters the blower section to protect the blower and other internal parts from excessive dirt and dust.

### 7. Maintenance

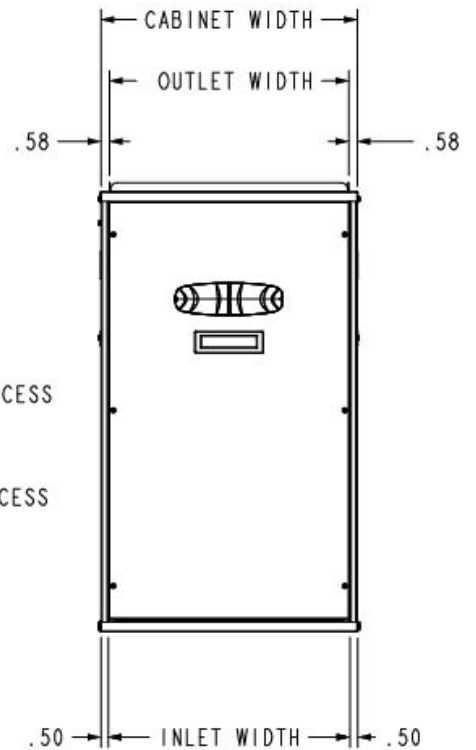
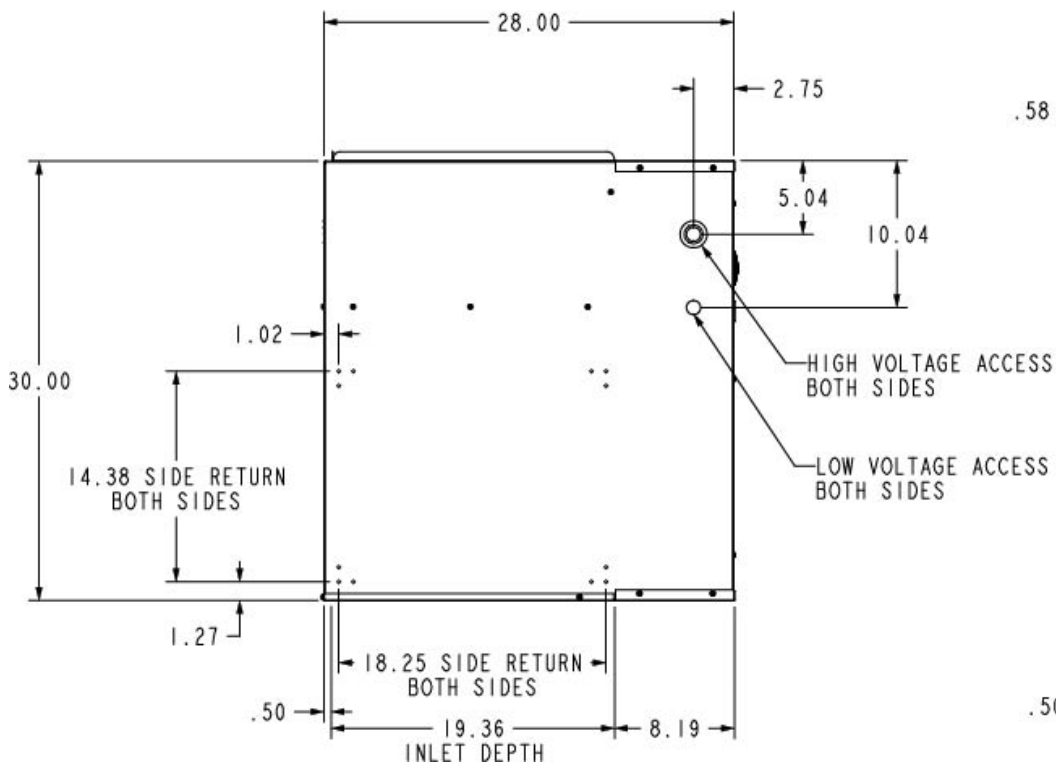
The system's air filter(s) should be inspected, cleaned, or replaced at least monthly. Make certain that the access panels are replaced and secured properly before placing the unit back in operation. Periodic maintenance should be scheduled and conducted by a trained professional. This service should be conducted annually.

Notice 	
This unit is a PARTIAL UNIT AIR CONDITIONER, complying with PARTIAL UNIT requirements of this Standard, and must only be connected to other units that have been confirmed as complying to corresponding PARTIAL UNIT requirements of this Standard, UL 60335-2-40/CSA C22.2 No. 60335-2-40, or UL 1995/CSA C22.2 No 236.	

# DIMENSIONS



MODEL	CABINET WIDTH	INLET WIDTH	OUTLET WIDTH
AEF3A*	14.25"	13.25"	13.09"
AEF4B*	17.50"	16.50"	16.34"
AEF5C*	21.00"	20.00"	19.84"
AEF5D*	24.50"	23.50"	23.34"



# GENERAL INSTALLATION INSTRUCTIONS

For ease of installation, it is best to make any necessary coil configuration changes before connecting the blower section to the coil.

## Upflow Installations

1. For bottom return, remove the bottom block off plate.
2. For side return, cut and remove the side return panel ( left or right side, depending on application). Use the provided corner indentions as a guide.
3. Place the evaporator coil on top of the blower section and secure with sheet metal screws through the blower section flanges.
4. Seal per local codes and requirements.

## Downflow Installations

1. For top return, remove the bottom block off plate.
2. For side return, cut and remove the side return panel ( left or right side, depending on application). Use the provided corner indentions as a guide.
3. Remove Styrofoam blower support block.
4. Flip the blower section upside down and place on top on the evaporator coil. If installing with a standard cased coil, flange removal or modification may be required to the coil case.
5. Secure the blower section to the coil case with sheet metal screws through the blower section flanges.
6. Remove the blower section door, rotate 180 degrees, and reinstall.

### Upflow Installation



### Downflow Installation



# GENERAL INSTALLATION INSTRUCTIONS

## Horizontal Installations

Horizontal Installations can be left-hand or right-hand air supplied. Adequate support must be provided to ensure cabinet integrity. Ensure that there is adequate room to remove service and access panels if installing in the horizontal position. Refer to instructions provided with coil for proper horizontal installations.

### IMPORTANT:

- Refer to the instructions provided with the coil being used to determine how the secondary drain should be trapped and piped.
- When an evaporator coil is installed in an attic or above a finished ceiling, an auxiliary drain pan should be provided under the blower section and coil as specified by most local building codes.

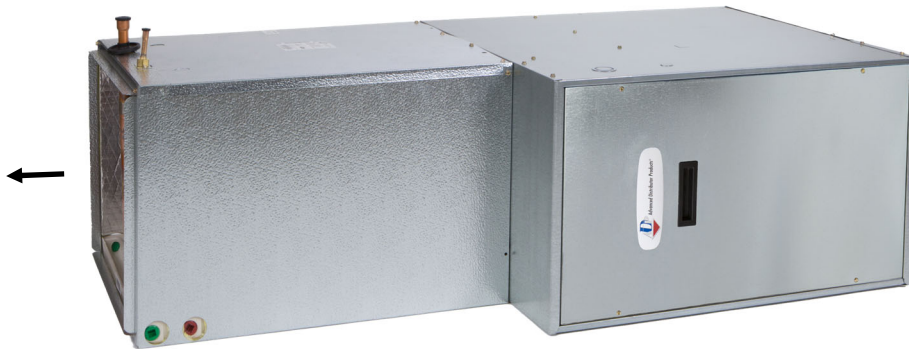
## Suspended Cabinet Installation

**NOTE:** The Blower section must be positioned with one side parallel to the floor when in the horizontal position.

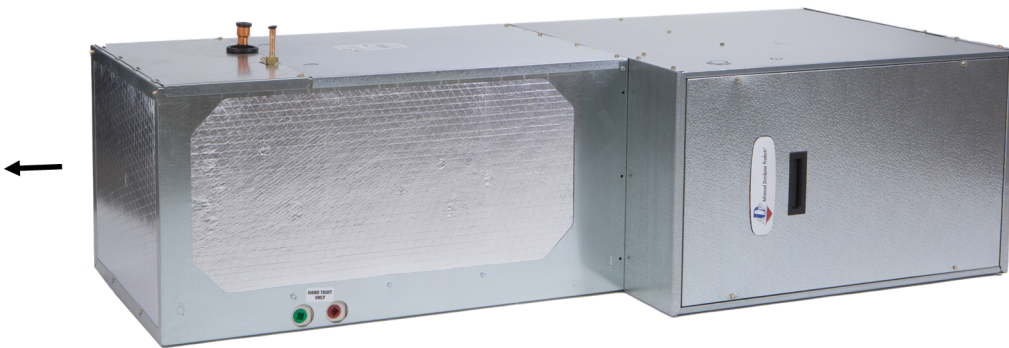
The suspending means must be field fabricated, and should consist of a minimum of two “cradles” made by attaching two 3/8” all thread rods to a length 1-5/8” x 7/8” unistrut. Cradles should not interfere with panel removal, drain connections, or refrigerant connections.

1. Remove the bottom block off plate and styrofoam support block.
2. Position the blower section up against the coil opening.
3. Attach the evaporator coil by screwing the coil cabinet into the blower section flanges.

### Horizontal installation with a dedicated horizontal coil



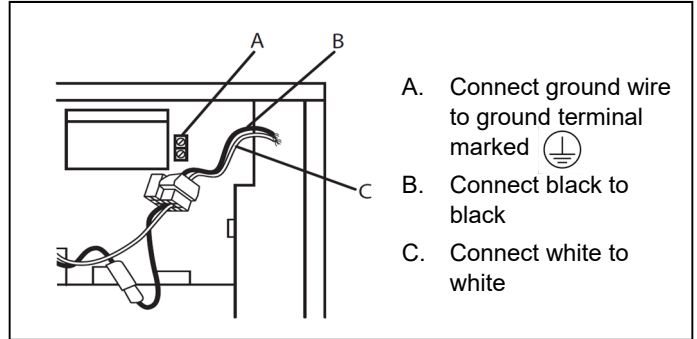
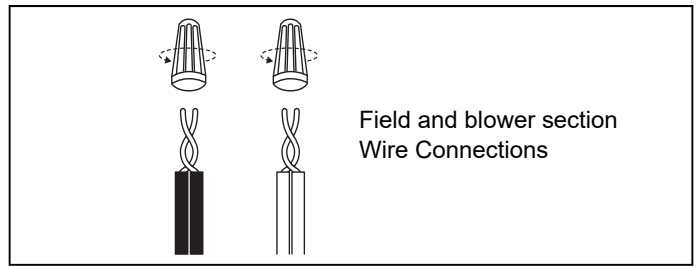
### Horizontal installation with a plenum coil



# MAKE ELECTRICAL CONNECTIONS

## 120 Volt Installations

1. Disconnect all power supplies.
2. Remove the access panel.
3. Route the field supply wires into the unit
4. Connect the field supply wires (black to black and white to white)
5. Connect ground wire to ground terminal marked "GRD."
6. Replace the access panel.



**Caution**

In order to avoid a hazard due to inadvertent resetting of the THERMAL CUT-OUT, this appliance must not be supplied through an external switching device, such as a timer, or connected to a circuit that is regularly switched on and off by the utility.

**WARNING**

**Electrical Shock**

Disconnect power before servicing.

Replace all parts and panels before operating.

Electrically ground the unit.

Connect ground wire to ground terminal marked .

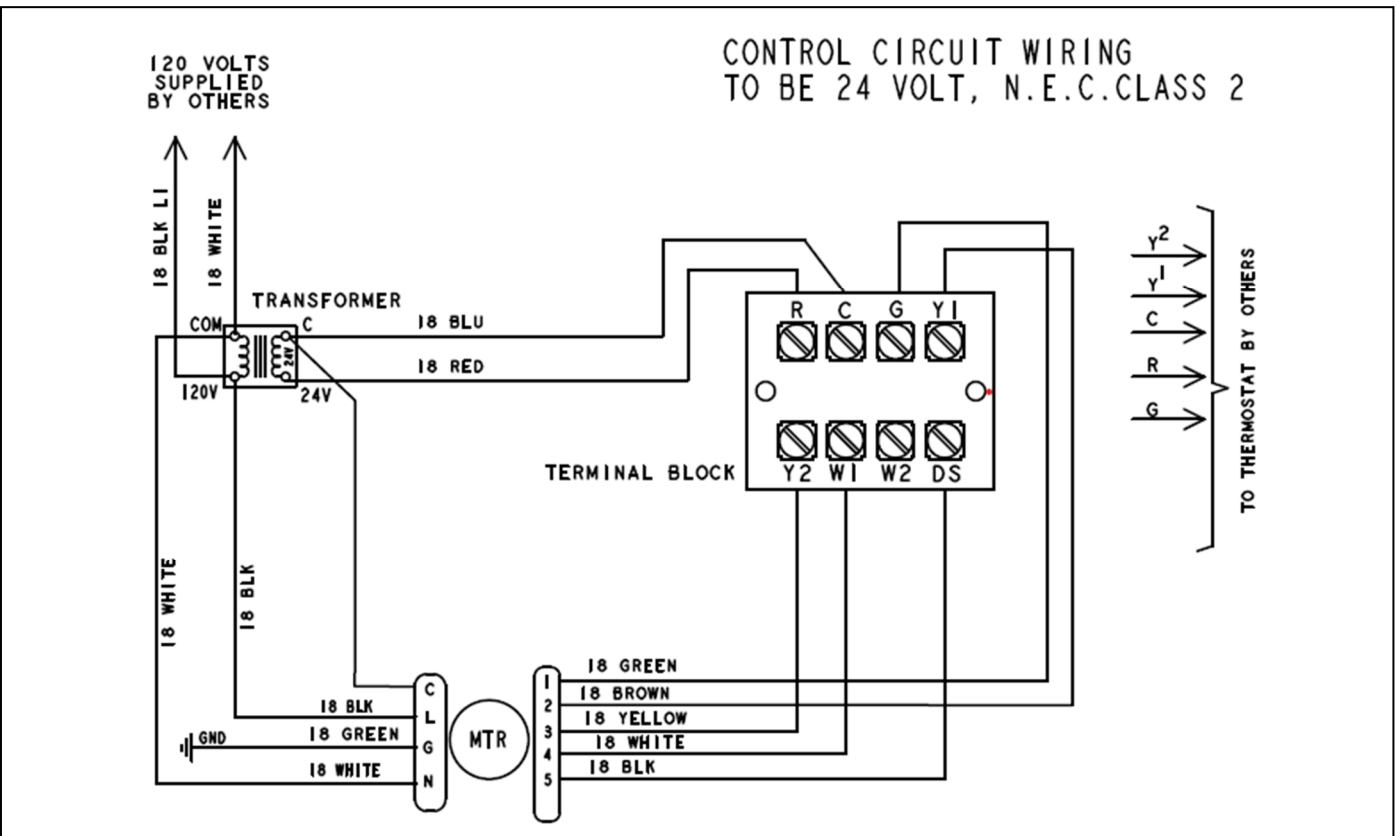
Failure to do so can result in death or electrical shock.

**Explosion Hazard**

Keep flammable materials and vapors, such as gasoline, away from this unit.

Failure to follow these instructions can result in death, explosion or fire.

## WIRING DIAGRAM

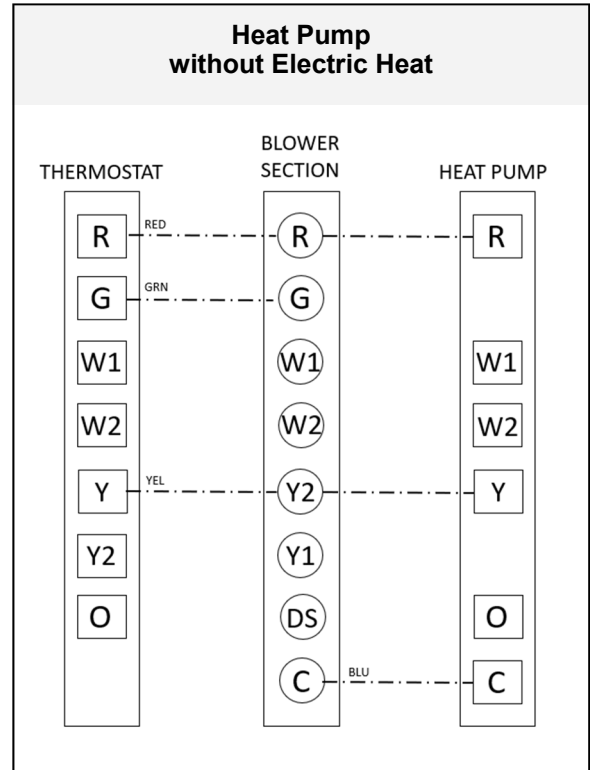
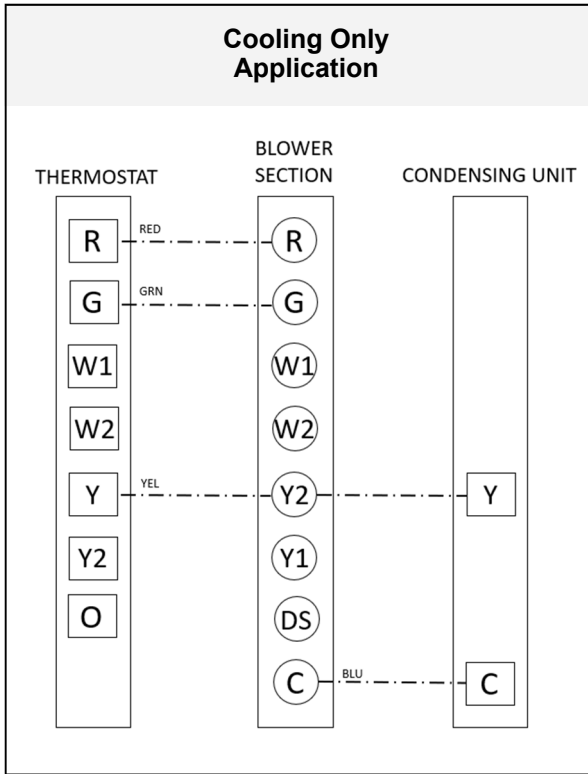




# THERMOSTAT CONNECTIONS

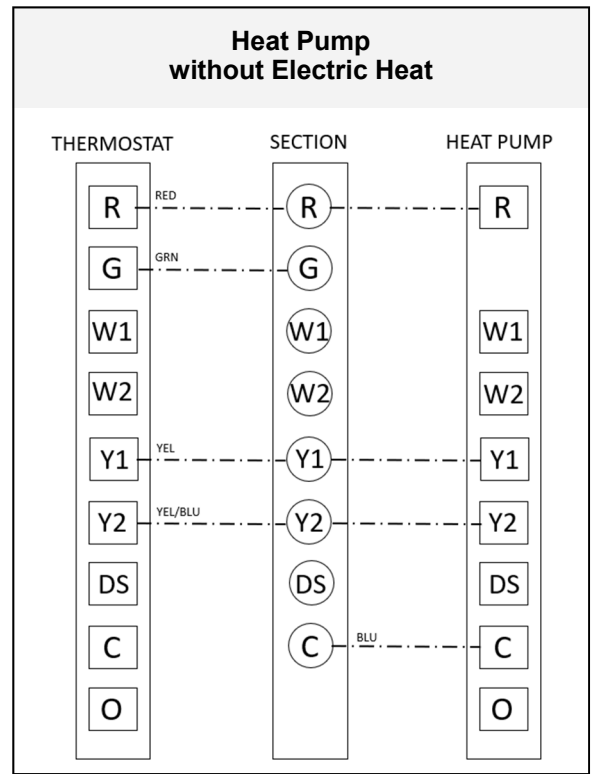
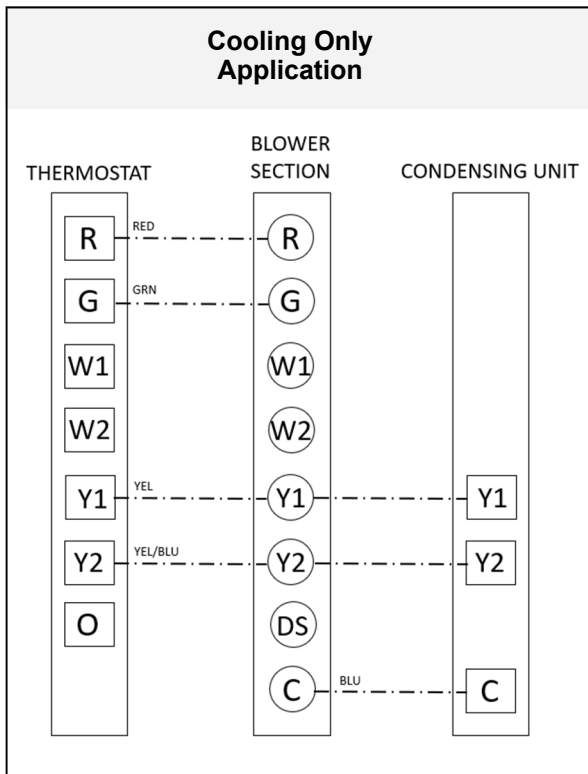
## Typical 1– Stage Thermostat Connections

Maximum allowable current draw from power-stealing thermostats or other accessories is 18 mA. Exceeding this value may cause the blower section control board to operate abnormally.



## Typical 2– Stage Thermostat Connections

Maximum allowable current draw from power-stealing thermostats or other accessories is 18 mA. Exceeding this value may cause the blower section control board to operate abnormally.



# COMPLETE INSTALLATION

**NOTE:** Refer to outdoor unit installation instructions for system start-up instructions.

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## PRE-Start Check

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- Is unit properly located, secure, and serviceable?
- Is the ductwork correctly sized, run, taped, and insulated?
- Have all cabinet openings and wiring been sealed?
- Is the wiring neat, correct, and in accordance with the wiring diagram?
- Is the unit properly grounded?
- Is the thermostat correctly wired and in a good location?
- Is the access panel in place and secure?

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## Check Blower Operation

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1. Set the thermostat to FAN ON.
2. The indoor blower should come on.

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## Check / Change Airflow

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- The blower section is equipped with 5 speed taps.
- For proper cooling operation check the evaporator coil recommendations for CFM per Ton.
- Refer to blower performance chart for CFM vs. External Static Pressure.
- To change blower speeds, connect thermostat wiring to desired speed taps.




## WARNING

### Electrical Shock

Disconnect power before servicing.

Replace all parts and panels before operating.

Electrically ground the unit.

Connect ground wire to ground terminal marked .

Failure to do so can result in death or electrical shock.



### Explosion Hazard

Keep flammable materials and vapors, such as gasoline, away from this unit.

Failure to follow these instructions can result in death, explosion or fire.



## Blower Performance

		Airflow (CFM) vs. External Static Pressure (inches W.C.)									
Model	Tap	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
AEFE3A*	1	632	589	542	502	453	386	353	298	263	-
	2	791	751	723	685	647	608	635	596	554	498
	3	968	940	906	882	852	820	869	839	806	773
	4+	1081	1050	1018	994	967	943	1010	981	953	923
	5*	1237	1209	1187	1159	1133	1114	1218	1195	1169	1145
AEFE4B*	1	1037	996	949	904	859	812	815	765	716	656
	2	1240	1198	1156	1119	1078	1039	1064	1025	989	950
	3	1404	1368	1333	1295	1263	1226	1266	1234	1202	1168
	4+	1584	1551	1520	1493	1461	1427	1460	1429	1399	1371
	5*	1689	1661	1631	1599	1568	1543	1564	1533	1502	1471
AEFE5C*	1	1389	1332	1276	1218	1165	1104	1167	1106	1038	962
	2	1567	1516	1462	1415	1360	1305	1372	1316	1259	1207
	3	1950	1906	1866	1839	1795	1749	1820	1781	1741	1698
	4+	1756	1703	1652	1604	1556	1504	1542	1491	1439	1388
	5*	2090	2043	2000	1957	1914	1868	1930	1887	1847	1801
AEFE5D*	1	1401	1346	1286	1221	1164	1104	1138	1088	1033	978
	2	1585	1532	1483	1437	1378	1318	1340	1292	1245	1201
	3	1969	1927	1883	1858	1816	1771	1760	1724	1688	1651
	4+	1798	1751	1706	1663	1616	1564	1544	1504	1460	1416
	5*	2123	2078	2033	1991	1949	1908	1859	1822	1783	1747

### Notes:

1. All data is given while modular blower is operating without a DX coil and without filter.
2. Tap 3 is the factory set cooling speed
3. Speed taps marked with an asterisk (\*) denote highest cooling speed.
4. Speed taps marketed with a plus sign (+) denote highest heating speed.

### Approved field installed duct heaters

Note: Follow heat kit manufacturer's installation instructions.

Model	Heat Kit Part No.
AEFE3A*	Warren - SL10A
AEFE4B*	Warren - SL15A
AEFE5C*	Warren - SL20A
AEFE5D*	Warren - SL20A

## SEQUENCE OF OPERATIONS

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When the thermostat calls for cooling, the circuit between R & Y is completed. This will energize the indoor blower motor and the contactor relay in the outdoor unit, turning on the compressor and condenser fan motor. For heat pump systems; the circuit between R & O or R & B will be completed to energize the reversing valve, switching the outdoor unit to cooling position. Air Handler blower turns off 45 seconds after the colling cycle is satisfied by the thermostat.

## MAINTENANCE

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At the beginning of each cooling season the unit should be serviced by a qualified installer or servicing agency.

## ASSISTANCE OR SERVICE

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If you need further assistance, you may contact us at the address below with any questions or concerns. Please include a day-time phone number in your correspondence.

**Advanced Distributor Products**  
**1995 Air Industrial Park Road**  
**Grenada, MS 38901**

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## ADP LIMITED WARRANTY

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### Term of Warranty

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Advanced Distributor Products (ADP) warrants that products sold shall be of merchantable quality, free of defects in material and workmanship, under normal use and service, for a period of five (5) years from the date of installation, **not** to exceed six (6) years from the date of manufacture subject to the terms of ADP's limited warranty.

For information on this product's warranty, including accessing complete warranty terms, registering for an extended warranty\* or instructions on filing a warranty claim, please go to [www.ADPwarranty.com](http://www.ADPwarranty.com).

*\* In such states or provinces where registration requirements are prohibited, failure to complete registration by the consumer does not diminish his or her warranty rights.*

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### Equipment Information

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Please *complete information below and retain this warranty for records and future reference.*

Unit Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Installing Contractor: \_\_\_\_\_

Installation Date: \_\_\_\_\_

Phone: \_\_\_\_\_

