



**Series 800 Steam Humidifier**

**Installation & Maintenance Instructions**

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**READ AND SAVE THESE INSTRUCTIONS**

## SAFETY CAUTIONS

### CAUTION

#### **ATTENTION INSTALLER**

Read this manual before installing. This product must be installed by qualified HVAC and electrical contractors and in compliance with local, state, federal, and governing codes. Improper installation can cause property damage, severe personal injury, or death as a result of electric shock, burns, or fire.

#### **Read all cautions and instructions.**

Read this manual before performing service or maintenance procedures on any part of the system. Failure to follow all cautions and instructions could produce the hazardous situations described, resulting in property damage, personal injury, or death.

Failure to follow the instructions in this manual can cause moisture to accumulate, which can cause damage to structure and furnishings.

#### **HOT SURFACES AND HOT WATER**

This steam humidification system has extremely hot surfaces. Water in steam canister, steam pipes, and dispersion tube can be as hot as 212°F (100°C). Discharged steam is not visible. Contact with hot surfaces, discharged hot water, or air into which steam has been discharged can cause severe personal injury. To avoid severe burns, follow procedures in this manual when performing service or maintenance procedures on any part of the system.

#### **DISCONNECT ELECTRICAL POWER**

Disconnect electrical power before installing supply wiring or performing service or maintenance procedures on any part of the humidification system. Failure to disconnect electrical power could result in fire, electrical shock, and other hazardous conditions. These hazardous conditions could cause property damage, personal injury, or death.

Contact with energized circuits can cause property damage, severe personal injury, or death as a result of electrical shock or fire. Do not remove access panels unless electrical power is disconnected.

Follow the shutdown procedure in this manual before performing service or maintenance procedures on any part of the system.

#### **ELECTRICAL SHOCK HAZARD**

If the humidifier starts up responding to a call for humidity during maintenance, severe injury or death from electrical shock could occur. Follow the procedures in this manual before performing service or maintenance procedures on this humidifier.

#### **EXCESSIVE SUPPLY WATER PRESSURE**

Supply water pressure greater than 120 psi may cause the humidifier to overflow.

#### **SHARP EDGES**

Sharp edges may cause serious injury from cuts. Use care when cutting plenum openings and handling ductwork.

#### **EXCESS HUMIDITY**

Do not set humidity higher than recommended. Condensation may cause damage to structure and furnishings.

# MATERIALS LIST

## MODELS 800 & 865

### MATERIALS FURNISHED WITH MODEL 800

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Humidifier  
Model 62 Automatic Digital Humidifier Control  
Dispersion tube  
Steam hose (6 feet)  
7/8" I.D. drain tubing (10 feet)  
Hose clamps  
Saddle valve  
Mounting screws

### ADDITIONAL MATERIALS FURNISHED WITH MODEL 865

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Fan Pack (instead of dispersion tube)  
Model 65 Digital humidistat (instead of Model 62 ADHC)  
4 housing mounting screws  
2 tap connectors  
2 wire ties  
2 grille mounting screws  
Neoprene condensation tubing – 3/8" I.D. (10 feet)  
Model 4028 Drain Tee and Trap Assembly

### NOT FURNISHED

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Main power disconnect switch  
Wiring  
1/4" O.D. supply water tubing  
Boards for mounting (if required)

## MODELS 801 & 866

### MATERIALS FURNISHED WITH MODEL 801

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Humidifier  
Dispersion tube  
Steam hose (6 feet)  
7/8" I.D. drain tubing (10 feet)  
Hose clamps  
Saddle Valve  
Mounting Screws

### ADDITIONAL MATERIALS FURNISHED WITH MODEL 866

---

Fan Pack (instead of dispersion tube)  
4 housing mounting screws  
2 tap connectors  
2 wire ties  
2 grille mounting screws  
Neoprene condensation tubing - 3/8" I.D. (10 feet)  
Model 4028 Drain Tee and Trap Assembly

### NOT FURNISHED

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Model 63 Automatic Digital Modulating Control  
Main power disconnect switch  
Wiring  
1/4" O.D. supply water tubing  
Boards for mounting (if required)

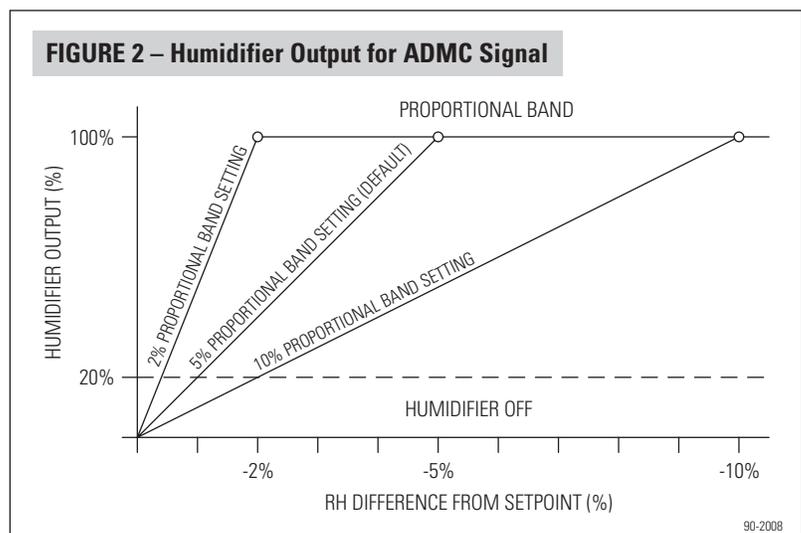
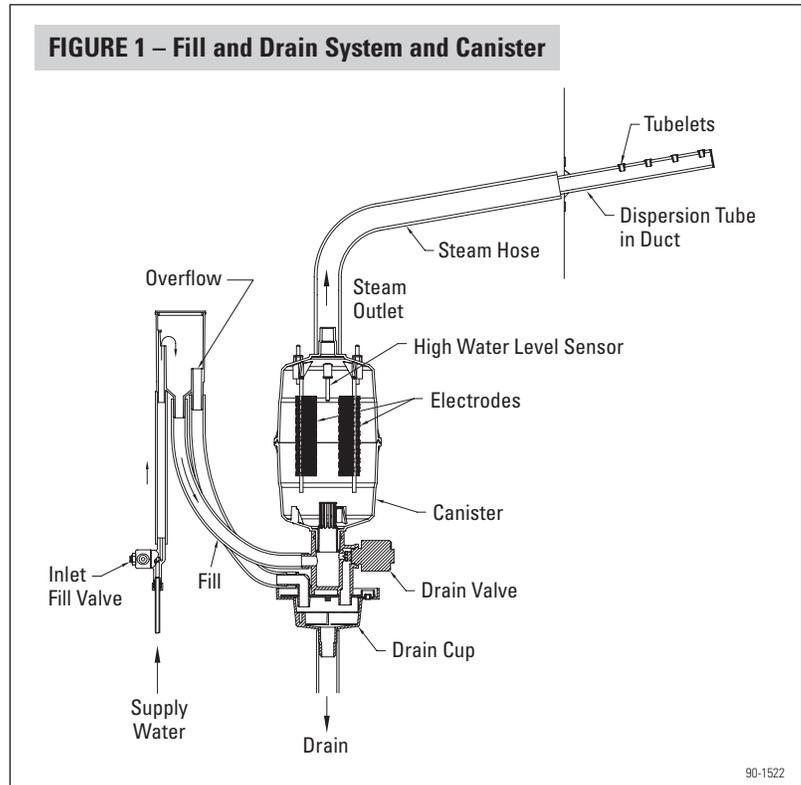
## PRINCIPLES & SEQUENCE OF OPERATION

The Aprilaire® Steam Humidifier delivers humidity in the form of steam to the conditioned space via the HVAC system duct or Fan Pack. The humidifier generates steam by energizing two electrodes that extend into a canister of water. Current flowing between the electrodes causes the water to boil, creating steam. Water is introduced to the humidifier through a fill valve to a fill cup located in the top of the cabinet. The fill cup serves as an overflow reservoir and provides an air gap between the humidifier and water source. The steam canister is filled from the bottom. The canister is seated in a drain cup assembly which includes a drain valve. The drain and fill valves work together to maintain water level in the canister to deliver the rated steam capacity based on the electrical conductivity of the water and to temper drain water. See **Figure 1** for representation of fill and drain system and canister.

To control the Steam Humidifier as part of the HVAC system, the Model 62 Automatic Digital Humidifier Control (ADHC) is installed to detect the RH level in the duct. When the ADHC detects RH below the set point, and the humidifier and HVAC system blower are operating, the humidifier energizes the electrodes to provide steam. Steam is delivered into the duct work via the steam hose and through the dispersion tube. The dispersion tube is fitted with opening called "Tubelets™". The design of the dispersion tube and Tubelets distribute steam over a wide area in the duct and direct any condensed moisture back into the steam hose. The blower activation function on the ADHC allows the control to turn on the HVAC system blower to maintain the proper RH level even when the furnace or air handler is in stand-by mode. See ADHC installation manual.

Humidity can be distributed directly into the living space via the Fan Pack. When the Model 65 Manual Digital Humidistat detects RH below the set point, the humidifier energizes the electrodes to provide steam via the steam manifold at the bottom of the Fan Pack. Steam is dispersed by the fan located behind the grille above the steam manifold. The fan will operate for two minutes after the call for humidity ends, to disperse any residual steam.

To provide precise control to the Modulating Steam Humidifier, the Automatic Digital Modulating Control (ADMC) should be installed in the living space. The ADCM will vary the Modulating Steam Humidifier output based on the difference between set point and actual RH. The ADCM sends a proportional signal to the Modulating Steam Humidifier providing precise control of living space humidity. See **Figure 2** for steam humidifier output vs RH demand. The ADCM can be used in place of the ADHC and Manual Digital Humidistat to provide On/Off control to the Steam Humidifier not equipped with the modulating feature. See the ADCM installation and operating manual for details.



## SPECIFICATIONS & DIMENSIONS

This humidifier is able to produce steam at various capacities depending on the voltage and current applied. The unit can be wired to use an input voltage of 120, 208 or 240 Volts and input amperage can be set to 11.5 or 16.0 amps by changing a dip switch on the control circuit board (see the Electrical Power Wiring & Shut Off Switch section on page 15). Configure the unit appropriately for the application (see **Table 1** for capacity specifications).

<b>TABLE 1 – Humidifier Capacities and Recommended Home Sizes</b>					
<b>Amperage</b>	<b>Voltage</b>	<b>Maximum steam capacity (gal/day)</b>	<b>Maximum recommended home size in ft<sup>2</sup>*</b>		
			<b>Tight</b>	<b>Average</b>	<b>Loose</b>
11.5	120V	11.5	2,500 sq ft	1,500 sq ft	1,000 sq ft
	208V	20.5	4,500 sq ft	2,500 sq ft	1,500 sq ft
	240V	23.3			
16.0	120V	16.0	3,500 sq ft	2,000 sq ft	1,500 sq ft
	208V	30.0	6,000 sq ft	4,000 sq ft	2,500 sq ft
	240V	34.6			

\*Assumes 8 ft ceiling height, adjust as necessary for higher ceilings. For homes with multiple furnaces/air handlers a humidifier should be installed on each.

**Model 800 Shipping Weight:** 28 lbs

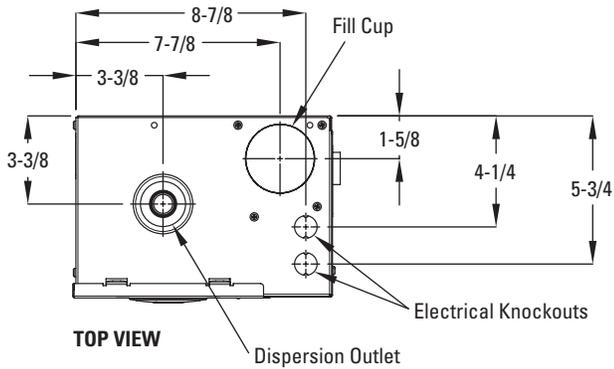
**Model 865 Shipping Weight:** 39 lbs

**Humidifier Operating Weight:** 23 lbs\*\*

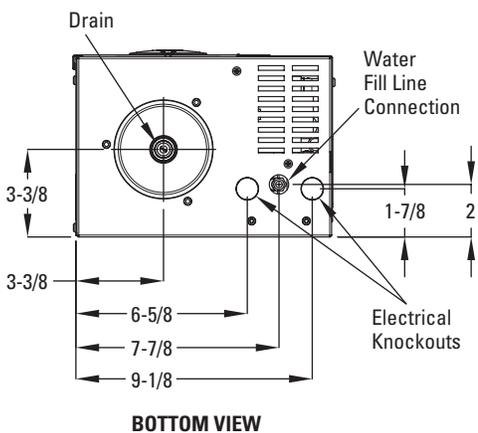
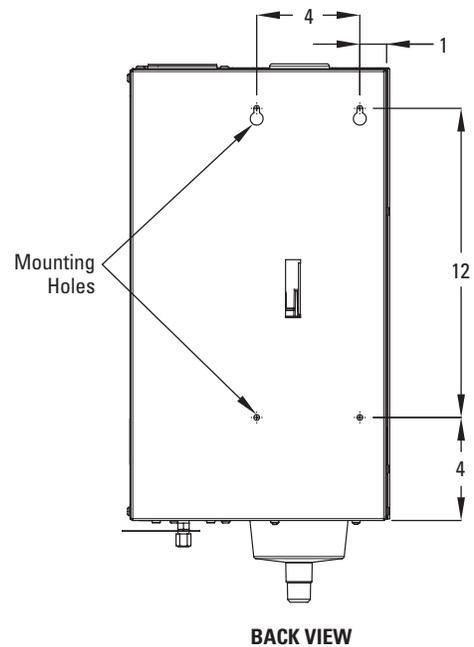
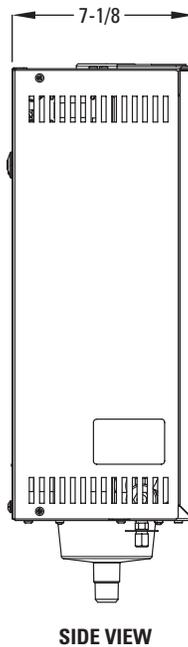
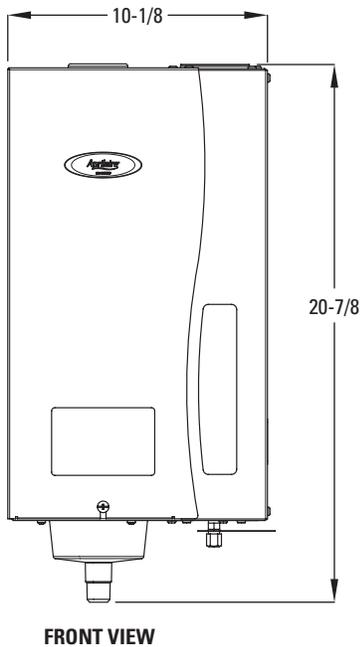
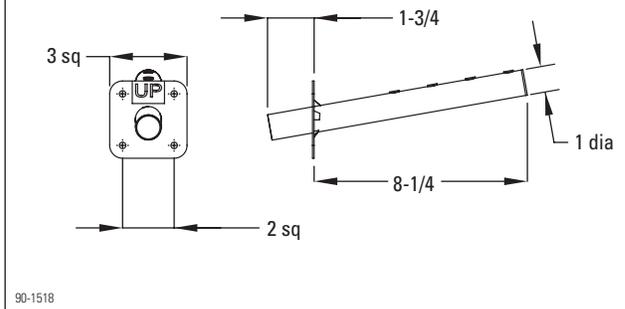
\*\*As minerals precipitate unit weight can increase to approximately 30 lb.

# SPECIFICATIONS & DIMENSIONS (CONTINUED)

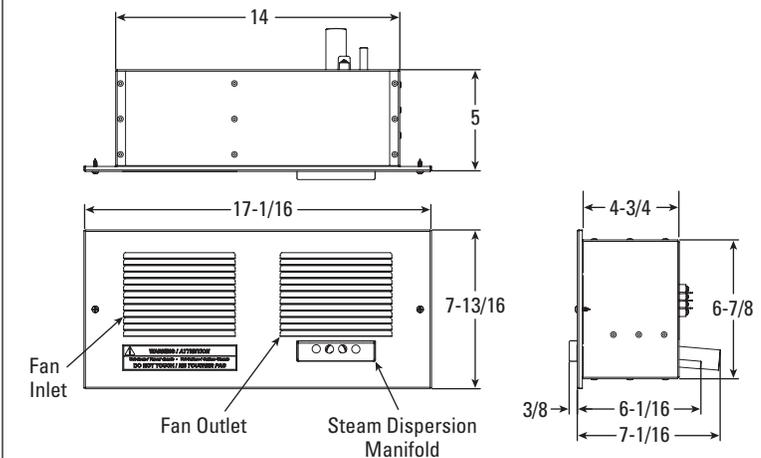
**FIGURE 3 – Humidifier Dimensions (inches)**



**Steam Dispersion Tube**



**Fan Pack**



## SPECIFICATIONS & DIMENSIONS (CONTINUED)

### WATER QUALITY

Minerals that are naturally found in water cause the water to be electrically conductive. Water conductivity is measured in micro Siemens per centimeter (uS/cm). Mineral content, also described as “water hardness” is usually measured in grains per gallon. Because of the variety of minerals that are found in water, there is no direct correlation between water hardness and conductivity, but generally the higher the mineral content, the higher the conductivity.

The Steam Humidifier is designed to operate on water with conductivity between 125 and 1,250 uS/cm. This correlates loosely with water with hardness between 3 and 36 grains/gallon. Water that is considered “hard” and also softened water work well in the Steam Humidifier. The humidifier will make steam when plumbed to low-conductivity water but it takes longer to reach nominal capacity.

**With low conductivity water, it may take the Steam Humidifier one week or more of operation to reach rated capacity, especially if it is wired to operate on 120 volts. When operating on 208/240 volts, the Steam Humidifier usually will reach nominal capacity within a few hours, even with lower conductivity water.**

As water in the canister boils and turns into steam, minerals are left behind. Minerals remaining in solution increase the conductivity of the water. Minerals also deposit onto the submerged portions of the electrodes rendering those areas ineffective. As this occurs, the level of water in the canister rises to expose uncoated electrode surface.

There are benefits and trade-offs to consider when the application allows a choice between hard and softened water:

**Hard water:** The benefit of hard water is less frequent draining and filling than with soft water, which results in better energy and water efficiency and more consistent steam output. However, canister replacement could be more frequent with hard water, because mineral deposits coat the electrodes. The harder the water, the more frequent the need for a new canister.

**Softened water:** The benefit of softened water is longer canister life (depending on water chemistry) than with hard water, because softened water does not coat the electrodes nearly as much as hard water. However, softened water ions stay in solution to much higher concentrations than hard water ions. This requires more frequent draining and filling, which results in lower energy efficiency, higher water consumption and less consistent steam output.

TABLE 2 – Water Quality Guidelines				
Conductivity (uS/cm) of water connected to humidifier	Estimated grains/gallon (prior to any water softening)	Hardness (prior to any water softening)	Canister behavior	Solution
0-125	0-3	Naturally Soft	Humidifier does not function.	Installation not recommended.
125-300	3-9	Naturally Soft	Long start up time.	Power with 208/240VAC, use constant fan to decrease time to reach full capacity.
300-500	9-15	Slightly Hard	Optimal performance range.	Use either hard or softened water.
500-640	15-20	Moderately Hard		
640-840	20-25	Hard		
840-1250	25-36	Very Hard	Shortened canister life due to mineral build up.	Use softened water.
above 1250	36	Extremely Hard	Canister performance degrades quickly.	Installation not recommended.

# INSTALLATION INSTRUCTIONS

**Do not mount humidifier in a location where operating ambient temperatures exceed 104°F or where freezing temperatures may occur.**

## CHOOSING A LOCATION

### DISPERSION TUBE LOCATION

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When choosing a location for the dispersion tube three things must be considered: Location in duct, elevation with respect to the humidifier, and distance from humidifier to dispersion tube.

#### **Duct Location and Absorption Distance**

Absorption distance, the unobstructed straight line distance needed for steam to be fully absorbed, is dependent on air velocity, air temperature and relative humidity in the duct. **Determine absorption distance based on the lowest duct temperature, lowest air velocity and highest humidity that the system will see.** The dispersion tube must be located in a straight section of duct far enough upstream of any obstructions or bends in the duct. Use **Table 3** to determine the appropriate absorption distance.

Operation during AC calls is not recommended because of the potential for condensation in the ductwork. Configure controls to lock out the humidifier during AC calls and use the blower activation feature to allow the humidifier to run with the blower only. Call Aprilaire Tech Support at 1-800-334-6011 for additional information on steam absorption.

The dispersion tube must be mounted with the plate on a vertical surface with the tube angled up as shown in **Figure 8**. The steam tubelets must face up regardless of the airflow direction in the duct. The plate is labeled "UP" to indicate proper orientation. On horizontal duct runs install the dispersion tube low in the duct, on vertical runs center the tube on the duct.

If the dispersion tube is mounted on insulated ductwork, make sure insulation is not more than 2" thick at tube location to prevent insulation from blocking first steam outlet.

**Note:** If dispersion tubes for two humidifiers are installed in one duct, double the dispersion distances. If three dispersion tubes are installed, triple the dispersion distance. Position dispersion tubes so one does not discharge directly onto another.

## INSTALLATION INSTRUCTIONS (CONTINUED)

### CAUTION

Each humidifier requires its own steam hose and dispersion tube. Do not connect steam hoses from more than one humidifier together. Back-pressure from one humidifier can lower the water level in the canister in the other humidifier and cause operational problems.

Do not install the dispersion tube in a duct with greater than 2 in. wg static pressure. High duct pressure can cause back-pressure in the canister which can result in unstable unit operation.

**TABLE 3 – Absorption Distance (Minimum distance from dispersion tube downstream to any obstruction or bend in duct)**

Humidifier Output (gal/day)	Airflow Velocity*	70°F & 30% RH Setpoint	70°F & 45% RH Setpoint	65°F & 45% RH Setpoint	45°F & 45% RH Setpoint
Up to 16.0	300 fpm	13"	19"	23"	30"
	600 fpm	6"	10"	12"	18"
	1200 fpm	3"	5"	6"	13"
	1800 fpm	2"	3"	4"	10"
20.5 – 25.0	300 fpm	15"	23"	28"	45"
	600 fpm	6"	12"	13"	26"
	1200 fpm	5"	6"	7"	19"
	1800 fpm	3"	4"	5"	16"
25.0 – 35.0	300 fpm	24"	31"	36"	60"
	600 fpm	17"	22"	26"	48"
	1200 fpm	12"	15"	18"	25"
	1800 fpm	10"	13"	15"	20"

\*Velocity in feet per minute = Duct airflow volume in cubic feet per minute / duct area in square feet.

Example: 1,200 cfm through 16" x 12" duct = 1,200/(12 x 16/144 sq. in./sq ft.) = 1,200/1.333 = 900 fpm

## INSTALLATION INSTRUCTIONS (CONTINUED)

### FAN PACK LOCATION

The Fan Pack must be located near the Steam Humidifier to minimize the length of the steam hose. If the Fan Pack is mounted directly above the humidifier, 16" is required for the steam hose to make the bend. See **Figure 4**. **NOTE:** The loop in the condensate hose is required to prevent steam from escaping into the drain.

Condensation running through the steam hose back into the canister may cause a gurgling noise. Install Tee & Trap #4028 (included with Model 865) as shown in **Figure 10** to divert condensation to drain to eliminate the gurgling noise.

Humidity behaves like a gas and under ideal conditions will expand to fill the space. However, air movement due to drafts or as a result of temperature stratification may cause uneven distribution of humidity within the conditioned space. To ensure even RH distribution, install system in a central location. If a central location is not available, it may be necessary to install two systems. Two systems will provide more even RH distribution than one.

To prevent condensation on surfaces and furnishings, install the fan pack so the steam being discharged has enough room to be absorbed into the air before encountering surfaces.

The following guidelines are for a 120V installation in which the unit discharges into a space with 70°F air temperature and 40% RH.

- Allow 4 feet of unobstructed space directly in front of the grille.
- Allow 2 feet on either side of the grille.
- Allow 1-1/2 feet above the grille.

See **Figure 5**.

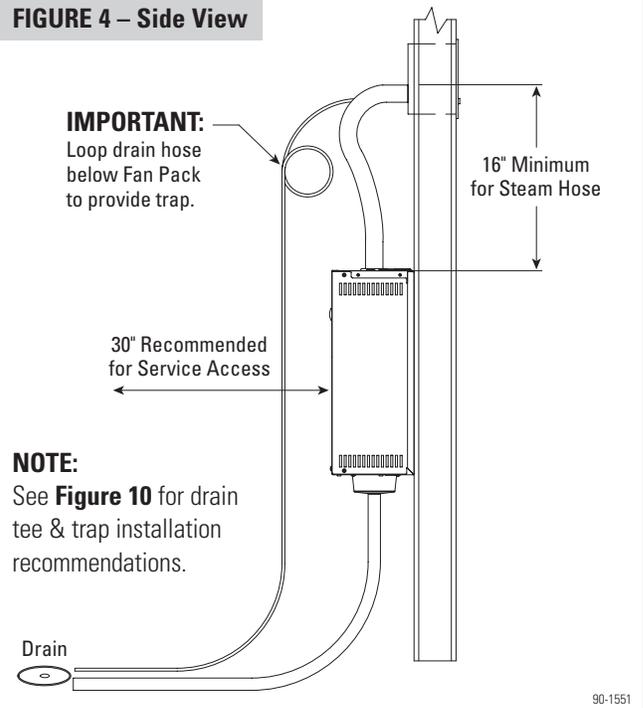
If the Steam Humidifier operates on 240V, allow an additional foot of space between the grille and any obstruction or surface.

If the room temperature is less than 70°F, allow an additional 6" to each distance for every two degree drop in temperature.

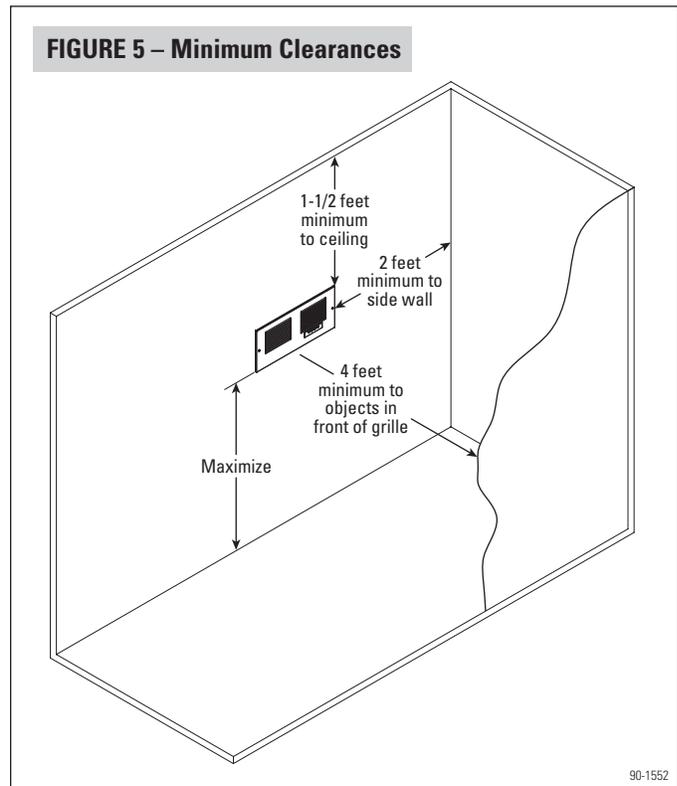
If the RH set point is higher than 45%, allow an additional foot of space between the grille and any obstruction or surface.

Warmer room air temperature and RH below 35% will reduce the amount of unobstructed space required to absorb discharged steam, but the distances provided are recommended minimums.

**FIGURE 4 – Side View**



**FIGURE 5 – Minimum Clearances**



## INSTALLATION INSTRUCTIONS (CONTINUED)

### Mount Fan Pack Housing

The Fan Pack installs between the studs of a standard 16" on-center wall. Drywall on both sides of the wall must be removed for piping and wiring the Fan Pack. To ensure proper operation, the Fan Pack must be mounted level. Use the four 1-1/2" mounting screws provided to attach the housing to the wall studs. See **Figure 6**.

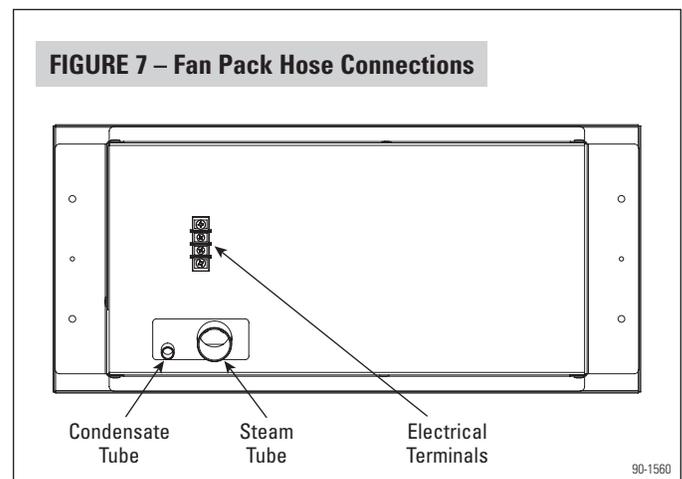
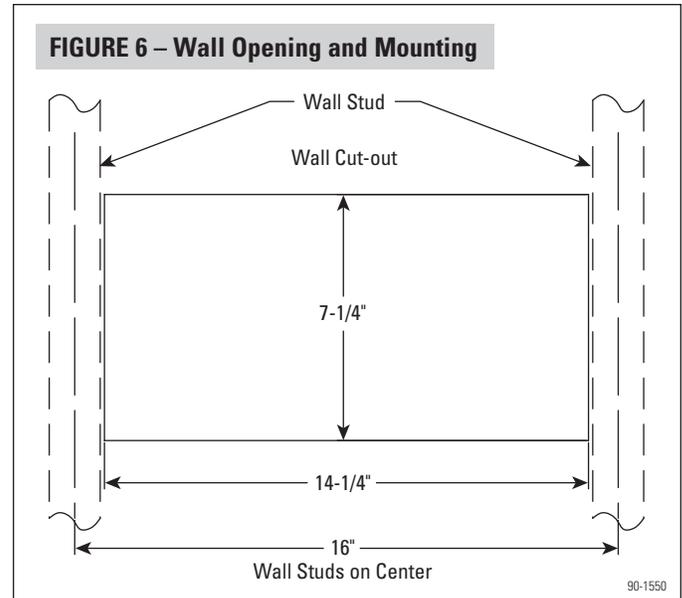
### Grille Installation

Use the two 5/8" screws to attach the Fan Pack grille to the fan housing and drywall. See **Figure 6**. If painting the grille is desired, see a painting professional for acceptable paint products for high temperature (212°F), high humidity environments.

### Fan Pack Hose Connections

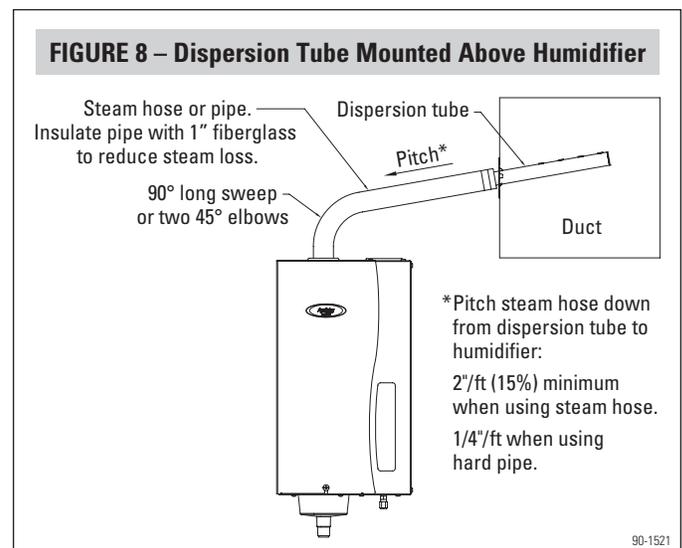
Connect the steam hose to the Fan Pack and use hose clamp to secure. See **Figure 7**. If more than 6 feet is required, use insulated hard pipe as shown in **Figure 11**. See Specifications & Dimensions (page 5) for the affect on capacity. Ensure the trap is filled with water before making steam connections.

Connect 3/8" ID condensate tubing to the Fan Pack and use wire-tie to secure. See **Figure 7**. To create a trap, make a 6" loop in the condensate hose. See **Figure 4**. **NOTE:** The 6" loop must be located below the Fan Pack connection. Do not kink the condensate hose. Use wire ties to secure the loop. The loop is required to prevent steam from escaping into the drain.



### ELEVATION

The preferred location for the dispersion tube/fan pack is higher than the humidifier so that the steam hose has a constant downward slope of at least 2" per foot from the dispersion tube/fan pack to the humidifier. If hard pipe is used, the slope can be 1/4" per foot. With the constant downward slope, any condensation that forms in the steam hose will drain back into the steam canister. See **Figure 8**.



## INSTALLATION INSTRUCTIONS (CONTINUED)

If the dispersion tube must be mounted below the humidifier or if the steam hose needs to run up and over an obstruction, a drip tee with drain trap, Part #4028, must be installed as shown in **Figure 9**. When using a fan pack, install Part #4028 close to the humidifier outlet to help prevent noise from gurgling as shown in **Figure 10**.

### NOTICE

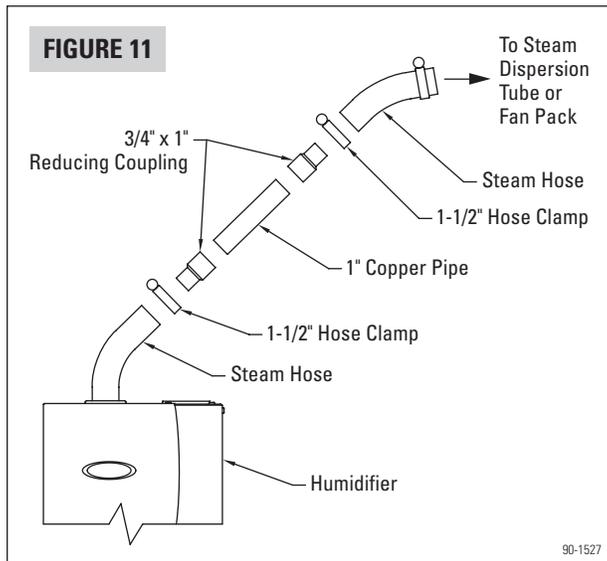
#### CONTROL CONDENSATE FLOW AND COLLECTION.

Failure to follow steam hose recommendations in this manual can result in reduced or erratic performance, increased noise and condensate in the duct.

#### DISTANCE FROM HUMIDIFIER TO DISPERSION TUBE/FAN PACK

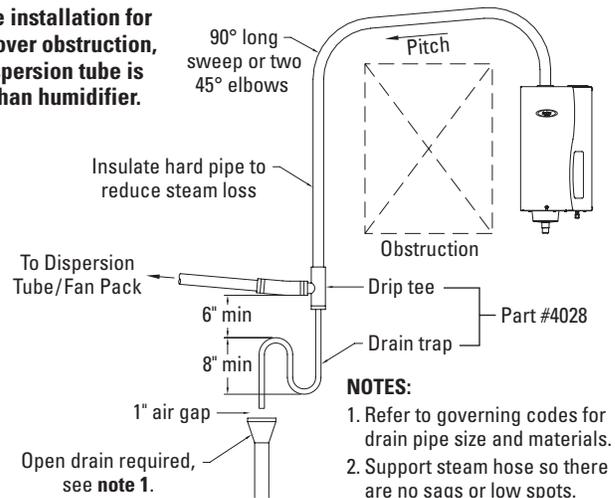
The capacity of the humidifier is reduced by the length of the steam hose or pipe due to condensation. The maximum recommended length of steam hose is 6 feet. Use hard pipe insulated with 1" fiberglass for lengths greater than 6 feet.

**Table 4** provides humidifier capacity with various lengths of steam hose and pipe. If 6-foot steam hose does not reach from humidifier to dispersion tube, splice in 1" copper pipe using 3/4" x 1" reducing couplings as shown in **Figure 11**.

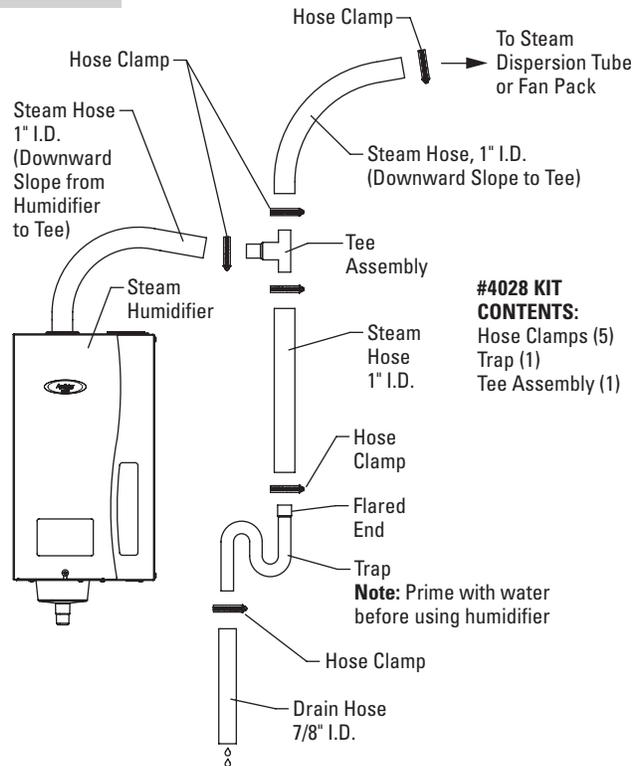


**FIGURE 9 – Dispersion Tube Mounted Below Humidifier**

**Drip tee installation for piping over obstruction, or if dispersion tube is lower than humidifier.**



**FIGURE 10**



# INSTALLATION INSTRUCTIONS (CONTINUED)

**TABLE 4 – Steam Humidifier Capacity in Gallons/Day**

Steam Hose or Insulated Pipe Length	120 Volts				208 Volts				240 Volts			
	11.5 Amps		16.0 Amps		11.5 Amps		16.0 Amps		11.5 Amps		16.0 Amps	
	Steam Hose	Insulated Pipe										
< 2 ft.	11.5	11.5	16.0	16.0	20.5	20.5	30.0	30.0	23.3	23.3	34.6	34.6
2 ft.	11	11	15.5	15.5	20	20	29	29.5	23	23	34	34
4 ft.	10	11	14.5	15.5	19	20	28	29.5	22	23	33	34
6 ft.	9	11	13.5	15	18	20	27	29	21	22	32	33
8 ft.		10		14		19		28		22		33
10 ft.		10		14		19		28		22		33
12 ft.		10		14		19		28		22		33
14 ft.		9		13		18		27		21		32
16 ft.		9		13		18		27		21		32
18 ft.		9		13		18		27		21		32
20 ft.		9		13		18		27		20		31

## HUMIDIFIER LOCATION

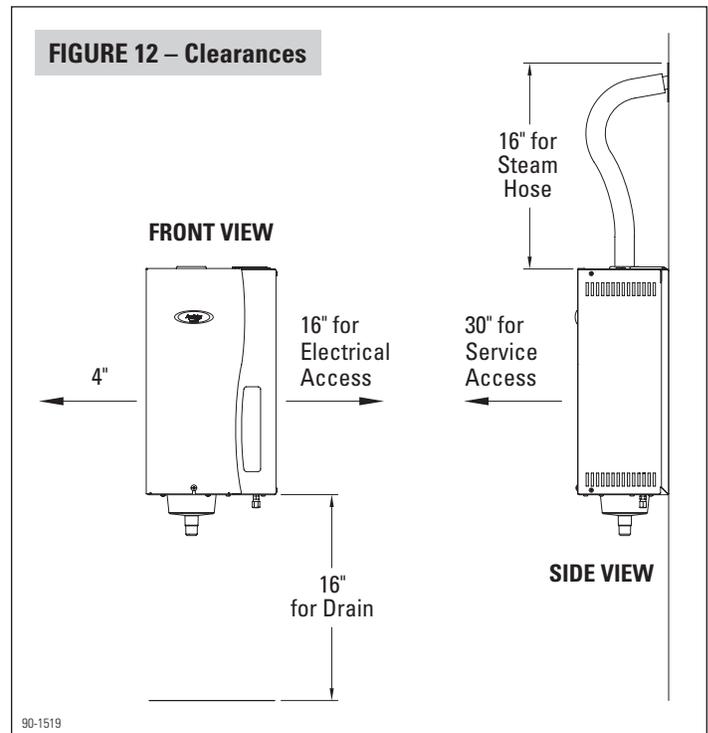
**Do not mount humidifier in a location where ambient temperature exceeds 104°F or where freezing temperatures may occur.** Extreme temperatures may cause the humidifier to leak which can damage furnishings or structure.

Mount humidifier in a location that allows access for servicing, and clearance to remove front panel for replacing the canister and side panel for access to the electrical components during installation. See **Figure 12** for minimum clearances around humidifier.

The humidifier should be mounted as close to the dispersion tube as possible. **Table 4** shows how capacity is reduced as the distance between the humidifier and dispersion tube increases. If the humidifier is mounted on the duct directly below the dispersion tube, allow space for a bend in the steam hose. Allow a minimum of 2" of steam hose to extend straight out of the humidifier before beginning any bends; this will help ensure a tight connection with the top of the canister.

The humidifier can be mounted to a wood surface, or to sheet metal ductwork if it is structurally stable. Do not mount humidifier to fiber duct board. Sound isolation may be desired when mounting to sheet metal ductwork.

The humidifier must be mounted to a vertical surface and must be mounted level in the upright position.



## INSTALLATION INSTRUCTIONS (CONTINUED)

### PREPARE HUMIDIFIER FOR MOUNTING

Unpack carton. Open front panel by removing screw and lifting panel up and away from humidifier. Disconnect three wires from top of canister by pulling straight up. The two large wires are the electrode conductors. The smaller wire is connected to the high water level sensor. Remove canister by pulling it up and out of drain assembly. Remove two screws on right side of humidifier and lift side panel off housing to expose electrical compartment.

### INSTALL STEAM DISPERSION TUBE/FAN PACK

Make sure steam dispersion tube/Fan Pack is mounted higher than the humidifier so that condensation that forms in the steam hose runs back into the canister. If the dispersion tube/Fan Pack cannot be mounted higher than the humidifier or if the steam hose must extend up from the humidifier then down to the dispersion tube due to an obstruction, a drip tee and drain trap system (Part #4028) must be installed as shown in **Figure 9**.

Drill a 1-1/4" diameter hole in a vertical surface of the duct at the location chosen for the dispersion tube. Position the dispersion tube so it is angled up, regardless of airflow direction. UP is stamped on the mounting bracket to aid in proper installation. Secure with four sheet metal screws provided.

### MOUNT HUMIDIFIER

Secure humidifier to sturdy wall using screws provided, or to sheet metal duct. Humidifier initially weighs 23 lbs with a full canister, but will increase in weight over time due to the precipitation of minerals inside the canister. Make sure mounting system will support weight. If mounting to stud frame wall, install two spanner boards to studs and fasten humidifier to spanner boards. Make sure humidifier is mounted plumb.

### INSTALL STEAM HOSE

Six feet of steam hose is provided with the humidifier. If the steam hose must be cut, use a hacksaw. If additional length is required, use 1" O.D. metal or copper pipe. **Do not use PVC pipe for steam line.** Insulate pipe with 1" thick insulation rated for 212°F or higher to reduce steam loss. See **Table 4** for humidifier capacity at various lengths of steam hose and pipe.

Use the steam hose provided. Other hoses may have impurities which can cause foaming in the canister. Foaming can cause water level inaccuracies, reduced steam production and water sputtering into the duct. When using pipe, remove all traces of residual materials used to connect the pipe to prevent foaming.

Verify that the O-ring is in place in the groove in the drain assembly. Dampen the O-ring with water (DO NOT use oil, grease, or any lubricant besides water), then reinsert the canister with the caution label positioned toward the front of the unit.

Attach steam hose to dispersion tube and then to top of canister using hose clamps provided. Make sure steam hose has a constant slope of at least 2" per foot between the dispersion tube and the humidifier. Any and every low spot in the steam hose or pipe must have a drip tee and drain trap. Fill drain trap with water before making final connections. Support the steam hose in multiple locations over its span to prevent sagging.

Attach and fully seat the electrode conductors (interchangeable) and the high water level sensor wire to the top of the canister.

### SUPPLY WATER

Plumb the humidifier to cold, hard or softened water. **Do not use hot water because unheated supply water is used to cool water draining from the humidifier.** Do not use demineralized or reverse osmosis water. For proper operation, supply water pressure must be between 25 psi and 120 psi. Hard or softened water may be used provided it has conductivity between 125 microS/cm and 1250 microS/cm. See **Table 2**.

Supply water piping must be free of oils, lubricants, solder flux and other contaminants, which can cause foaming.

Install the saddle valve according to the instructions printed on the bag. Run 1/4" copper tubing from the saddle valve to the humidifier. Connect it to the fill valve. Double wrench to prevent leaking and damage to valve. Addition of a stainless steel braided water line can help reduce valve noise.

**Note:** Adding an inline particulate filter can increase canister life in areas with high levels of suspended solids. DO NOT use filters that release scale inhibitors, filters of this type can significantly decrease canister life.

## INSTALLATION INSTRUCTIONS (CONTINUED)

### DRAIN LINE

Attach the 7/8" I.D. drain tubing provided to the drain assembly at the bottom of the humidifier. Secure with the hose clamp provided. Do not over tighten.

Make sure the drain line has a constant downward slope from the humidifier to the drain and is not kinked or blocked.

If floor drain is not available, use condensate pump (Part #4856) to route water to a suitable drain. Provide at least 16 inches for of drain line between the Steam Humidifier and the condensate pump.

**Note:** The humidifier uses cold water to temper drain water to less than 140°F.

### ELECTRICAL POWER WIRING & SHUT-OFF SWITCH

#### CAUTION

Only qualified electrical personnel should perform field wiring procedures. Improper wiring or contact with energized circuits can cause property damage or severe personal injury.

All wiring must be installed in accordance with all governing electrical codes and with the wiring diagram provided inside the front panel.

Do not loop power wiring.

Do not use aluminum wire.

A safety grounding system that meets all governing electrical codes is required. The ground connection must be made with solid metal to metal connections. Ground wire must be the same size as the power wiring.

With factory settings, the Steam Humidifier draws 11.5 amps +/- 10%. Use a minimum 20 amp dedicated circuit when installing to operate at 11.5 amps. The Steam Humidifier can be set to draw 16.0 amps +/- 10% by repositioning dip switch #1 on the control circuit board (see **Figure 13**). When set to 16 amps, use a minimum 25 amp dedicated circuit. For both applications, size wire according to local codes.

The Steam Humidifier is shipped from the factory wired for 240 VAC operation, but it can operate on 120, 208 or 240 VAC. **If using 120V or 208V, move the black/white jumper wire to the proper tab on the control circuit board. See Figures 14, 15, 16.**

### WIRING INSTRUCTIONS

Install disconnect switch (not provided) between line power source and humidifier.

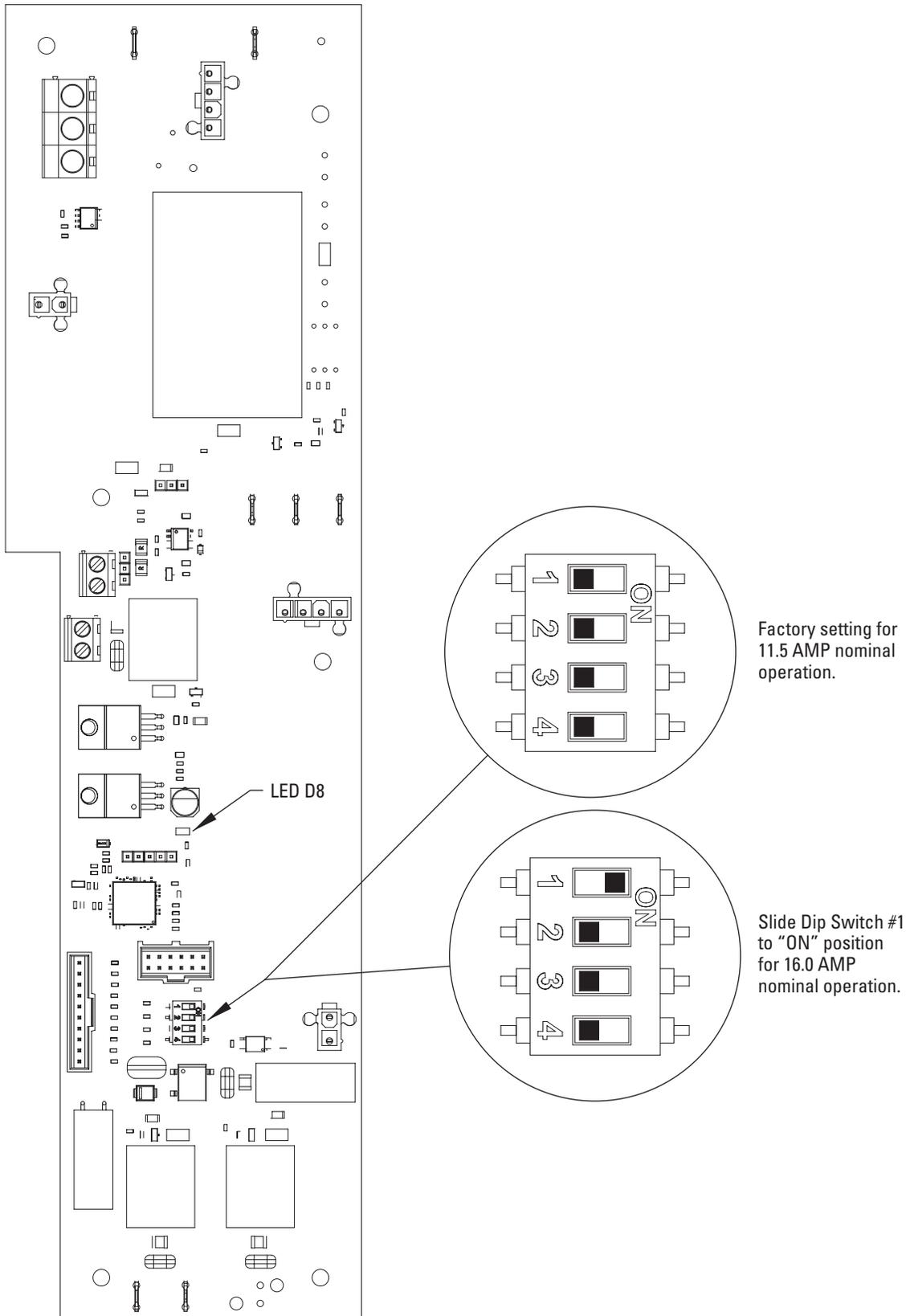
Knock-outs for power wiring and low voltage control circuit wiring are provided.

Connect power and ground wiring as shown in appropriate wiring diagram.

- 240 VAC – **Figure 14**
- 208 VAC – **Figure 15**
- 120 VAC – **Figure 16**

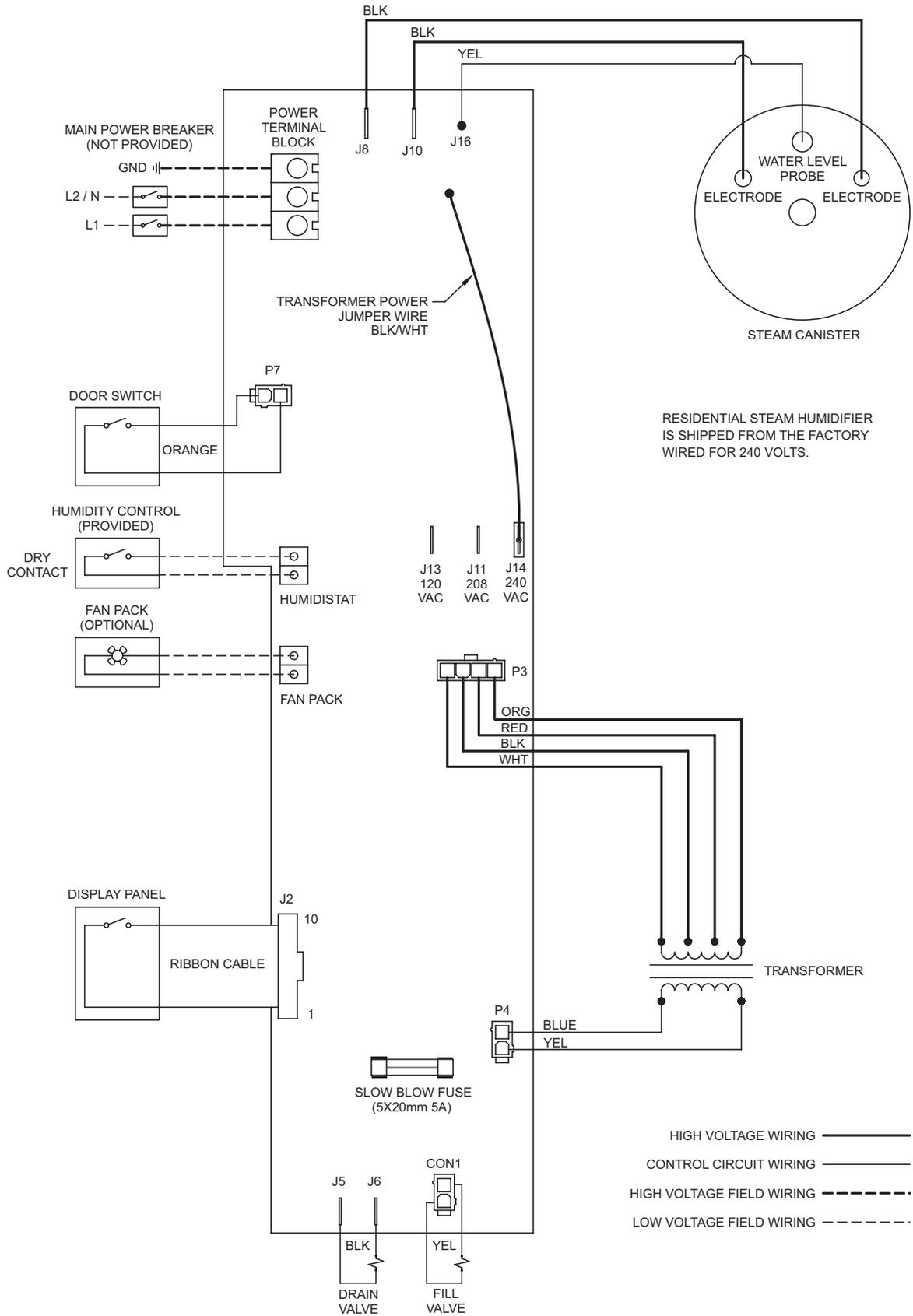
Do not run high voltage power lines over internal circuit boards.

**FIGURE 13 – Control Circuit Board with Dip Switches**



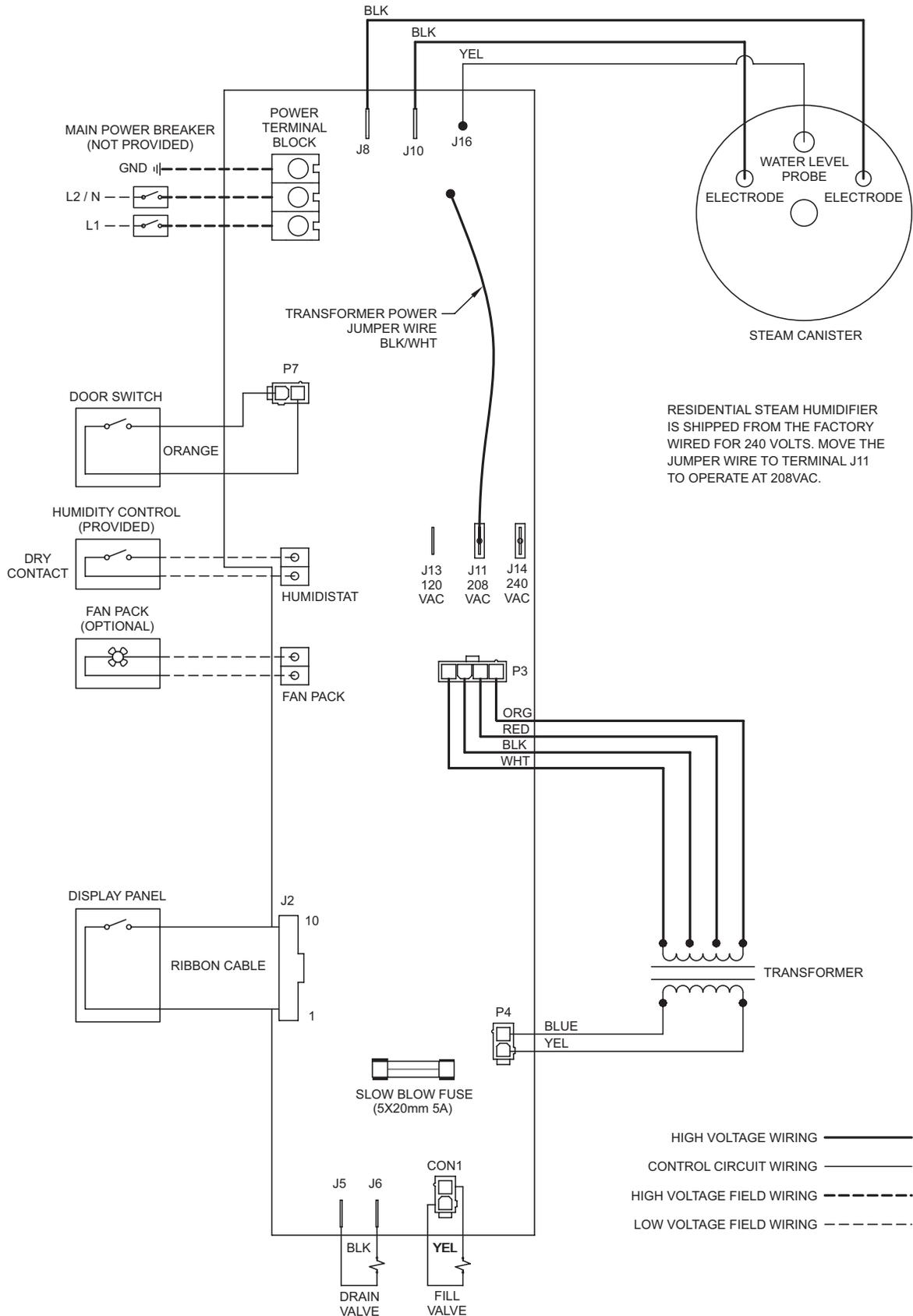
# INSTALLATION INSTRUCTIONS (CONTINUED)

**FIGURE 14 – 240 VAC Wiring Diagram**



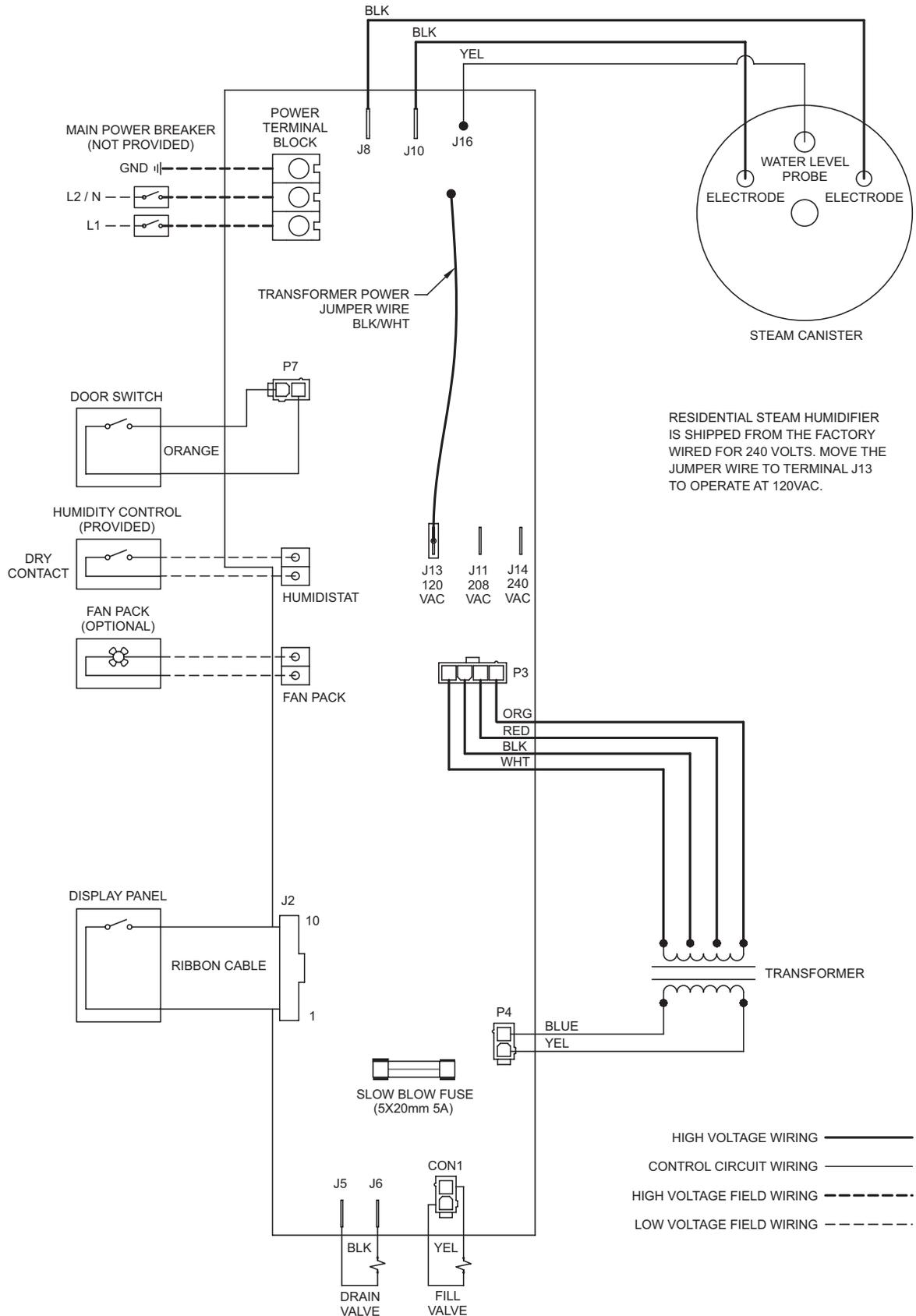
# INSTALLATION INSTRUCTIONS (CONTINUED)

**FIGURE 15 – 208 VAC Wiring Diagram**



# INSTALLATION INSTRUCTIONS (CONTINUED)

**FIGURE 16 – 120 VAC Wiring Diagram**



# INSTALLATION INSTRUCTIONS (CONTINUED)

## AUTOMATIC DIGITAL CONTROL AND ACCESSORY WIRING (MODEL 800)

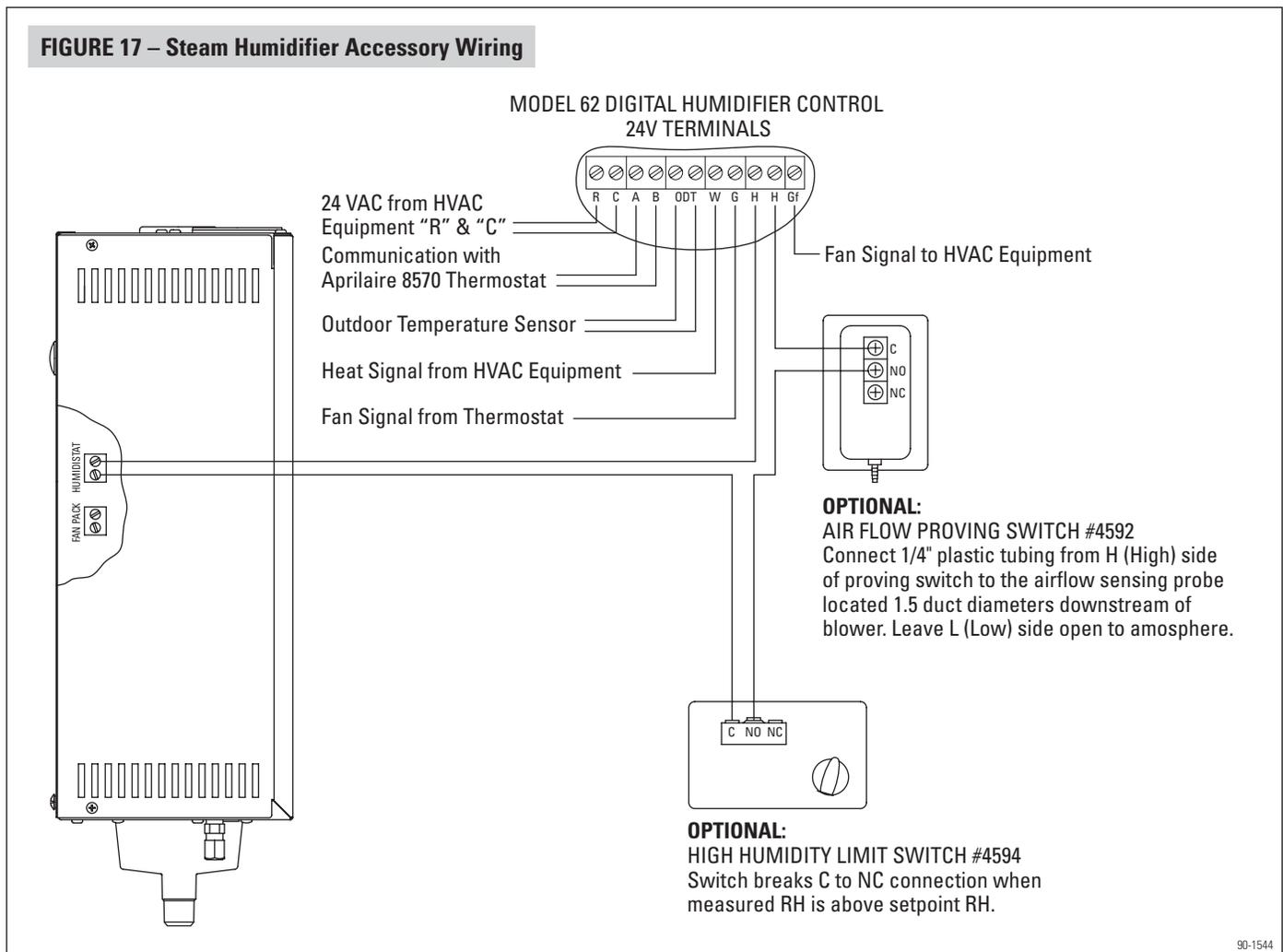
The control circuit operates on 24VAC.

The ADHC (Automatic Digital Humidifier Control) Model 62 must be mounted in the return air duct at least 6" upstream of any fresh air intake ducts or sources of moisture and at least 12" upstream of the steam dispersion tube if it is mounted in the return. Follow instructions provided with the control. Connect "H" terminals on ADHC to "HUMIDISTAT" terminals on humidifier circuit board. The "H" terminals on the Model 62 provide a dry contact switch to energize the humidifier.

If the application requires a wall-mounted humidistat in the conditioned space, use Manual Humidistat Part #4655, Digital Manual Humidistat Part #65, Automatic Digital Modulating Humidistat Part #63 or any Aprilaire thermostat with integrated humidifier control functionality. Use Blower Activation Relay Part #4851 with Aprilaire Manual and Digital Manual Humidistats in order to allow the humidifier to turn on the HVAC system blower when humidity is required.

If protection from over-humidification is desired, install optional high humidity limit switch Part #4594 at least 4 feet downstream of the dispersion tube. If airflow verification is desired, install optional airflow proving switch Part #4592 in duct. The high humidity limit switch and the airflow proving switch are wired in series with the ADHC (humidistat) circuit. See **Figure 17**.

**FIGURE 17 – Steam Humidifier Accessory Wiring**



90-1544

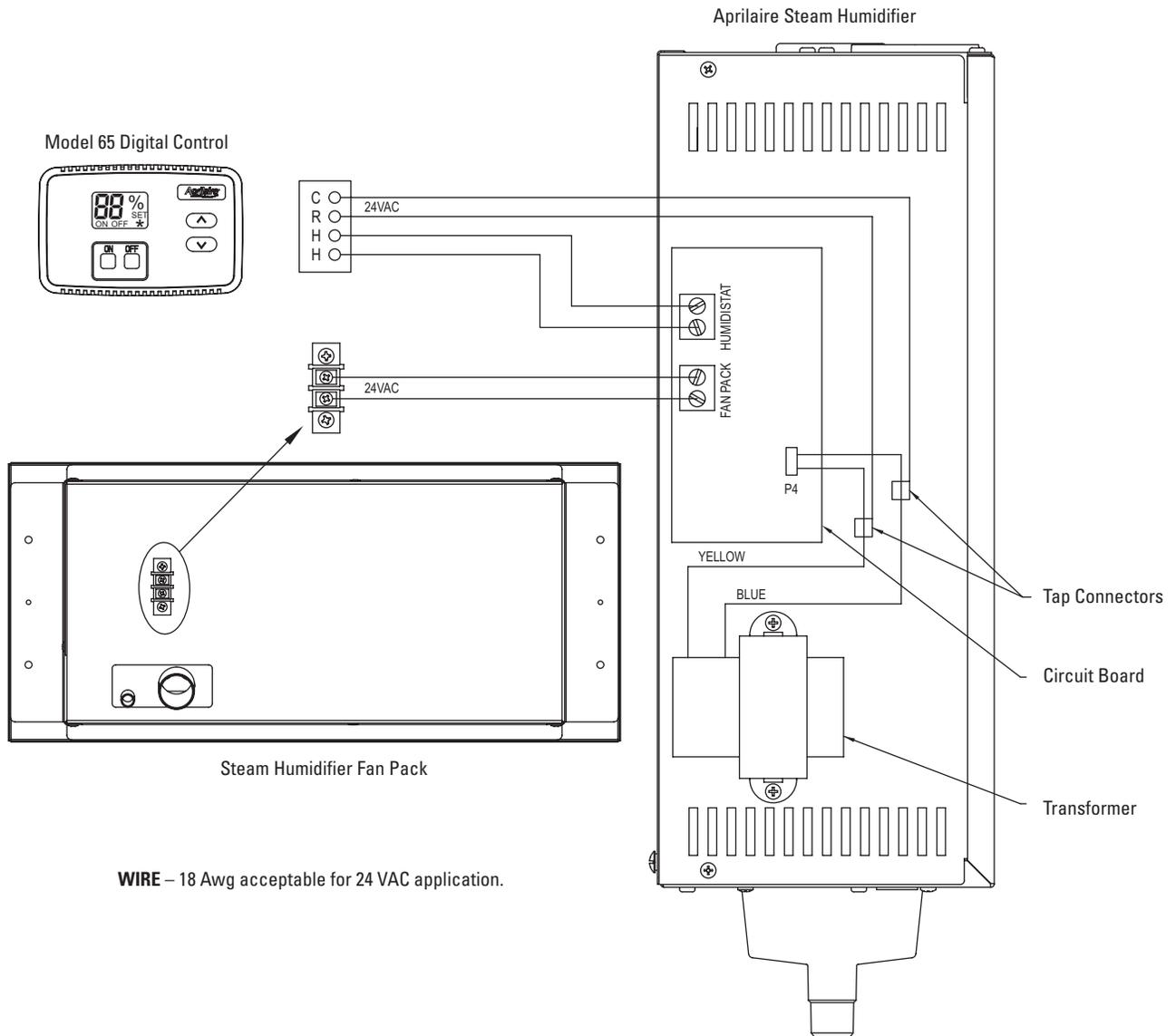
# INSTALLATION INSTRUCTIONS (CONTINUED)

## MANUAL DIGITAL HUMIDISTAT AND FAN PACK WIRING (MODEL 865)

Mount the **Digital Manual Humidistat in the area to be humidified** according to installation instructions included with control. Install the humidistat in the same room or area as the Fan Pack discharge, but at least ten feet away. Wire the Digital Manual Humidistat to the Steam Humidifier using standard 24 volt thermostat wire. See **Figure 18**.

Disconnect all power to Steam Humidifier before wiring the Fan Pack terminals to the FAN PACK terminals on the Steam Humidifier. Use standard 24 volt thermostat wire. See **Figure 18**.

**FIGURE 18 – Wiring Diagram for Manual Humidistat and Fan Pack**



90-1662

# INSTALLATION INSTRUCTIONS (CONTINUED)

## AUTOMATIC DIGITAL MODULATING CONTROL WIRING (MODEL 801 OR 866)

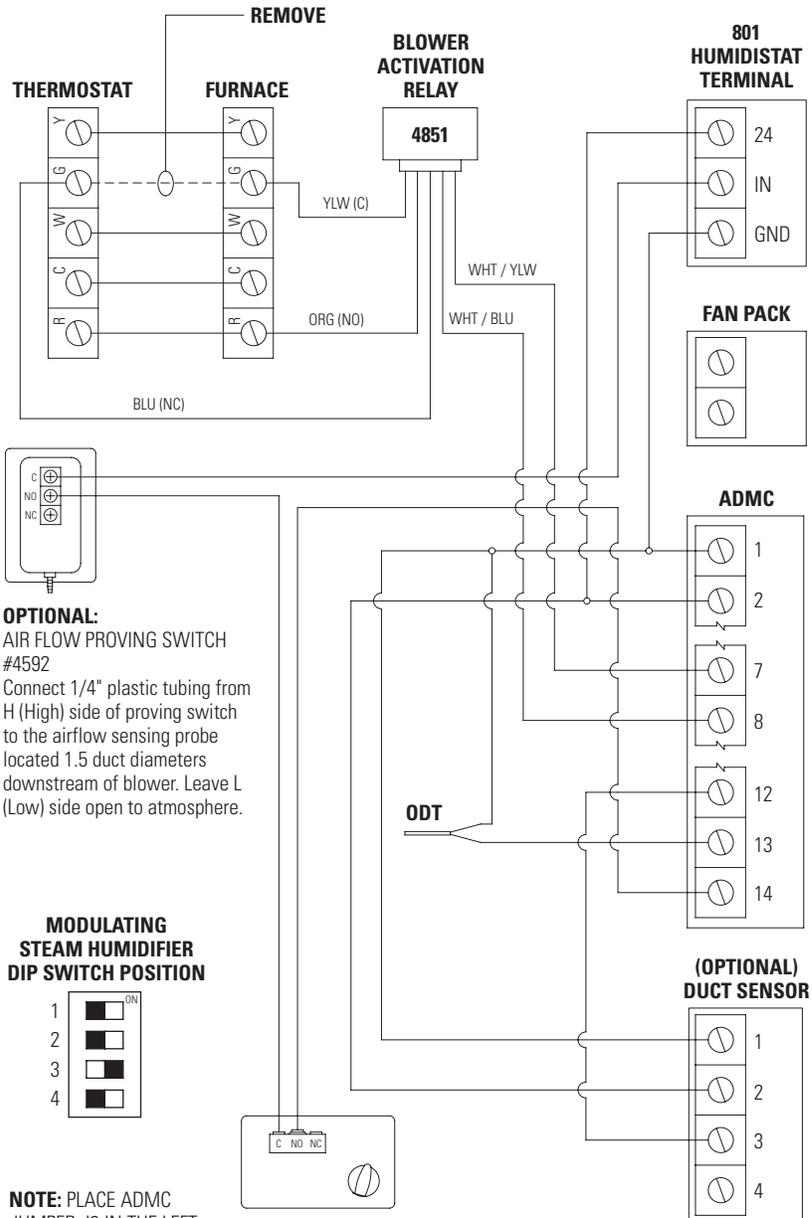
The Automatic Digital Humidifier Control (ADMC) that ships with Model 63 and Model 5558 must be mounted on an interior wall in the living space. Follow instructions provided with the control.

If the ADCM cannot be mounted in the living space, the duct humidity sensor can be used as the primary humidity sensor and the ADCM can be installed in a convenient location. Install the duct humidity sensor in the supply duct at least 6" upstream of any fresh air intake ducts or sources of moisture and at least 12" upstream of the steam dispersion tube. Configure the ADCM to use the duct sensor as primary humidity sensor. See **Program Mode** Step #17 in the ADCM installation manual.

If protection from over-humidification is desired, install the duct humidity sensor in the supply duct at least 4 feet downstream of the dispersion tube. Configure the ADCM to use the duct sensor as a high humidity limit sensor. See **Program Mode** Step #17 in the ADCM installation manual. The ADCM must be installed in the living space. See **Determine Location For Control** section of the ADCM installation manual.

If airflow verification is desired, install optional airflow proving switch Part #4592 in duct and wire in series with the ADCM humidistat circuit. See **Figure 19**.

**FIGURE 19 – ADCM with Model 801**

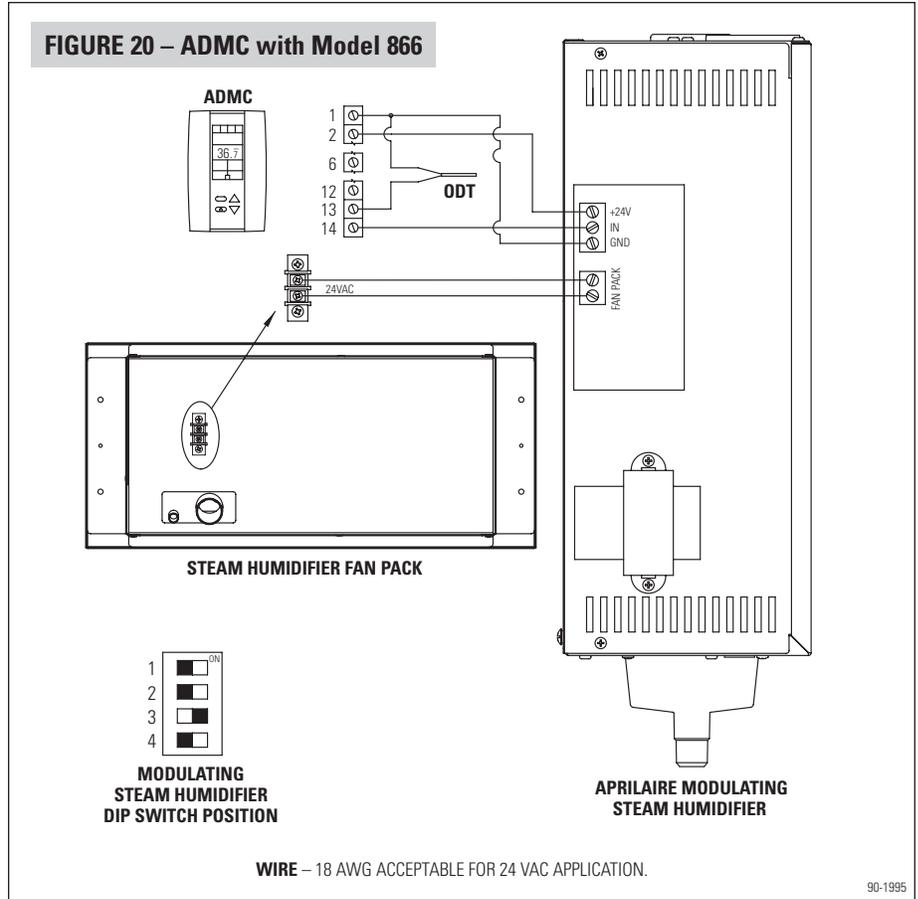


90-1992

# INSTALLATION INSTRUCTIONS (CONTINUED)

When the Modulating Steam Humidifier is installed with the Fan Pack, wire the ADMC as shown in **Figure 20**.

The Aprilaire Automatic Digital Modulating Control is the recommended humidity controller for the Model 801 and Model 866 Modulating Steam Humidifier. However, the Modulating Steam Humidifier can accept a number of different control signals. If using a third party control, configure the Modulating Steam Humidifier internal controller for the third party control signal. See **Figure 21** for configuration options.



**FIGURE 21 – Third Party Control Signals**

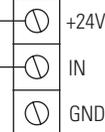
CONTROL DIP SWITCH SETTINGS		
DIP2	DIP3	HUMIDISTAT SIGNAL TYPE
OFF	OFF	ON / OFF
ON	OFF	0-20 VDC
OFF	ON	0-10 VDC or 0-20 mA
ON	ON	2-10 VDC or 4-20 mA

**ON / OFF**



**HUMIDISTAT**

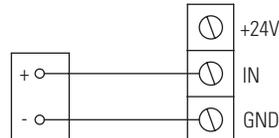
MODULATING STEAM HUMIDIFIER  
HUMIDISTAT TERMINAL



RECOMMEND USING BLOWER ACTIVATION RELAY PART # 4851

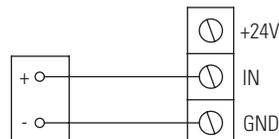
**0-10 VDC, 0-20 VDC OR 2-10 VDC**

MODULATING STEAM HUMIDIFIER  
HUMIDISTAT TERMINAL



**0-20 MA OR 4-10 MA**

MODULATING STEAM HUMIDIFIER  
HUMIDISTAT TERMINAL



## START-UP PROCEDURE

1. Once the supply water, drain, steam hose, electrical power and control wiring connections are complete, make sure canister is fully seated into drain valve and three wire connectors on top of canister are secure. (High water probe wire and two interchangeable electrode wires.)
2. Attach side panel and front door.
3. Open saddle valve allowing water to flow to humidifier. Check for leaks.
4. Turn Automatic Digital Control knob to OFF.
5. Close main power switch energizing humidifier.
6. Press On/Off button on humidifier. The On/Off light will illuminate green.
7. Make sure the HVAC blower is operating and adjust the ADHC dial up to initiate a call for humidity. If installed with a Fan Pack, turn On the Model 65 Digital Manual Humidistat. Adjust the humidity set point with the up and down arrows.

**Note:** The ADHC can be placed into TEST mode to force a call for humidity but this only lasts for one minute.

The Steam light will illuminate green indicating a call for humidity and the Fill light will illuminate green indicating the fill valve is open allowing the canister to fill. You should also hear the water flowing. **If water flows down drain while humidifier is filling, check for kinks or obstructions in the fill hose or fill cup and make sure the O-ring in the drain valve is properly seated in the groove and not damaged or deformed.**

8. Once the Fill light turns off, to verify that the humidifier will drain properly, press the On/Off button to turn humidifier off. You may hear the fill valve open allowing cold water to flow into the canister to cool the water in the canister. The Drain light will flash green for 15 seconds then turn green for four minutes while the canister drains. Once the Drain light turns off, the drain cycle is complete.
9. Set ADHC to proper level.
10. Press On/Off button to turn humidifier on.
11. If installed with a Fan Pack, ensure the Fan Pack fan operates.
12. Ensure the steam outlet of the Fan pack is not blocked.

### CAUTION

The front of the Fan Pack will be hot. Steam may not always be visible.  
Do not touch the front of the Fan Pack or place hand in front of the steam discharge manifold.

## OPERATING MODES

When the humidifier is powered and turned on, the "On/Off" light is illuminated green.

During fill cycles, the "Fill" light illuminates green.

When the humidifier is turned on, any time the Humidifier Control sends a call for humidity, the Steam light illuminates green.

Any time the drain valve is activated, the "Drain" light illuminates green.

During initial start up with a new canister, the humidifier may run through a series of fill/drain cycles until the conductivity of the water is in a range that allows the humidifier to generate steam at the rated capacity. If the conductivity of the water is low, it may take a week or more for the humidifier to generate steam at the rated capacity. The rated capacity is achieved when the humidifier is detecting a nominal current of either 11.5 or 16.0 amps between the electrodes. If the humidifier has not reached capacity after 168 hours of operation, the Steam light will illuminate yellow on a call for humidity. The humidifier will continue to operate with a yellow Steam light, and may satisfy the humidity requirements. Once rated capacity is reached, the Steam light will illuminate green.

The internal controller adjusts water level in the canister to maintain the nominal current between the electrodes. As minerals build up on the electrodes, their effectiveness decreases, so the controller will increase the water level to submerge more of the electrode surface. When the water has reached the high level probe in the canister and the internal controller no longer detects nominal current, the Service light will flash red indicating that the canister needs to be replaced.

If the humidifier attempts to drain the canister and cannot, the drain and fill valves will pulse on & off for four seconds to dislodge minerals which may be blocking the drain valve ports. The Drain and Fill lights will flash on & off when this occurs.

Any time power is disconnected or humidifier is turned off, the internal timer for start-up and drain cycles is reset.

If the humidifier has operated 168 hours without a drain cycle, the drain valve will open and drain the canister. Normal operation will continue.

If the humidifier is operating and a power failure occurs, once power is restored, the "On/Off" light will flash green for one minute, then the humidifier will turn on.

## END OF SEASON/PERIOD OF INACTIVITY SHUT-DOWN

The humidifier does not need to be turned off at the end of the humidification season. If 72 hours elapses without receiving a call for humidity, the canister will automatically drain. The Drain light will remain lit for 24 hours. This may also occur during periods of inactivity during the humidification season. The humidifier will resume normal operation when a call for humidity is made.

## SHUT DOWN PROCEDURE

To turn humidifier off, push ON/OFF button once. Humidifier will begin its four-minute drain cycle. Fill valve will open to temper drain water. The Drain light will flash green for 15 seconds then turn green for four minutes while the canister drains. Once the Drain light turns off, the drain cycle is complete and the humidifier is off.

## DISPLAY PANEL

Green lights indicate normal operation.

Yellow Steam light indicates humidifier is operating at less than rated capacity.

Flashing red Service light indicates canister is near the end of its life and should be replaced if the humidity in the space cannot be maintained.

Solid red lights indicate humidifier has shut down and requires service.

Disconnecting power to humidifier resets internal timers.

Indicator	Light	Function
 On/Off	<b>Off</b>	Humidifier is turned off or power is disconnected.
	<b>Solid green</b>	Humidifier is turned on.
	<b>Flashing Green</b>	Humidifier is preparing to turn on. Occurs if power to humidifier was turned off when humidifier was on. Humidifier turns on after light flashes for one minute.
 Fill	<b>Off</b>	Fill valve not energized.
	<b>Solid Green</b>	Fill valve is energized, filling or replenishing canister with water. (During drain cycle when fill valve is open allowing cold water into canister to temper drain water, the fill light does not illuminate.)
	<b>Flashing Green</b>	Fill and Drain Valves are pulsing to dislodge mineral deposits from drain. Flashes 10 times in 4 seconds. Occurs if high water probe detects water during drain cycle.
	<b>Solid Red</b>	Humidifier cannot fill canister. Humidifier stops operating. Occurs after fill valve has been energized for 40 minutes and high water probe does not detect water.
 Steam	<b>Off</b>	Humidifier is not producing steam
	<b>Solid Green</b>	Humidifier is turned on and receiving a call for humidity from the control.
	<b>Solid Yellow</b>	Humidifier is producing steam but at less than the rated capacity. Occurs if humidifier has operated for 168 hours and has not reached nominal current.
 Drain	<b>Off</b>	Drain valve not energized.
	<b>Solid Green</b>	Drain valve is energized, allowing water to drain from canister.
	<b>Flashing Green</b>	Humidifier is preparing to drain. Flashes for 15 seconds indicating fill valve is open allowing cold water into canister.
 Service	<b>Flashing Red</b>	Canister has reached end of life. Humidifier continues to operate but at reduced capacity. Occurs after humidifier has operated for 168 hours plus another 24 hours at less than 75% of the maximum operating current level between electrodes.
	<b>Solid Red</b>	Humidifier is not operating and requires service.

# MAINTENANCE

## NOTICE

- Allow humidifier to drain and disconnect power before servicing.
- Service should be performed by a qualified HVAC technician.

Inspect humidifier when servicing.

- Check for loose electrode connections on the canister. Replace electrode wires if connection is loose.
- Check system operation and inspect all plumbing connections and piping for signs of cracks or leaks.
- Inspect drain line to make sure it is not blocked and has constant downward slope. Clean or replace if necessary.
- Inspect steam hose to make sure it has no low spots and has constant upward slope from humidifier to dispersion tube in duct. If dispersion tube is mounted below humidifier, inspect drip tee and drain.

### TO REPLACE THE CANISTER

1. Turn humidifier off.
2. Unit will go through drain cycle – 4 mins – and turn off when complete.
3. Disconnect main electrical power to humidifier at the circuit breaker.
4. Allow the unit to cool.
5. Remove front door.
6. Remove electrode wires, high water probe wire, steam hose and canister.
7. Remove O-ring from groove in drain assembly using a small screw driver.
8. Insect drain assembly and remove any debris – see TO CLEAN THE DRAIN VALVE.
9. Insert new O-ring into groove in drain assembly. (O-ring is provided with Model 80 canister.) Dampen O-ring with water before inserting canister. Do not use oil, grease, or any lubricant besides water.
10. Make sure strainer is inserted into bottom of new canister.
11. Insert canister into drain assembly. Position canister with label facing outward.
12. Reconnect steam hose and wires ensuring wires are fully seated.
13. Replace front door.
14. Restore electrical power to humidifier.
15. Turn humidifier On and verify green On/Off light is illuminated.
16. See Start-up procedure.
17. Check for leaks.

### TO CLEAN THE DRAIN VALVE

1. Turn humidifier off.
2. Unit will go through drain cycle – 4 mins – and turn off when complete.
3. Disconnect main electrical power to humidifier at the circuit breaker.
4. Allow the unit to cool.
5. Remove front door.
6. Remove electrode wires, high water probe wire, steam hose and canister.
7. With your finger swirl the fluid/precipitate mixture in the bottom of the drain valve reservoir.
8. Using a sponge or paper towels soak up the water in the reservoir, if necessary use a wet/dry vacuum to remove residue.
9. Clean the inside of the drain port (where coil projects out) by gently swabbing with a bent cotton swab or other soft implement.
10. Rinse the drain valve reservoir with clean water and vacuum as necessary.
11. Replace canister, reconnect steam hose and wires ensuring wires are fully seated.
12. Replace front door.
13. Restore electrical power to humidifier.
14. Turn humidifier On and verify green On/Off light is illuminated.
15. See Start-up procedure.
16. Check for leaks.

### TO SERVICE THE FILL VALVE

If water flow from the valve is restricted, disconnect the inlet fitting and remove in line strainer from the inlet port using a small screw. Clean or replace strainer (Part #4004).

# TROUBLESHOOTING GUIDE

## CAUTION

Contact with electrical circuits can cause property damage, personal injury or death. Service and Troubleshooting must be performed by qualified electrician.

The following troubleshooting guide is intended to help diagnose and resolve general operational problems with the Steam Humidifier and optional Fan Pack. If a problem persists, call Aprilaire Tech Support toll-free at 1-800-334-6011. Please be prepared to describe the exact nature of the problem. For general operational problems, check to make sure humidifier is installed correctly.

**TABLE 6 – Humidifier Troubleshooting Guide**

Problem	Possible Cause	Action
General operating problems. Humidifier will not turn on or turn off.	Field-wired terminal connections.	Verify L1, N/L2 and ground connections are properly wired and appropriate voltage is present.
		Check HUMIDISTAT and (if used) FAN PACK terminal connections are tight and properly wired.
		HUMIDISTAT terminals must be connected to an on/off device.
		Check wiring connections and settings on Accessory items such as high limit switch and airflow proving switch.
	Internal connections.	Check electrode and high water probe connections on the top of the canister.
		Make sure ribbon cable from membrane switch is securely plugged into control circuit board.
		Make sure black/white wire is attached to terminal that matches input voltage.
	No power to humidifier.	Check main power supply and switch.
		Ensure breaker is sized appropriately for the amperage draw.
		Check for proper voltage across L1 and N/L2 terminals.
	Humidifier not turned on.	Make sure front cover is attached to engage safety interlock switch. Press On/Off button.
		Make sure ribbon cable from membrane switch is not damaged and is securely plugged into the control circuit board.
No power to 24 volt control circuit.	Check fuse on PCB (replace with 5 amp slow burn fuse if necessary).	
	With humidifier energized, check that LED light D8 is energized on the circuit board. If the LED is lit, replace the membrane switch, if not, replace the circuit board.	
Steam Light does not turn on.	Call for humidity not being received.	Check humidistat wiring and setting. (Do not leave ADHC in TEST mode.)
		Check wiring and settings of high RH limit switch and airflow proving switch.
Water is leaking from humidifier.	Loose plumbing connections.	Check water supply connection at fill valve inlet. Tighten as needed.
		Check internal hose clamp connections. Reposition clamps and tighten as needed.
		Check steam hose connection on top of canister. Tighten clamp as needed.
	Hoses are blocked.	Check internal hoses and eliminate kinks or blockage.
Drain hose is blocked.	Make sure drain hose has constant downward slope and is not blocked.	
Water constantly runs down drain.	Debris in drain valve preventing it from closing.	Remove canister and clean debris from drain valve.
	O-ring in drain valve is not properly seated in groove.	Remove canister and check O-ring for damage. Replace O-ring as necessary. Ensure O-ring is properly seated in its groove.
	Water is flowing from fill cup overflow port.	Check internal hoses and eliminate kinks or blockage.
	High static pressure in duct is causing back pressure in canister.	Make sure dispersion tube is not discharging into duct with greater than 2.0 in.wg static pressure.
Make sure dispersion tube tubelets are pointed up.		
Humidifier is filling and water is flowing down drain but drain light is not on.	High static pressure in steam line is causing back pressure in canister.	Install a tee and drain trap in any low points in the steam line. See <b>Figure 9</b> .

# TROUBLESHOOTING GUIDE (CONTINUED)

TABLE 6 – Troubleshooting Guide (continued)		
Problem	Possible Cause	Action
Humidifier makes gurgling sound.	Excess condensation in steam hose.	Install Tee and Trap Model 4028 as shown in <b>Figure 10</b> .
		Make sure steam hose has constant downward slope to humidifier or to tees and traps in low spots of hose.
		If hard pipe is used for dispersion system, make sure it is insulated.
Fill valve makes banging sound.	Water hammer from line pressure.	Make sure water supply line does not contact ductwork.
		Install shock arrestor.
		Install section of 1/4" braided fill line. Conform to local codes.
		If water supply pressure is greater than 120 psi, install pressure reducer.
Humidifier will not fill.	Saddle valve not open or pipe not pierced.	Make sure saddle valve is properly installed and the valve is open.
	Hoses are blocked.	Check internal hoses and eliminate kinks or blockage.
Humidifier will not drain.	Debris in drain valve blocking outlet port.	Remove canister and clean debris from drain valve.
Water in duct.	Dispersion tube installed incorrectly.	Install dispersion tube with tubelets facing straight up.
	Impurities in steam hose or pipe causing foaming.	Rinse canister, fill hose and fill cup with clean water.
	Insufficient absorption distance.	Determine absorption distance per <b>Table 3</b> .
Service light flashing red before end of humidification season.	Canister full of mineral deposits.	Remove canister and rinse with clean water.
		Plumb humidifier to filtered water.
		Plumb humidifier to softened water.
	Humidifier runs in short cycles (does not reach capacity).	Use blower activation feature on ADHC or run constant HVAC fan. Allowing the humidifier to run for longer cycles to concentrate minerals and increase water conductivity.
Yellow steam light.	Humidifier operating below rated capacity. (Normal operation for systems plumbed to low conductivity water and systems that operate for short cycles.)	Plumb humidifier to softened water.
		Use blower activation feature on ADHC or run constant HVAC fan.
		Operate humidifier on 208/240 volts.
		To determine operating current, attach clamp-on ammeter to one of the electrode wires on top of canister.
		Dissolve one teaspoon of salt into one cup of hot water. Add to the fill cup in 1/4 cup increments until unit operates properly. Yellow steam light will clear after first fill valve cycle at nominal amperage operation. Do not over salt. System will drain and refill with clean water due to over current fault.
Humidifier is not satisfying demand.	Control setting is too low.	Adjust control to higher setting.
	Control mounted in wrong location.	See Installation Instructions with control for correct mounting location.
	Short run times.	Use blower activation feature on ADHC or run constant HVAC fan.
	Humidifier capacity limited by input power (120V).	Operate humidifier on 208/240 volts.
		Increase capacity to 16.0 amps. Make sure breaker is appropriately sized.
Excess humidity.	Control setting is too high.	Adjust control to lower setting.
	Control mounted in wrong location.	See Installation Instructions with control for correct mounting location.
Solid red fill light.	Fill valve has been filling for 40 minutes.	Make sure high water pin wire is securely installed.
	Low spot in steam hose collecting water.	Support steam hose along its length ensuring 2" per foot slope from the dispersion tube to the humidifier.
	High static pressure in the duct is causing back pressure in the duct.	Make sure dispersion tube is not discharging into a duct with greater than 2.0 in.wg. static pressure.
		Make sure dispersion tube tubelets are pointed up.
Solid red service light.	Unit senses current 120% above nominal and cannot lower amperage after three drain cycles.	Rinse canister to remove mineral deposits or install a new canister.

## TROUBLESHOOTING GUIDE (CONTINUED)

**TABLE 7 – Fan Pack Troubleshooting Guide**

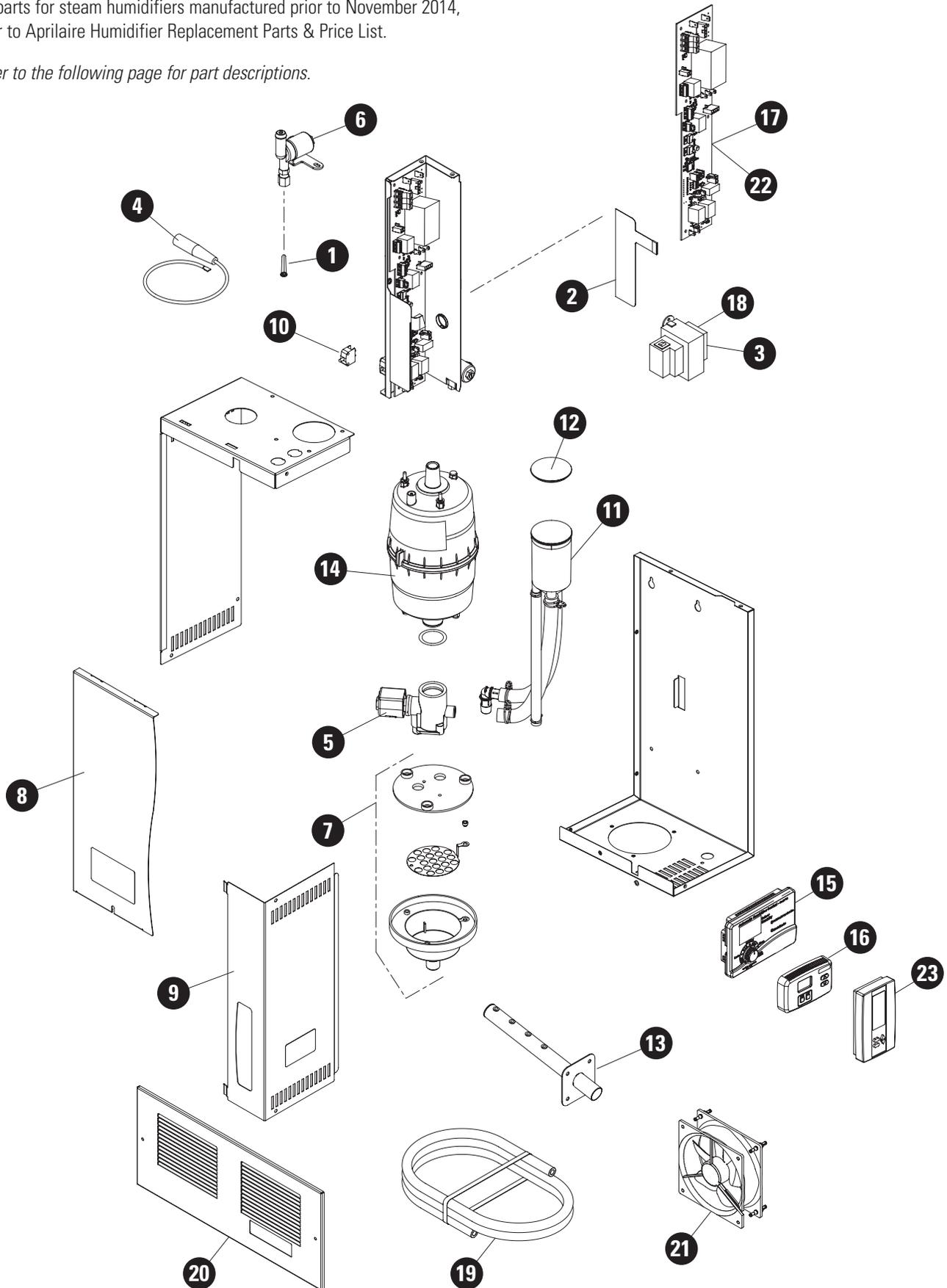
<b>Problem</b>	<b>Possible cause</b>	<b>Action</b>
Water dripping from Fan Pack.	Tubing connection.	Check all connections.
	Fan not operating.	See “Fan does not operate”.
	Steam outlets blocked.	Clean steam dispersion manifold outlet.
	Foaming in canister or steam hose.	Rinse components with clean water.
Fan does not operate.	Wiring.	Check wiring.
	Steam Humidifier power.	Check that Steam Humidifier is powered and on.
	No humidity call.	Adjust humidistat setting. Check location of humidistat.
	Circuit board output.	Confirm 24 VAC output from Steam Humidifier FAN PACK terminals during a call for humidity.
	Motor failure.	Replace fan motor.
Noise.	Fan noise.	Check for obstructions or damage to fan.
	Gurgling.	Add a drip tee and trap (PN 4028) to the steam line as close to the Steam Humidifier as possible to divert condensation to drain. See <b>Figure 10</b> .

# REPLACEMENT PARTS

Parts are shown for Model 800/865 humidifiers manufactured after November 2014.

For parts for steam humidifiers manufactured prior to November 2014, refer to Aprilaire Humidifier Replacement Parts & Price List.

Refer to the following page for part descriptions.



## REPLACEMENT PARTS (CONTINUED)

Item No.	Part No.	Description
1	4004	Fill Valve In-line Strainer
2	4975	Membrane Switch
3	5306	Universal Transformer, Model 865, 866 (75 VA)
4	4978	Electrode Wire (1)
5	4983	Drain Valve
6	5309	Fill Valve
7	4985	Drain Cup Assembly
8	4986	Front Panel & Screw
9	4987	Electrical Access Panel & Screws
10	4988	Safety Interlock Switch
11	4989	Fill Cup and Hoses
12	4990	Fill Cup Cap
13	4991	Steam Dispersion Tube & Screws
14	80	Steam Canister and O-Ring
15	62	Automatic Digital Control for Model 800
16	65	Digital Manual Humidistat

Item No.	Part No.	Description
17	5530	Control Board, Model 800, 865
18	5529	Universal Transformer, Model 800, 801 (40 VA)
19	4997	Condensate Tubing with Wire Ties
20	4998	Fan Pack Grille
21	4999	Fan Pack Fan
22	5554	Modulating Control Board, Model 801, 866
23	63	Automatic Digital Modulating Control (ADMC) for Model 801/866
	4001	Saddle Valve
	4028	Drain Trap & Tee
	4592	Airflow Proving Switch
	4594	High Humidity Limit Switch
	4851	Blower Activation Relay (Optional for use with manual humidistats)
	4856	Condensate Pump (Rated for 160°F)
	4973	Steam Hose (6 ft.) & Clamps
	4974	Drain Hose (10 ft.) & Clamps