AS35 Steam Humidifier

Installation and 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.

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.

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.

SHARP EDGES

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

MATERIALS LIST

MODEL AS35

MATERIALS FURNISHED

- Humidifier
- 5558 Automatic Digital Modulating Control (ADMC)
- Steam hose (6 feet)
- 7/8" I.D. drain tubing (10 feet)
- Hose clamps
- Saddle valve
- Mounting screws
- 4851 Blower Activation Relay

NOT FURNISHED

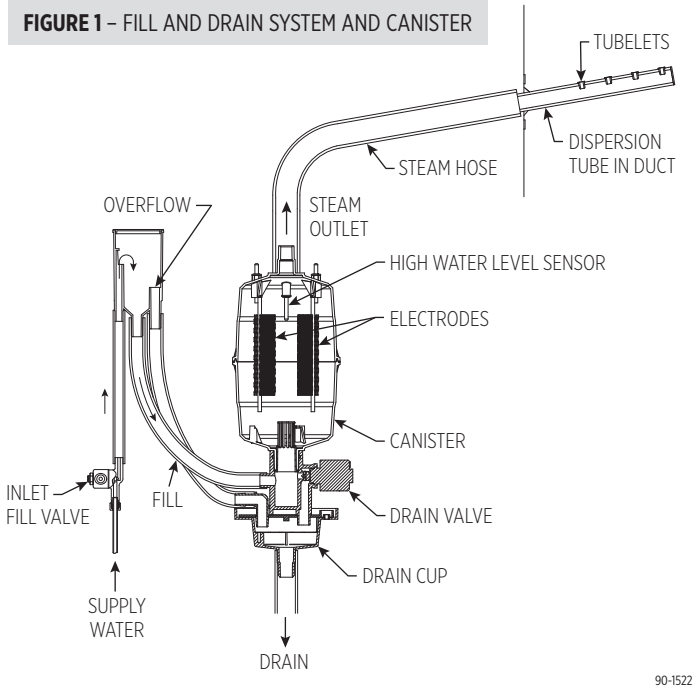
- Main power disconnect switch
- Wiring
- 1/4" O.D. supply water tubing
- Boards for mounting (if required)

PRINCIPLES & SEQUENCE OF OPERATION

The Anden™ Steam Humidifier delivers humidity in the form of steam to the conditioned space via the system duct. 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 5558 ADMC is installed in the space to be humidified. When the ADMC detects RH below the set point, the humidifier energizes the electrodes to provide steam. Steam is delivered into the ductwork via the steam hose and through the dispersion tube. The dispersion tube is fitted with 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. A blower activation relay is provided to turn on the HVAC system blower when there is a call for humidity.

FIGURE 1 – FILL AND DRAIN SYSTEM AND CANISTER



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 11). Configure the unit appropriately for the application (see **TABLE 1** for capacity specifications).

TABLE 1 – HUMIDIFIER CAPACITIES AND RECOMMENDED CUBIC FEET

Amperage	Voltage	Maximum Steam Capacity (gal/day)	Maximum Recommended Cubic Feet		
			Tight	Average	Loose
11.5	120V	11.5	20,000 cu ft	12,000 cu ft	8,000 cu ft
	208V	20.5	36,000 cu ft	20,000 cu ft	12,000 cu ft
	240V	23.3			
16.0	120V	16.0	28,000 cu ft	16,000 cu ft	12,000 cu ft
	208V	30.0	48,000 cu ft	32,000 cu ft	20,000 cu ft
	240V	34.6			

Shipping Weight: 28 lbs

Humidifier Operating Weight: 23 lbs*

**As minerals precipitate, unit weight can increase to approximately 30 lbs.*

WATER QUALITY

Minerals that are naturally found in water contribute to water's electrical conductivity; water conductivity is measured in microsiemens per centimeter (uS/cm). Mineral content, also described as "water hardness" is usually measured in grains per gallon. Variation is found among water samples but generally the higher the mineral content, the higher the conductivity.

The Steam Humidifier is designed to operate on water with conductivity between 100 and 1,250 uS/cm. This correlates loosely with water hardness between 3 and 36 grains/gallon. Water that is considered "hard" and softened water work well in the Steam Humidifier. The humidifier makes steam when plumbed to low-conductivity water but it takes longer to reach nominal current.

Two canisters are available for use with the Steam Humidifier. The Model AS80 canister is used in most installations and is optimized for "hard" and softened water. The Model AS80 typically works best when the Steam Humidifier is installed at 208 or 240 VAC. If the Steam Humidifier has a yellow Steam light in the first two weeks of running with a new canister, the Steam Humidifier is taking a long time to reach its nominal current; changing to the Model AS80LC canister will prevent this from happening in the future.

The Model AS80LC canister is optimized for use in areas where the water conductivity is less than 300 uS/cm or when the Steam Humidifier is installed at 120VAC. The Model AS80LC should not be used with softened water. If the Steam Humidifier is draining too frequently, the water conductivity is too high; changing to the Model AS80 canister will reduce the drain frequency.

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:

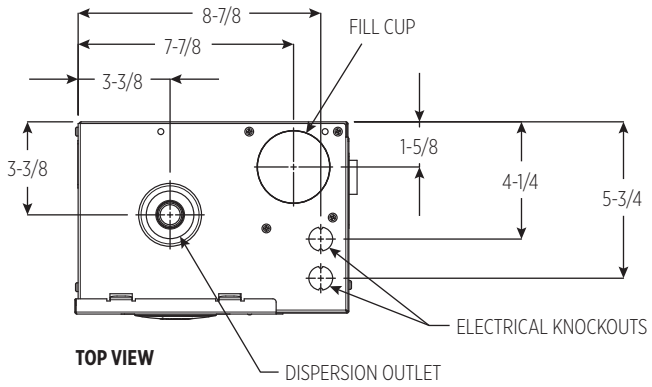
Hard water: The benefit of hard water is less frequent draining and filling than with soft water, which results in better energy and water efficiency and more consistent steam output. However, canister replacement could be more frequent with hard water, because mineral deposits coat the electrodes. The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

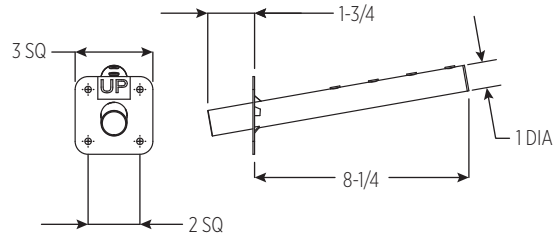
Conductivity (uS/cm)	Grains/Gal	Hardness	Recommended Canister by Voltage		
			120VAC	208VAC	240VAC
75-100	0-3	Naturally Soft	Installation Not Recommended	AS80LC	AS80LC
100-300	3-9	Naturally Soft	AS80LC	AS80LC	AS80LC
300-500	9-15	Slightly Hard	AS80LC	AS80	AS80
500-650	15-20	Moderately Hard	AS80LC	AS80	AS80
650-850	20-25	Hard	AS80LC	AS80	AS80
850-1250	25-36	Very Hard	AS80LC	AS80	AS80
above 1250	above 36	Extremely Hard	Installation Not Recommended		
		Softened	AS80	AS80	AS80

FIGURE 2 – HUMIDIFIER DIMENSIONS (INCHES)



TOP VIEW

STEAM DISPERSION TUBE



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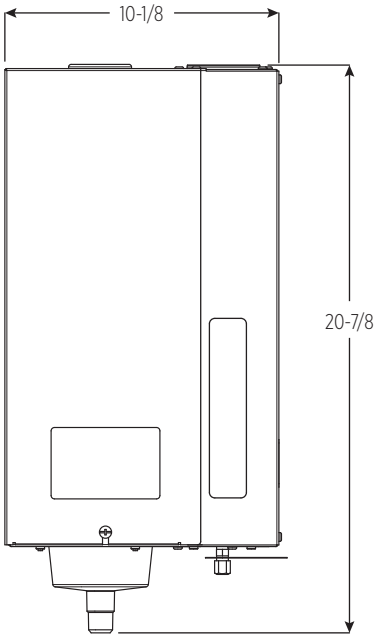
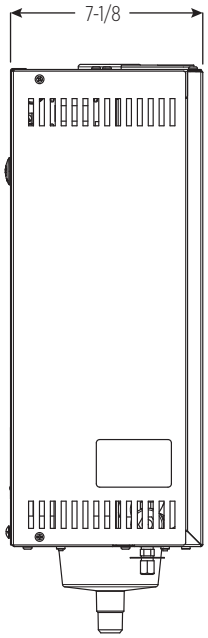
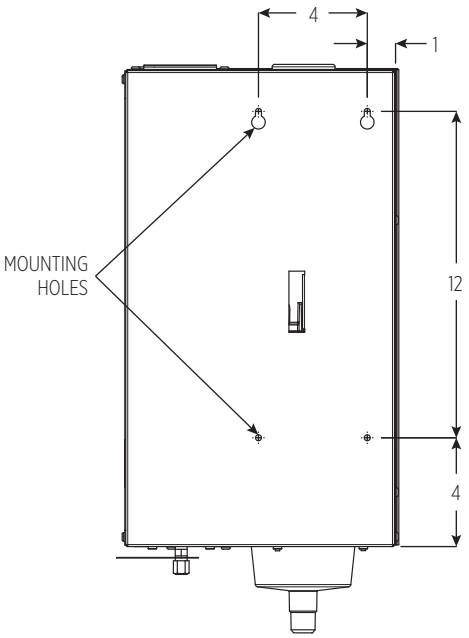


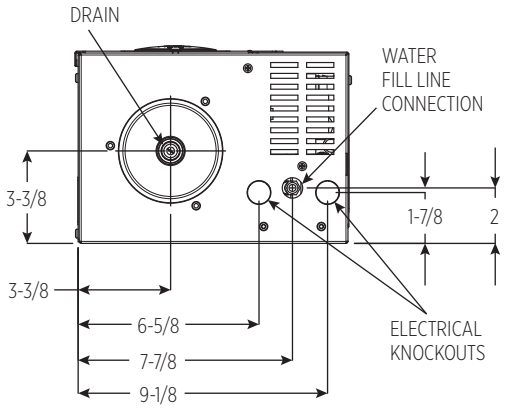
FRONT VIEW



SIDE VIEW



BACK VIEW



BOTTOM VIEW

90-1518

INSTALLATION INSTRUCTIONS

⚠ 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.

Do not mount humidifier in a location where operating ambient temperatures exceed 140°F or where freezing temperatures may occur.

CHOOSING A LOCATION

DISPERSION TUBE LOCATION

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 on the ADHC to allow the humidifier to run with the blower only. Call Anden Tech Support at 1-800-972-3710 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 3**. 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.

TABLE 3 – ABSORPTION DISTANCE (MINIMUM DISTANCE FROM DISPERSION TUBE DOWNSTREAM TO ANY OBSTRUCTION OR BEND IN DUCT)

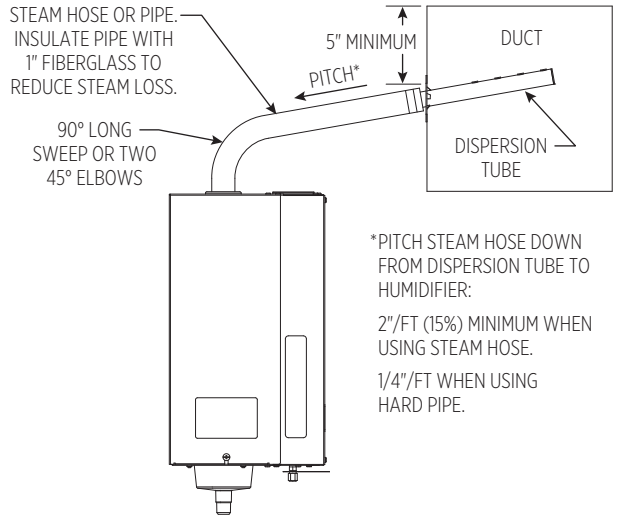
Humidifier Output (gal/day)	Airflow Velocity*	70°F & 30% RH Setpoint	70°F & 45% RH Setpoint	65°F & 45% RH Setpoint	45°F & 45% RH Setpoint
Up to 16.0	300 fpm	13″	19″	23″	30″
	600 fpm	6″	10″	12″	18″
	1200 fpm	3″	5″	6″	13″
	1800 fpm	2″	3″	4″	10″
20.5 – 25.0	300 fpm	15″	23″	28″	45″
	600 fpm	6″	12″	13″	26″
	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

ELEVATION

The preferred location for the dispersion tube 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 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 3**.

FIGURE 3 – DISPERSION TUBE MOUNTED ABOVE HUMIDIFIER



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.

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 4**.

DISTANCE FROM HUMIDIFIER TO DISPERSION TUBE

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" thick insulation rated for 212°F or higher 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 6**.

FIGURE 4 – DISPERSION TUBE MOUNTED BELOW HUMIDIFIER

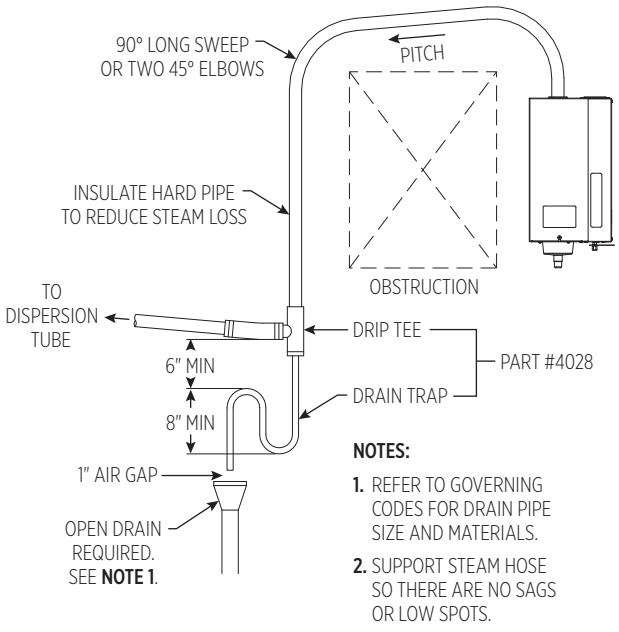


FIGURE 5

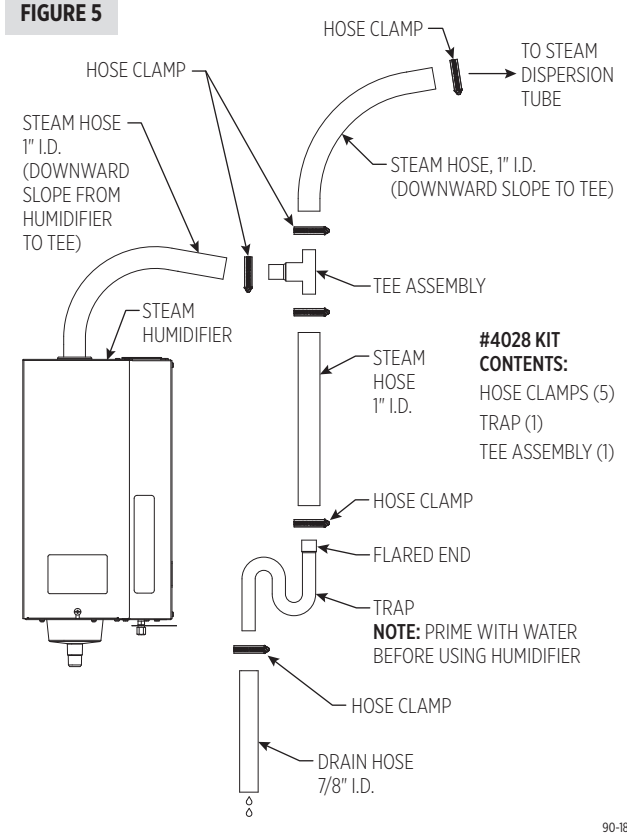


FIGURE 6

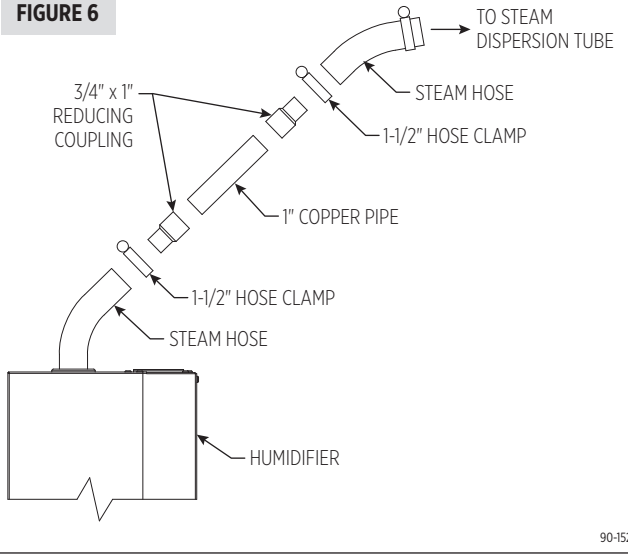


TABLE 4 – STEAM HUMIDIFIER CAPACITY IN GALLONS/DAY

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	Steam Hose	Insulated Pipe	Steam Hose	Insulated Pipe	Steam Hose	Insulated Pipe	Steam Hose	Insulated Pipe	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 operating ambient temperature exceeds 140°F or where freezing temperatures may occur. Extreme temperatures may cause the humidifier to leak which can cause damage.

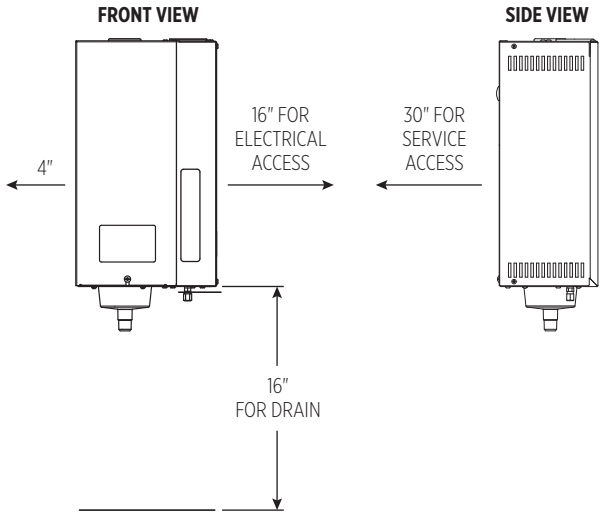
Mount humidifier in a location that allows access for servicing, and clearance to remove front panel for replacing the canister and side panel for access to the electrical components during installation. See **FIGURE 7** for minimum clearances around humidifier.

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.

Mount the humidifier to a structurally stable surface that can bear the full load of the humidifier.

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

FIGURE 7 – CLEARANCES



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

Mount the steam dispersion tube higher than the humidifier to allow condensate to flow back into the canister. If the dispersion tube cannot be mounted higher than the steam humidifier or of the steam hose cannot maintain the recommended pitch due to an obstruction a drip tee and trap system (part #4028) must be installed as shown in **FIGURE 4**.

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 angles 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 a 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.

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. 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.

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. 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.

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

Follow local plumbing codes. An external backflow preventer may be needed.

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.

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 8**). 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 **FIGURE 9**.

WIRING INSTRUCTIONS

1. Install disconnect switch (not provided) between line power source and humidifier. Knock-outs for power wiring and low voltage control circuit wiring are provided.
2. Connect power and ground wiring as shown in **FIGURE 9**. Do not run high voltage power lines over internal circuit boards.

FIGURE 8 – CONTROL CIRCUIT BOARD WITH DIP SWITCHES

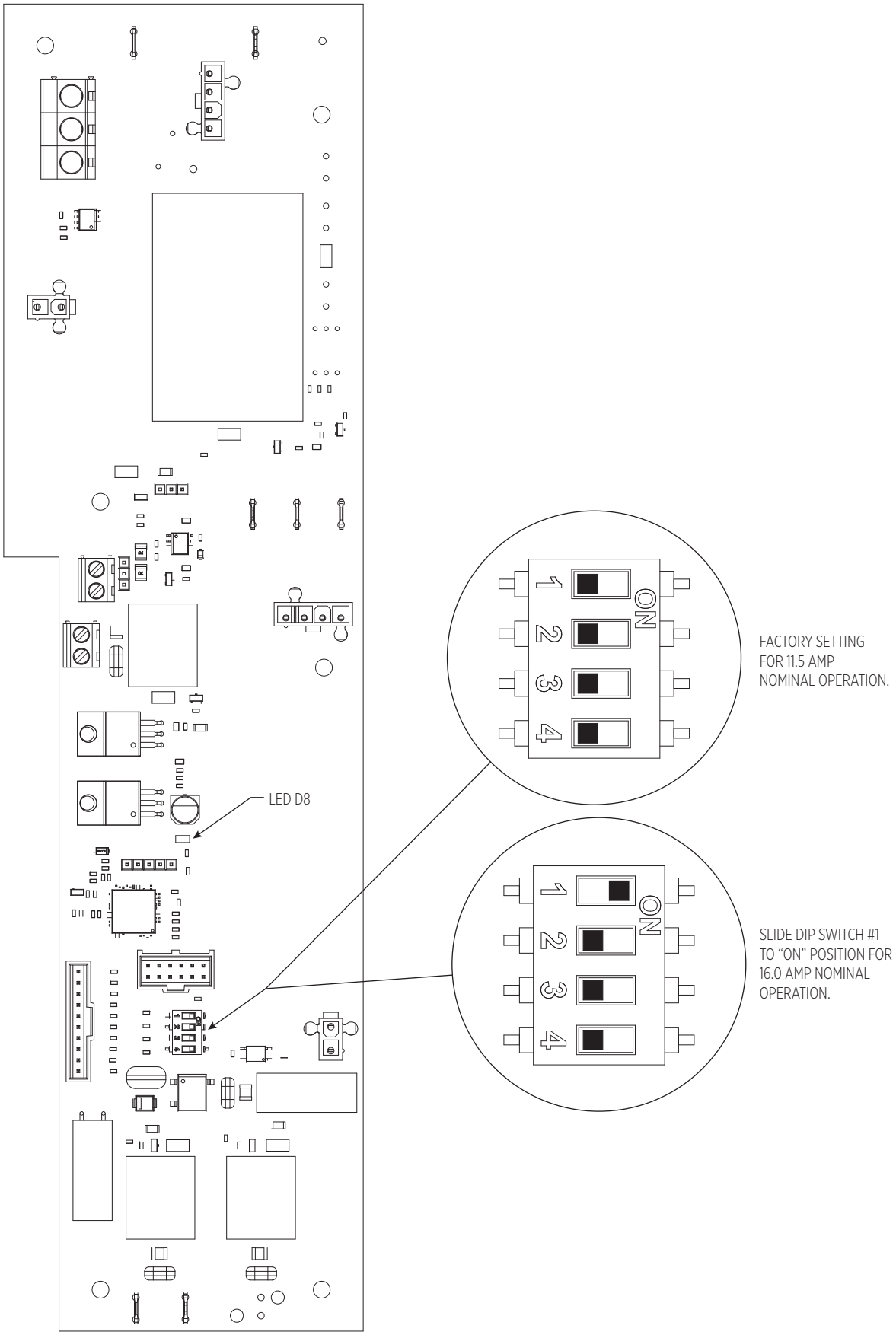
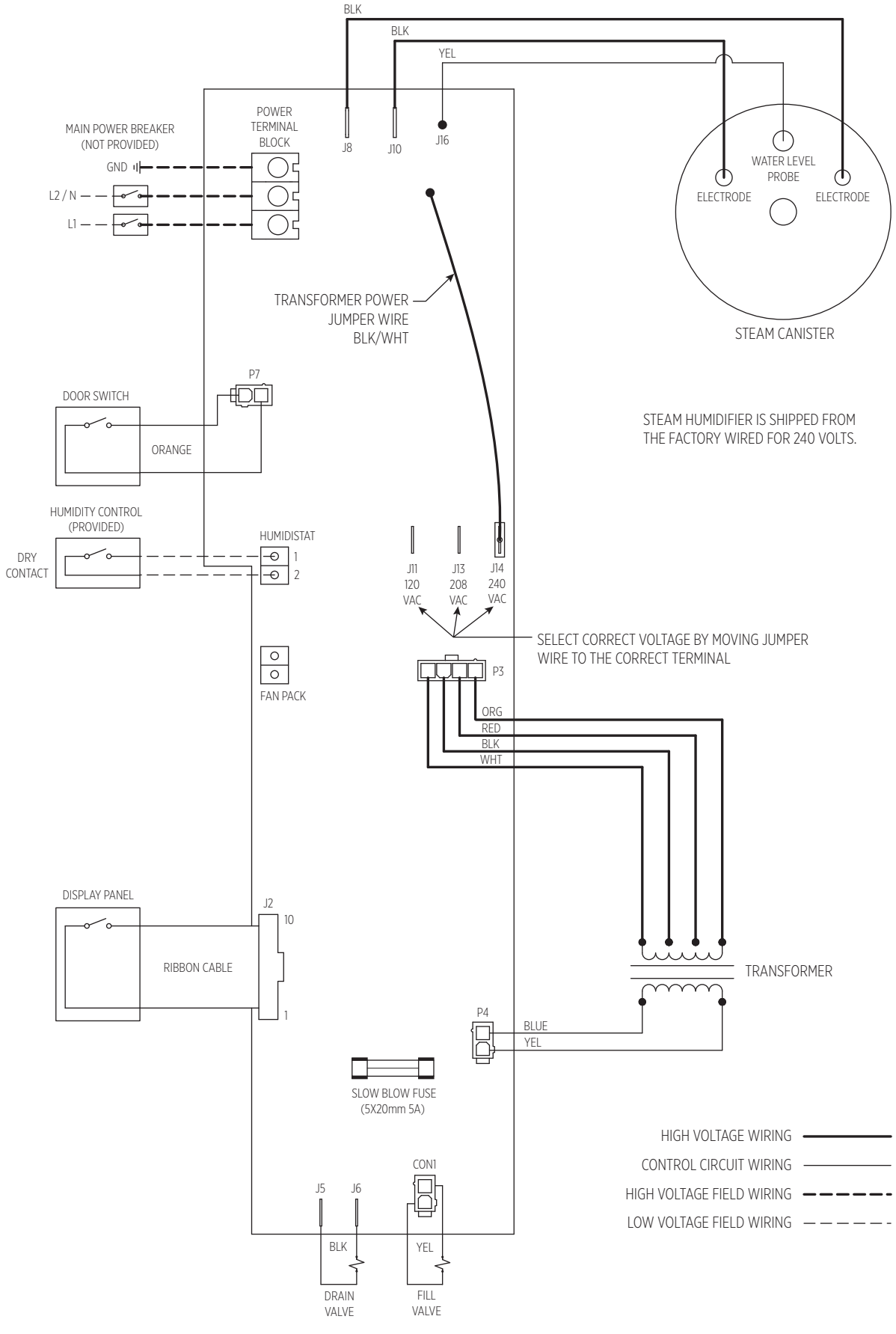


FIGURE 9 – 240 VAC WIRING DIAGRAM



ADMC CONTROL INSTALLATION

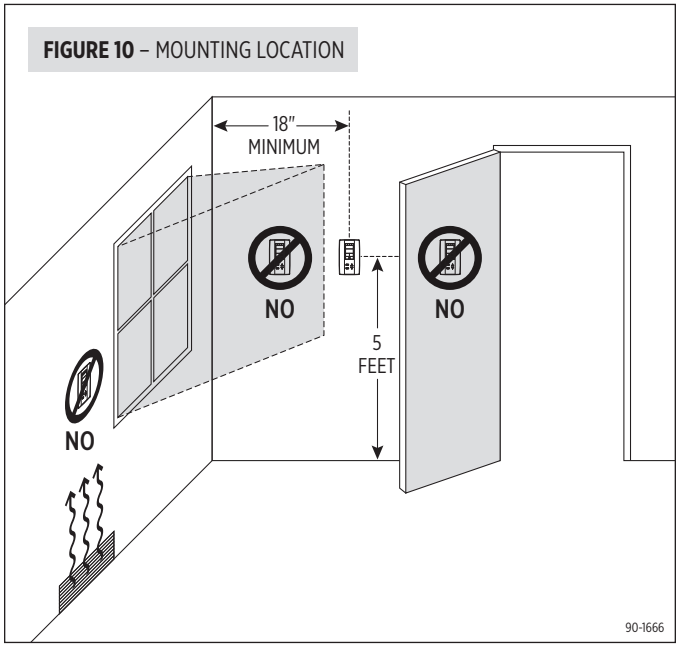
DETERMINE LOCATION FOR CONTROL

The Model 5558 Automatic Digital Modulating Control (ADMC) should be installed in the space being humidified in order to control moisture levels. See **FIGURE 10**.

Do not mount ADMC:

- In the flow of a supply register.
- Behind doors, in corners, or other dead air spaces.
- In direct sunlight, near lighting fixtures, or other appliances that give off heat.
- On an outside or unconditioned area wall.
- In stairwells or near outside doors.
- On a wall with concealed pipes or ductwork.

FIGURE 10 – MOUNTING LOCATION



⚠ CAUTION

RISK OF DAMAGE. Disconnect power to humidistat prior to separating humidistat from its base.

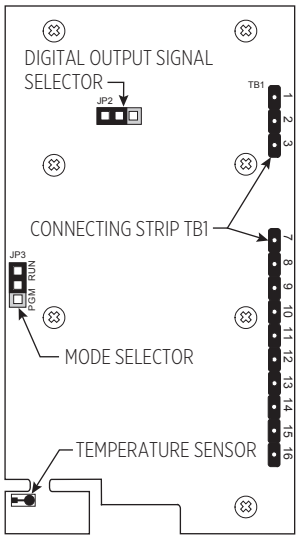
1. Loosen the bottom screw holding the front cover to the base.
2. Lift the front cover of the humidistat to separate it from the base.
3. Pull wires through the base hole.
4. Secure the base to the wall using wall anchors and screws (provided).
5. Wire the control. See **ADMC WIRING** on page 15.
6. Install the humidistat to the base and tighten the bottom screw.

TERMINAL DESCRIPTIONS

1	Common
2	24VAC
6	Not Used
7	Relay Common
8	Humidify dry or powered contact (see **JUMPER SETTINGS**)
9	Dehumidify dry contact (NOT USED)
10	Humidify set point analog output (NOT USED)

11	Alarm status digital input (NOT USED)
12	External humidity sensor
13	Outdoor temperature sensor
14	Humidify Modulating output
15	Dehumidify Modulating output (NOT USED)
16	Actual humidity output (NOT USED)

JUMPER SETTINGS



HUMIDISTAT BACK

DIGITAL OUTPUT SIGNAL SELECTION (JP2)	
 24VAC	**Jumper (JP2) on left:** 24VAC powered contacts when wiring Terminals 7 and 8.
 24VAC EXT.	**Jumper (JP2) on right:** 24VAC dry contact when wiring terminals 7 and 8. Use this setting for the AS35 and AS35FP.

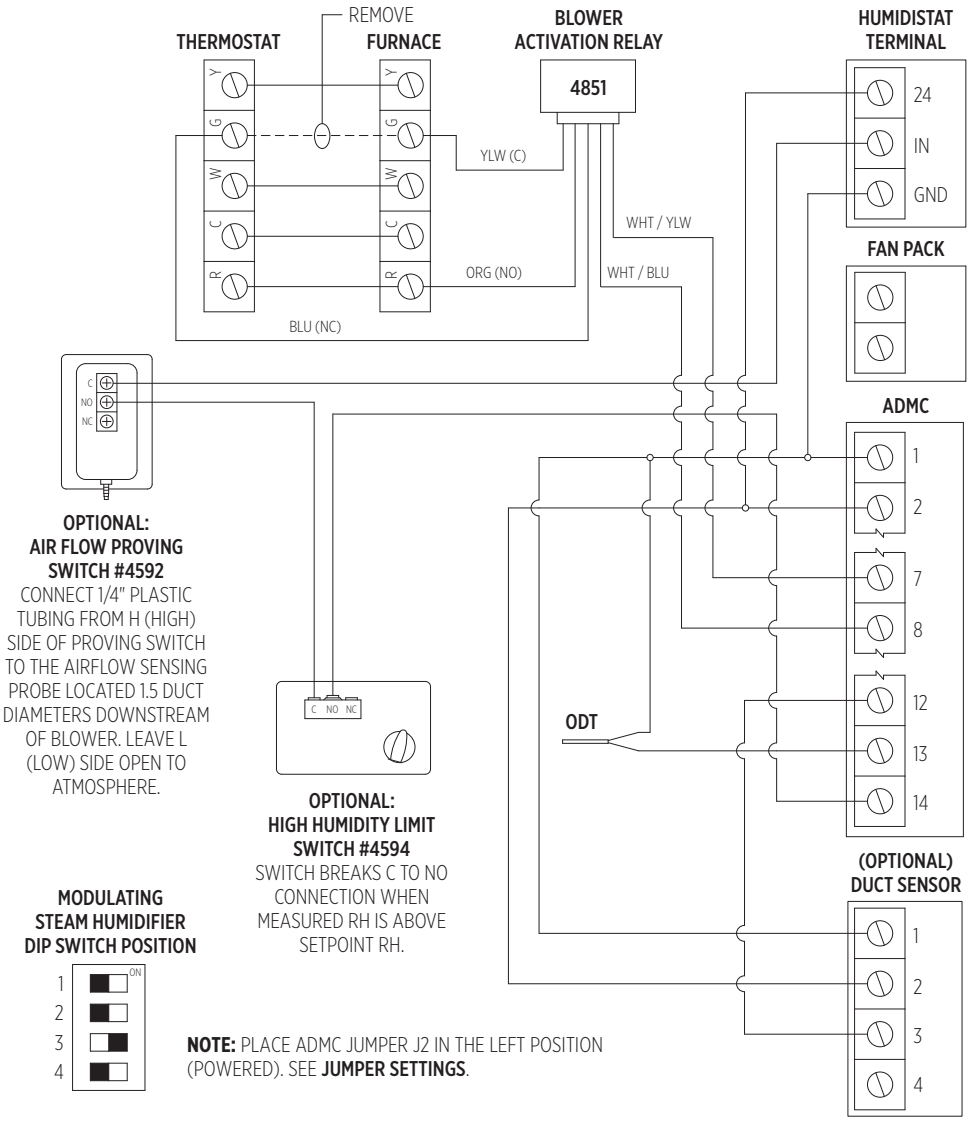
MODE SELECTION (JP3)	
 JP3 RUN PGM	**Jumper (JP3) on RUN:** Humidistat is in Operation Mode. Humidistat set point is adjustable.
 JP3 RUN PGM	**Jumper (JP3) on PGM:** Humidistat is set in **Program Mode**. Refer to the set up section for instructions. **Humidistat will not operate in this mode.**

ADMC WIRING

When the Steam Humidifier is installed on an HVAC system, wire the Model 5558 ADMC as shown in **FIGURE 11**.

The Anden Model 5558 ADMC is the recommended humidity controller for the Model AS35 Steam Humidifier.

FIGURE 11 – ADMC WIRING



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. Close main power switch energizing humidifier.
5. Press On/Off button on humidifier. The **On/Off** light will illuminate green.
6. Adjust the humidity set point with the up and down arrows to initiate a call for humidity. Make sure the HVAC blower is operating.

   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.**
7. 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.
8. Set ADMC to proper level.
9. Press On/Off button to turn humidifier on.

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

Any time power is disconnected, 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

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.

TABLE 5 – DISPLAY PANEL

Indicator	Light	Function
 On/Off	Off	Humidifier is turned off or power is disconnected.
	Solid green	Humidifier is turned on.
	Flashing Green	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	Off	Fill valve not energized.
	Solid Green	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.)
	Flashing Green	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.
	Solid Red	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	Off	Humidifier is not producing steam
	Solid Green	Humidifier is turned on and receiving a call for humidity from the control.
	Solid Yellow	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	Off	Drain valve not energized.
	Solid Green	Drain valve is energized, allowing water to drain from canister.
	Flashing Green	Humidifier is preparing to drain. Flashes for 15 seconds indicating fill valve is open allowing cold water into canister.
 Service	Flashing Red	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.
	Solid Red	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. Change out electrode wires every 3 years (Part #4978).
- 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.
- Clean and inspect condensate pump (if used).

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 AS80 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

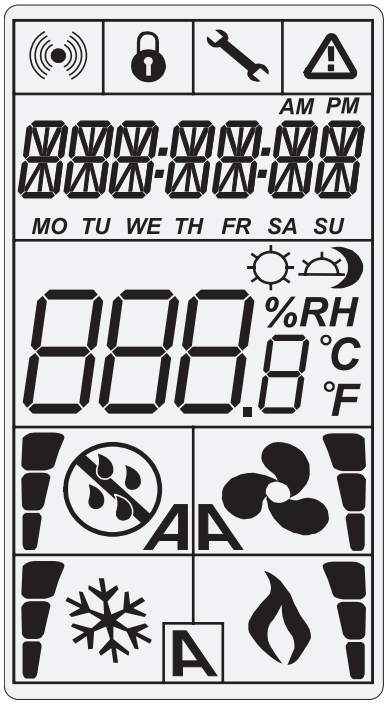
1. Turn humidifier off.
2. Unit will go through drain cycle – 4 mins – and turn off when complete.
3. Disconnect main electrical power to humidifier at the circuit breaker.
4. Allow the unit to cool.
5. Remove front door.
6. Remove electrode wires, high water probe wire, steam hose and canister.
7. With 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).

ADMC CONTROL SET UP

INTERFACE



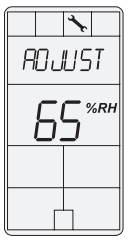
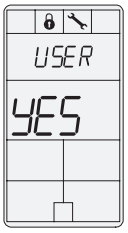
Symbols on Display	
	Humidification ON 33, 66, 100% output
	Dehumidification ON 33, 66, 100% output
%RH	Percentage of humidity
°C or °F	°C: Celsius scale °F: Fahrenheit scale
	Menu set-up Lock
	Programming mode (Technician setting)
	Alarm status

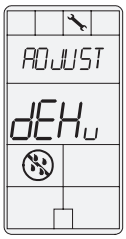
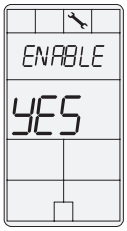
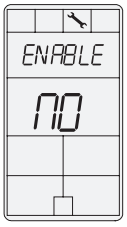
⚠ CAUTION

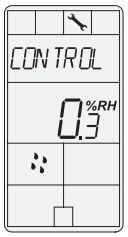
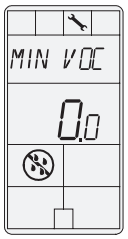
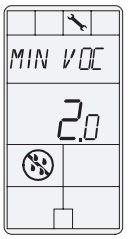
RISK OF DAMAGE. Disconnect power to humidistat prior to separating humidistat from its base.

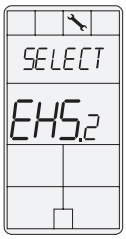
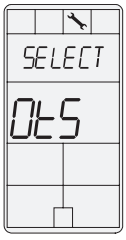
PROGRAM MODE

To enter program mode for ADMC set up, remove the humidistat from its base. On the ADMC back, place Jumper J3 in the PGM position then reinstall onto the base. The symbol will be displayed. Press button (★) to advance to the next program function, press buttons △ or ▽ to change value, press button (⏻) to return to preceding stage. Exit the programming mode at any time by placing Jumper J3 in the RUN position, settings will be saved. **JUMPER J3 MUST BE IN RUN MODE TO OPERATE.**

Step	Display	Description	Values
1		**Internal humidity sensor offset calibration:** Display shows *INSIDE HUMIDTY SENSOR OFFSET* and the relative humidity percentage read by internal humidity sensor and the **Humidify** symbol is displayed. You can adjust the calibration of the sensor by comparing with a known humidistat.	**Range:** 10 to 90%RH (max. offset ± 5%) **Increment:** 0.1%RH 0.0%RH no humidity sensor (factory calibrated)
2		**Internal temperature sensor calibration:** Display shows *INSIDE TEMPER SENSOR OFFSET* and the temperature read by internal temperature sensor. You can adjust the calibration of the sensor by comparing with a known thermometer.	**Range:** 50 to 104°F [10 to 40°C] (max. offset ± 5°C) **Increment:** 0.2°F [0.1°C] (factory calibrated)
3		**Minimum set point:** Display shows *ADJUST MINIMUM USER SETPNT* and the minimum humidity set point. Select the desired minimum humidity set point. The minimum set point is restricted by the maximum value. (Step 4)	**Minimum range:** 10 to 90%RH **Increment:** 1%RH **Default setting:** 15%RH
4		**Maximum set point:** Display shows *ADJUST MAXIMUM USER SETPNT* and the maximum humidity set point. Select the desired maximum humidity set point. The maximum set point is restricted by the minimum value. (Step 3)	**Maximum range:** 10 to 90%RH **Increment:** 1%RH **Default setting:** 65%RH
5		**Locking the set point:** Display shows *USER SETPNT LOCKED* and the status of the function. The set point adjustment can be locked or unlocked. If locked, *YES* and **Lock** symbol will appear, and set point adjustment will not be allowed in the operating mode.	 **Default setting:** Unlocked (NO)

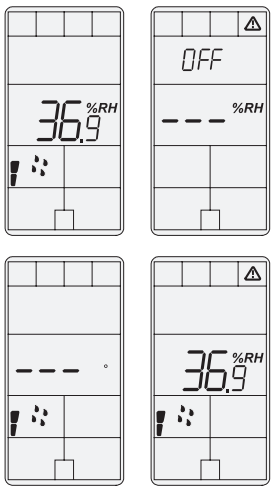
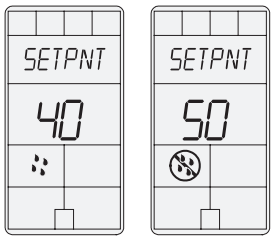
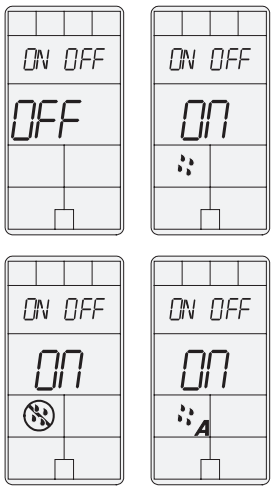
Step	Display	Description	Values
6		**Adjust the control mode:** Display shows ADJUST CONTROL MODE. **Humidify** or **Dehumidify** symbols are also displayed. **Select which control mode you want to authorize:** Automatic humidify and dehumidify (**Auto**), humidify only (**Hu**) or dehumidify only (**dEHu**). **If you have selected dehumidify only, go directly to Step 8.**	  **Default setting:** humidify only
7		**Adjust humidify set point:** Display shows ADJUST HUMIDTY SETPNT and the humidity set point. You can change the humidity set point to the desired value; it should be within the humidity range set in Steps 3 & 4. **Lock** symbol will appear if the set point was locked at Step 5. Set point value is restricted by the minimum and maximum value. (Steps 3 & 4) **If you have selected humidify only at Step 6, go directly to Step 9.**	**Set point range:** 10 to 90%RH **Increment:** 1%RH **Default setting:** 40%RH
8		**Adjust dehumidify set point:** Display shows ADJUST DEHUMI SETPNT and the dehumidify set point. You can change the dehumidify set point to the desired value; it should be within the humidity range. **Lock** symbol will appear if the set point was locked at Step 5. Set point value is restricted by the minimum and maximum value. (Steps 3 & 4)	**Set point range:** 10 to 90%RH **Increment:** 1%RH **Default setting:** 50%RH
9		**Set On/Off function enable or disable:** Display shows ENABLE ON OFF CONTROL MODE. You can enable or disable the humidistat On/Off function in the operation mode. If Enable (**YES**), the humidistat can be turned On/Off in operation mode. If Enable (**NO**), the humidistat cannot be turned OFF in the operation mode. **If you have selected dehumidify only at Step 6, go directly to Step 11.**	 **Default setting:** Enable (YES)
10		**Humidify proportional band:** Display shows HUMIDTY CONTROL RAMP and the value of the humidification proportional band and the **Humidify** symbol is displayed. Select the desired proportional band. **If you have selected humidify only at Step 6, go directly to Step 12.**	**Proportional band:** 2 to 10%RH **Increment:** 0.5%RH Default setting: 5.0%RH
11		**Dehumidify proportional band:** Display shows DEHUMI CONTROL RAMP and the value of dehumidification proportional band and the **Dehumidify** symbol is displayed. Select the desired span for the dehumidify ramp.	**Proportional band:** 2 to 10%RH **Increment:** 0.5%RH **Default setting:** 5.0%RH

Step	Display	Description	Values
12		**Control dead band:** Display shows CONTROL DEAD BAND and its value. **Humidify/Dehumidify** symbols are also displayed since this value applies to both. Please select the desired dead band value. **If you have selected dehumidify only at Step 6, go directly to Step 14.**	**Dead band range:** 0.3 to 5.0%RH **Increment:** 0.1%RH **Default setting:** 0.3%RH
13		**Minimum voltage of humidify modulating output:** Display shows MIN VDC ANALOG AO1 OUTPUT and the value of the minimum voltage of the signal 0.0 for 0 to 10 Vdc or 2.0 for 2 to 10 Vdc. **Humidify** symbol is also displayed. **If you have selected humidify only at Step 6, go directly to Step 15.**	 **Range:** 0.0 or 2.0 Volt **Default setting:** 0.0 Volt
14		**Minimum voltage of dehumidify modulating output:** Display shows MIN VDC ANALOG AO2 OUTPUT and the value of the minimum voltage of the signal 0.0 for 0 to 10 Vdc or 2.0 for 2 to 10 Vdc. **Dehumidify** symbol is also displayed. Select the desired value of the minimum voltage of AO2 output.	 **Range:** 0.0 or 2.0 Volt **Default setting:** 0.0 Volt
15		**Minimum voltage of AO3 output:** Display shows MIN VDC ANALOG AO3 OUTPUT and the value of the minimum voltage of the signal 0.0 for 0 to 10 Vdc or 2.0 for 2 to 10 Vdc. **Humidify** symbol is also displayed. Select the desired value of the minimum voltage of AO3 output. **If you have selected dehumidify only at Step 6, go directly to Step 17.**	 **Range:** 0.0 or 2.0 Volt **Default setting:** 0.0 Volt
16		**Minimum voltage of AO4 output:** Display shows MIN VDC ANALOG AO4 OUTPUT and the value of the minimum voltage of the signal 0.0 for 0 to 10 Vdc or 2.0 for 2 to 10 Vdc. **Humidify** symbol is also displayed. Select the desired value of the minimum voltage of AO4 output.	 **Range:** 0.0 or 2.0 Volt **Default setting:** 0.0 Volt

Step	Display	Description	Values
17		**Set AI1 (duct sensor) input signal:** Display shows SELECT AI1 INPUT SIGNAL. Use when installing the duct humidity sensor. If duct sensor is not installed select the default setting, **OFF**. To configure the duct sensor as the primary control sensor (installed in the return duct) select **EHS.0**. To configure the duct sensor as the high humidity limit sensor (installed in the supply duct) Select **HIL.0**. **If you have selected OFF or SPS, go directly to Step 20.** **NOTE:** If SPS is selected, the dehumidify set point will be disabled.	     **Default setting:** OFF
18		**External humidity sensor offset calibration:** (If **EHS.0**, **EHS.2**, **HIL.0** or **HIL.2** has been selected at Step 17.) Display shows EXTERN HUMIDTY SENSOR OFFSET and relative humidity percentage read by duct humidity sensor. **Humidify** symbol is also displayed. If the sensor is not connected or short circuited, the display shows **Eror**. You can adjust the calibration of the sensor by comparison with a known humidistat.	**Range:** 10 to 90%RH (max. offset ± 5%) **Increment:** 0.1%RH 0.0%RH = no humidity sensor
19		**Adjust high limit set point:** (If **HIL.0** or **HIL.2** has been selected at Step 17.) Display shows ADJUST SETPNT HIGH LIMIT and the high limit set point. Select the desired high limit humidity set point.	**Set point range:** 10 to 90%RH **Increment:** 1%RH **Default setting:** 80%RH
20		**Set AI2 (Temperature Sensor) input signal:** Display shows SELECT AI2 INPUT SIGNAL. Select which signal you want for AI2 input. You can choose: • **OFF** (input not used) • **Wts** (Window Temperature Sensor 10KΩ) – not included • **OtS** (Outside Temperature Sensor 10KΩ) – included **If you have selected OFF, go directly to Step 1.**	  **Default setting:** OFF

Step	Display	Description	Values
21		**External temperature sensor calibration:** (If **WtS** or **OtS** has been selected at Step 20.) Display shows EXTERN TEMPER SENSOR OFFSET and the temperature read by the external temperature sensor (if connected on the selected input). If the sensor is not connected or short circuited, the display shows **Eror**. You can adjust the calibration of the external sensor by comparison with a known thermometer.	**Range:** -30 to 90°C [-22 to 194°F] (max. offset ± 5°C) **Increment:** 0.1°C [0.2°F]
22		**Window temperature sensor compensation factor:** (If **WtS** has been selected at Step 20.) **For window temperature sensor only, see Temperature Compensation section for Outdoor Temperature Sensor operation.** Display shows WINDOW TEMPER SENSOR COMPENS and the value of the compensation factor. You can adjust the compensation factor to avoid condensation on the window. The lower the compensation factor, the lower the maximum humidity set point can be.	**Range:** 25 to 90 **Increment:** 5 **Default setting:** 80

OPERATING MODE

Step	Description	Display
A	At powering up, the ADMC will light the display and activate all LCD segments for 2 seconds. **Illuminating the LCD** To illuminate the LCD, push any of the 4 buttons. The LCD will light for 4 seconds. **Humidity display** In operation mode, the ADMC will automatically display the humidity reading. If *OFF*, --- and **Alarm** symbol are displayed, the humidity sensor is not connected or is short circuited. **Temperature display** To display the temperature, press (★). The temperature reading is displayed for 2 seconds, if --- is displayed, the temperature sensor is not connected or is short circuited. To change the scale between °C and °F, press both △ and ▽ for 3 seconds.	
B	**Humidity set point(s) display and adjustment:** **1.** To display the set point(s), press two times on △ or ▽. **2.** If Control Mode was set to Humidify only or Dehumidify only: **a.** Humidify or Dehumidify set point will be displayed during 3 seconds. **b.** To adjust set point, press △ or ▽ while the set point is displayed. **If Control Mode was set to Automatic Humidify and Dehumidify:** **a.** Humidify set point will be displayed for 3 seconds. To adjust the set point, press △ or ▽ while the set point is displayed. **b.** Press (★) to switch to the dehumidify set point. To adjust the set point, press △ or ▽ while the set point is displayed. **c.** You can press (★) to go back to display the humidify set point or go to Step 3. **3.** After 3 seconds of no activity, the humidistat will return to normal mode. **NOTE:** If set point adjustment has been locked, 🔒 symbol will be displayed.	
C	**On/Off selection:** To turn On/Off the ADMC, press the (⏻) button. Control mode will be displayed for 5 seconds. • Humidify only / OFF • Dehumidify only / OFF • Automatic Humidify & Dehumidify / OFF **NOTE:** These selections can vary according to the choice made in Step 6 of the programming mode.	

TROUBLESHOOTING

⚠ 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. If a problem persists, call Anden Tech Support toll-free at 1-800-972-3710. 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 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.

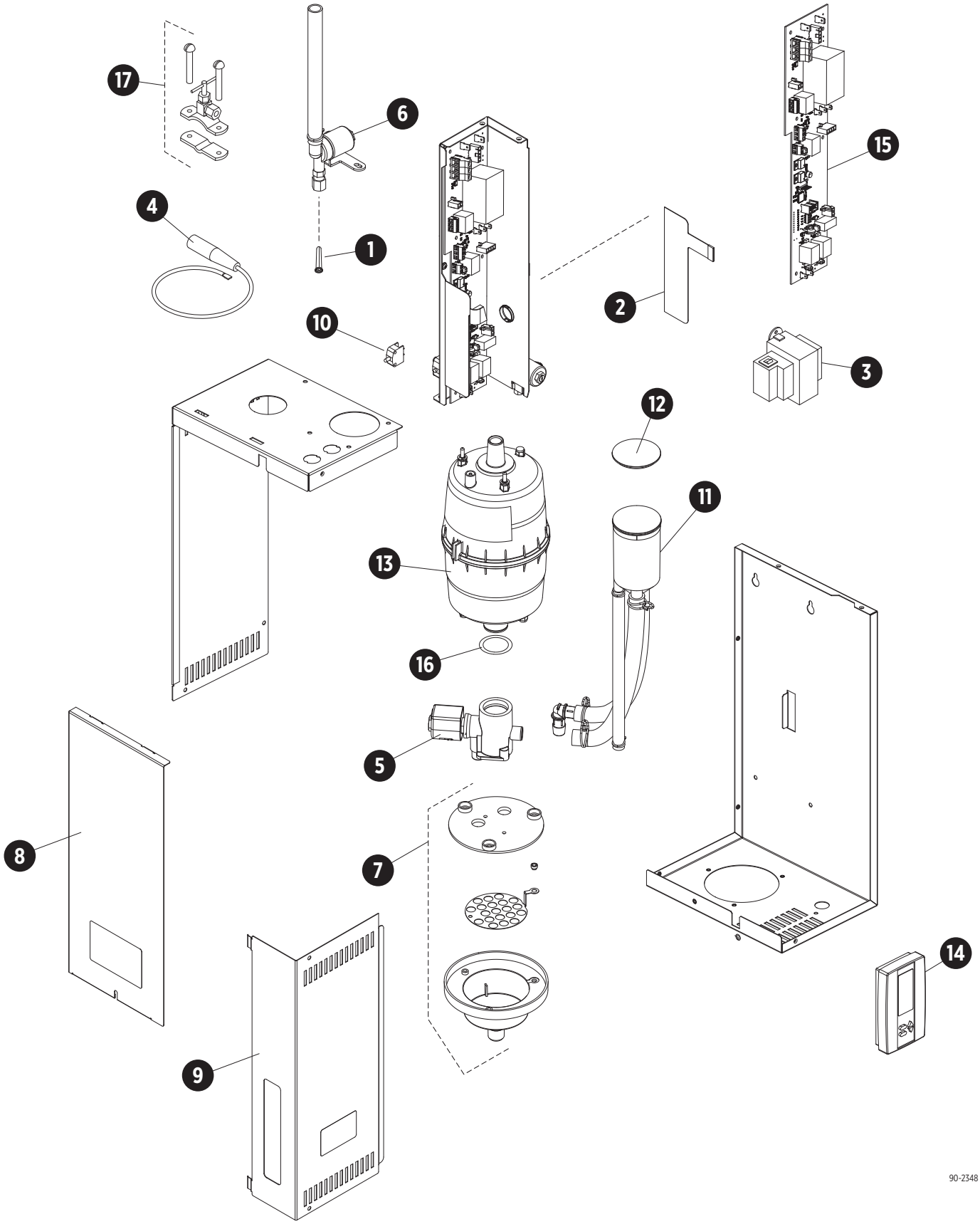
TABLE 6 – HUMIDIFIER TROUBLESHOOTING GUIDE

Problem	Possible Cause	Action
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 **FIGURE 4**.
Humidifier makes gurgling sound.	Excess condensation in steam hose.	Install Tee and Trap Model 4028 as shown in **FIGURE 4**.
		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.
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 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 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.

TABLE 6 – HUMIDIFIER TROUBLESHOOTING GUIDE		
Problem	**Possible Cause**	**Action**
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 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.

REPLACEMENT PARTS

Refer to the following page for part descriptions.



Item No.	Part No.	Description
1	4004	Fill Valve In-line Strainer
2	5532	Membrane Switch
3	5306	Universal Transformer (75 VA)
4	4978	Electrode Wires (2)
5	4983	Drain Valve
6	5531	Fill Valve
7	4985	Drain Cup Assembly
8	4986	Front Panel & Screw
9	4987	Electrical Access Panel & Screws
10	4988	Safety Interlock Switch
11	5590	Fill Cup & Hoses
12	4990	Fill Cup Cap

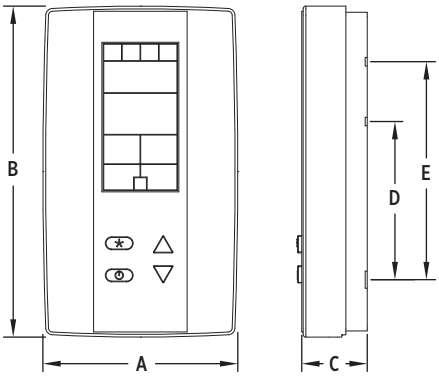
Item No.	Part No.	Description
13	AS80	Steam Canister and O-Ring
14	5558	Automatic Digital Modulating Control (ADMC)
15	5530	Control Board
16	5258	O-ring
17	4001	Saddle Valve
	4028	Drain Trap & Tee
	4592	Airflow Proving Switch
	4594	High Humidity Limit Switch
	4856	Condensate Pump (Rated for 160°F)
	4973	Steam Hose (6 ft.) & Clamps
	4974	Drain Hose (10 ft.) & Clamps

ADMC TECHNICAL DATA

Outputs	Actual humidity (0-100%RH), 0-10 Vdc / 2-10 Vdc
	Humidity set point (0-100%RH), 0-10 Vdc / 2-10 Vdc
	Humidification proportional control signal, 0-10 Vdc / 2-10 Vdc
	Dehumidification proportional control signal, 0-10 Vdc / 2-10 Vdc
	Humidification dry contracts 24 Vac, 1 A max, 3 A in-rush
	Dehumidification dry contracts 24 Vac, 1 A max, 3 A in-rush
Inputs	Window temperature sensor or outside temperature sensor (10 KΩ)
	External humidity sensor (0-10 Vdc / 2-10 Vdc) or high limit (0-10 Vdc / 2-10 Vdc)
	1 alarm status digital input (24 Vac or dry contact)
Power supply	22 to 26 Vac 50/60 Hz or 28 to 32 Vdc
Power consumption	1 VA
Set point range	10 - 90%RH (in 1% increments)
Sensor precision	± 3% or better at 40%RH and 23°C (73°F)
Proportional band	2% to 10% for control signal
Electrical connection	0.8 mm2 (18 AWG) minimum
Operating condition	0°C to 40°C (32°F to 104°F), 0-95%RH
Storage condition	-10°C to 50°C (14°F to 122°F), 0-95%RH
Temperature compensation reset feature	Automatic readjustment of set point from an Outdoor Temperature Sensor (included)
Weight	130 g (0.3 lb)

ADMC DIMENSIONS

Dimension	Imperial (inches)	Metric (mm)
A	2.85	73
B	4.85	123
C	1.00	24
D	2.36	60
E	3.27	83



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Your Research Products Corporation Anden™ Steam Humidifier is expressly warranted for five (5) years from date of installation to be free from defects in materials or workmanship.

Research Products Corporation's exclusive obligation under this warranty shall be to supply, without charge, a replacement for any component which is found to be defective within such five (5) year period and which is returned not later than thirty (30) days after said five (5) year period by you to either your original supplier or to Research Products Corporation, Madison, Wisconsin 53701, together with the model number and installation date of the steam humidifier.

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