

**Installation Instructions
and Maintenance Manual**

for

**Acu-Steam PRO Commercial Humidifier
by**

 THERMOLEC



Please read this manual carefully before beginning installation.

1. Warnings and Disclaimer – Installation Precautions and Recommendations

Please read and understand the warnings and provided instructions fully before you begin this installation and keep them handy for future reference.

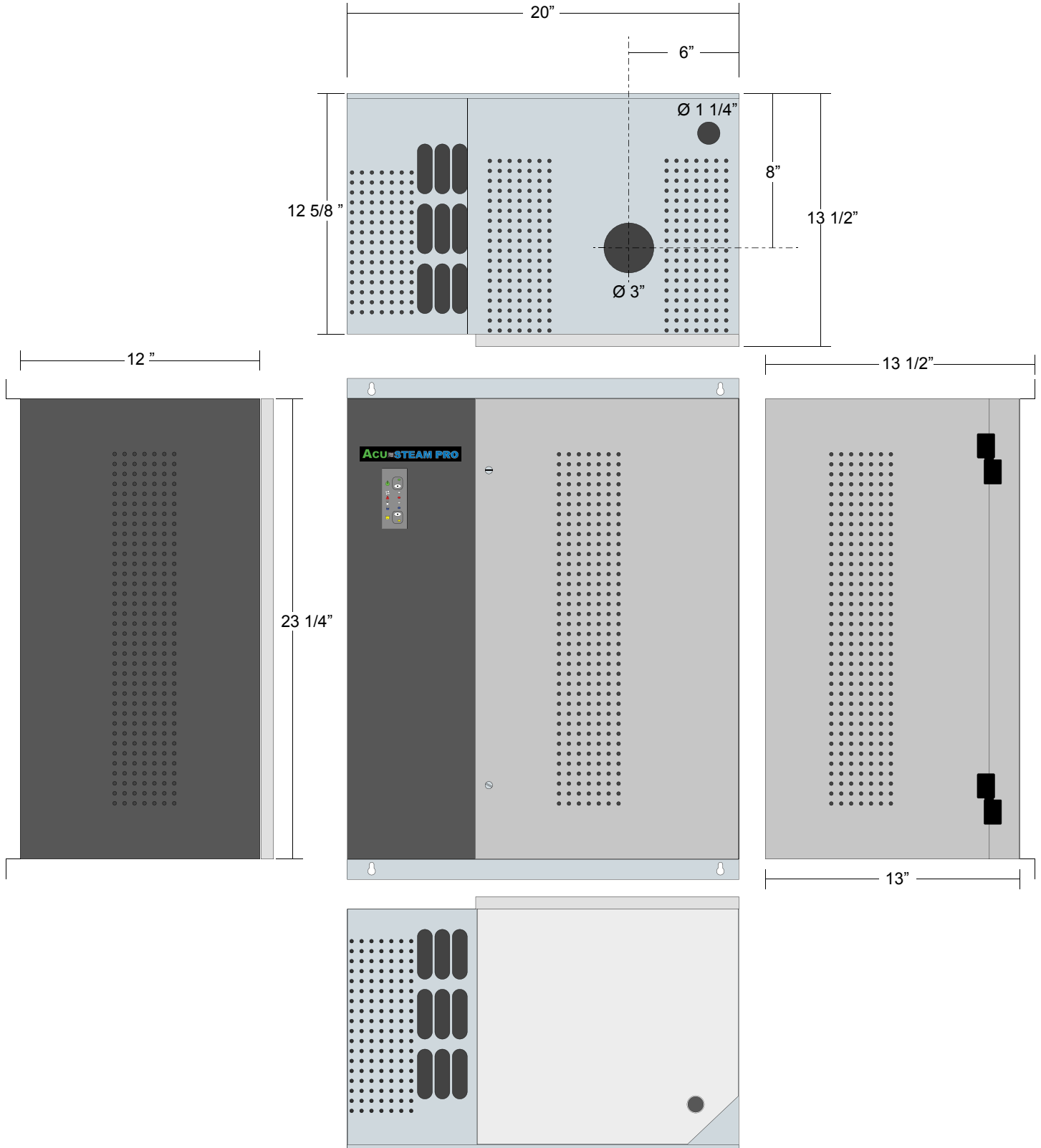
The manufacturer will assume no responsibility and the warranty will be void if the installer or the user does not adhere to the following precautions/recommendations :

- 1.1 Water quality and hardness can significantly affect the maintenance frequency of your Acu-Steam PRO humidifier. If the cold water supply exceeds 180 mg/L, the water is classified as hard and excessive scaling inside the tank reservoir is possible. If the water supply exceeds 180 mg/L, a water conditioner/softener is recommended to minimize the maintenance frequency (see section 16.).
- 1.2 This humidifier will be connected to and used under water pressure and it must be installed in such a way that if a leak occurs, the water will not cause any damage to the property. Make sure all water connections are properly installed or a water leak could occur.
- 1.3 This humidifier is intended for use on ducted forced air systems, which have at least one supply duct where a positive air pressure can be measured.
- 1.4 Do not install a humidifier where the surrounding temperature may be 32°F (0°C) or colder. Freezing water will damage the humidifier.
- 1.5 Do not install a humidifier if the city water pressure exceeds 90 psi. Check the local codes related to pressure reduction.
- 1.6 If the **supply duct pressure exceeds 2.0" Water Column (0.5 kPa) a drain valve kit (optional) is required for proper operation.**
- 1.7 The installation, wiring and plumbing of the humidifier must comply with national and local electrical, plumbing and building codes.
- 1.8 Electrical wiring and water tubes must not come in contact with sharp edges or hot surfaces.
- 1.9 Make certain an appropriate drain system is installed and there is no resistance to the flow of the discharged water.
- 1.10 Do not set the humidity level higher than that recommended or condensation damage could occur.
- 1.11 Please beware of sharp edges when you cut into a metal duct.
- 1.12 Always shut the power off before you start the installation or when doing maintenance. An electric shock could cause serious injury or death.
- 1.13 **Caution:** when you perform maintenance, please be careful because the unit can be **extremely hot**. Always allow enough time for the unit to cool down.
- 1.14 To prevent electric shock or injuries, never operate the humidifier without the covers as there are high voltage and hot components inside.
- 1.15 This humidifier will only work with non demineralized water. The maximum water supply temperature is 86 °F (30 °C)

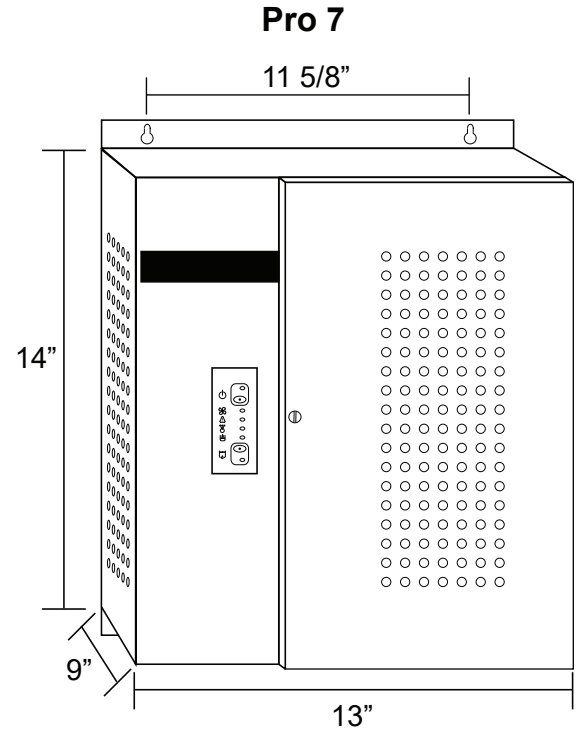
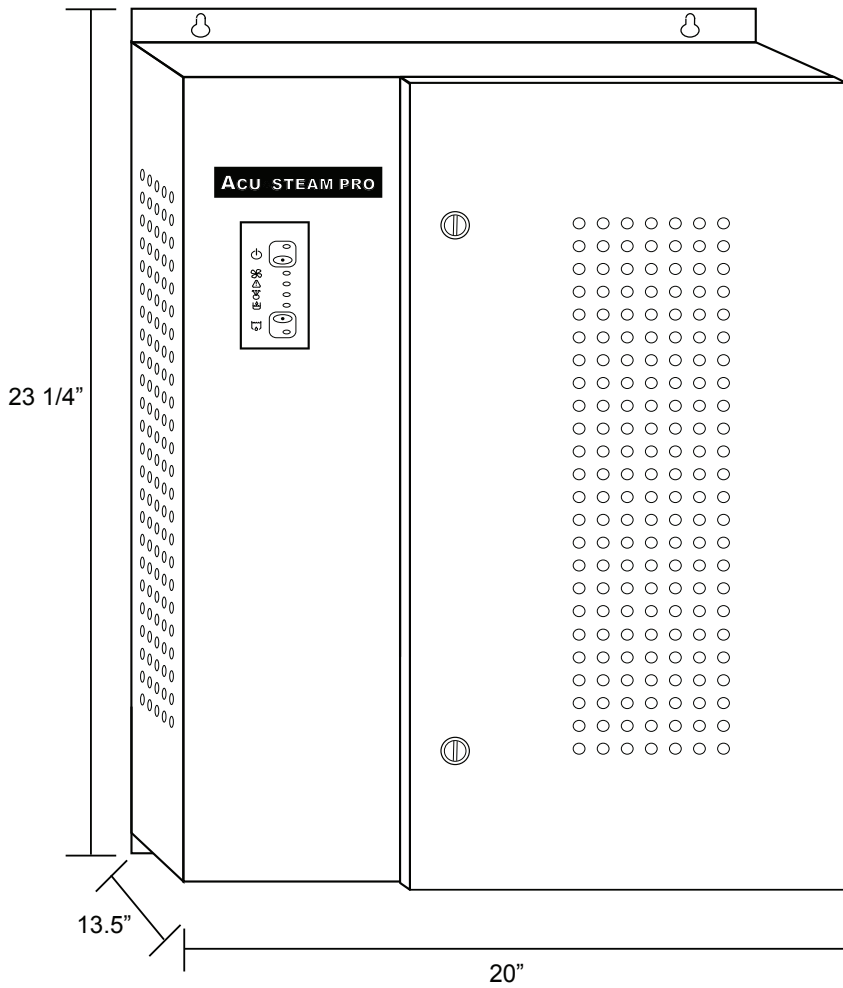


Installation must be done by a qualified electrician or HVAC contractor

2. Overview and model specifications



2.1 External view of the humidifier.

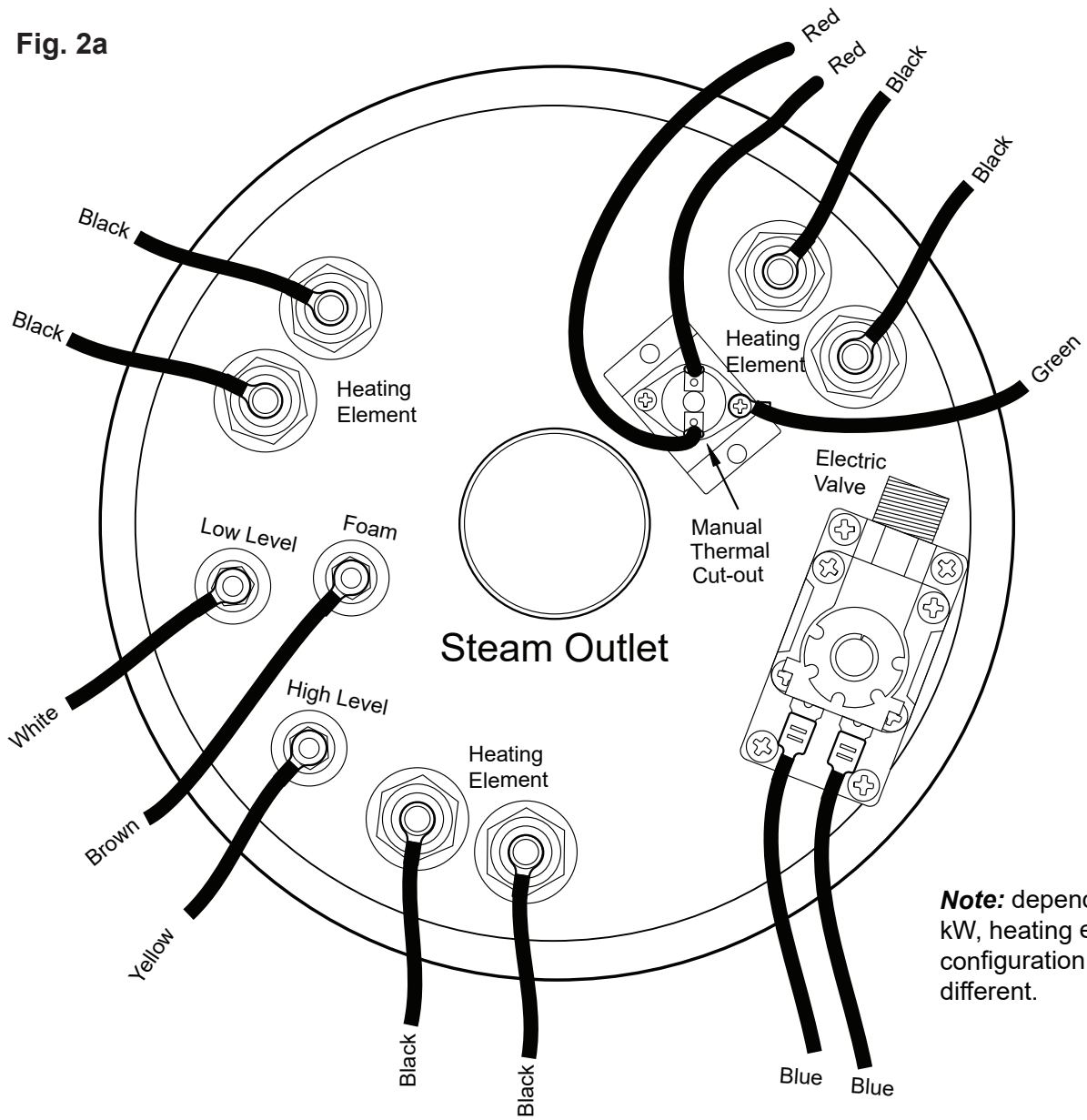


Available capacities:

	kW	Voltage / Phase					Steam Output			
		208/1	208/3	240/1	240/3	480/3	600/3	lbs/hr	kg/hr	outlet
Pro7	2.2	●	-	-	-	-	-	6.75	3.1	1.0"
Pro12	4	●	-	●	-	-	-	12	5.5	1.5"
Pro18	6	●	●	●	●	●	●	18	8	1.5"
Pro24	8	●	●	●	●	●	●	24	10.9	1.5"
Pro30	10	-	●	●	●	●	●	30	14	1.5"
Pro36	12	-	-	-	-	●	●	36	16.5	1.5"
Pro40	13.5	-	-	-	-	●	●	40	19	1.5"
Pro50	16	-	-	-	-	●	●	50	21.8	1.5"

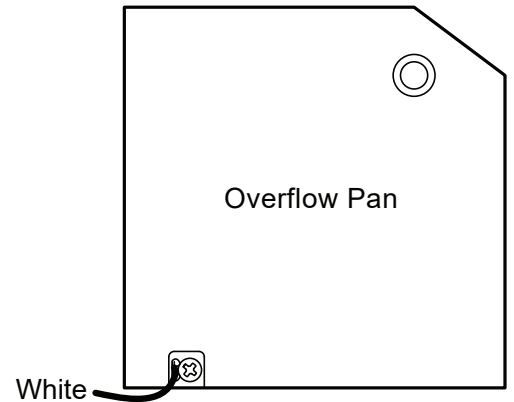
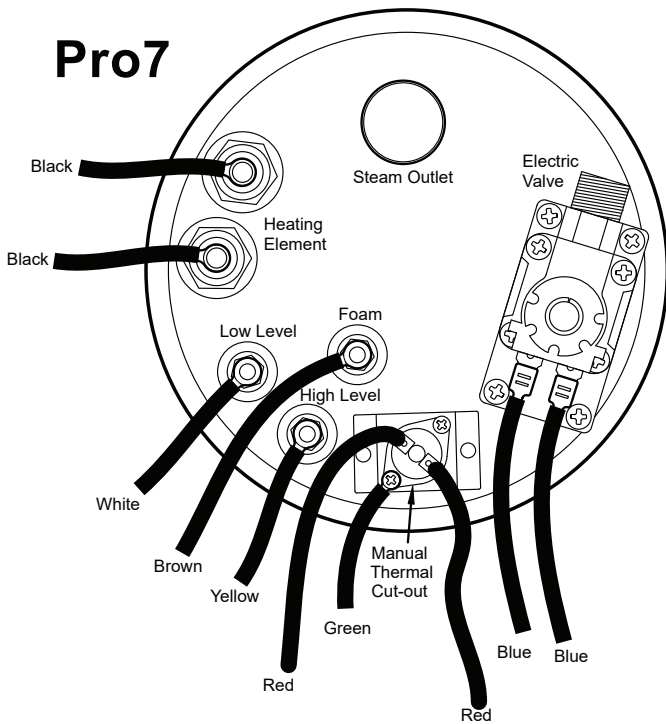
For other capacities consult factory

Fig. 2a



Note: depending on kW, heating element configuration may be different.

Pro7



3. How to Control the Humidity

3.1 Humidity level and comfort are personal matters but it is generally acknowledged that a Relative Humidity of 35-45% is desirable. However, you should take the outside temperature into consideration before setting the humidity level in order to avoid condensation on the windows. Usually, a narrow strip of condensation around or at the bottom of the window is considered as normal.

3.2 If you installed an Acu-Steam PRO humidistat and an outdoor sensor, this adjustment will be done automatically through a function called outdoor reset. The outdoor sensor automatically reduces the humidistat setting according to the outdoor temperature during cold days; it does the opposite during mild days. Please see [Fig. 3b](#) for the percentage of relative humidity on the electronic humidistat label. The digital readout normally displays the actual humidity and will blink when adjusting the knob to display the setpoint.

3.3 If you are using a humidistat by others, the humidity adjustment according to the outside temperature might have to be done manually. For your information, the following table shows the recommended setting of the humidistat according to the outside temperature. Please see [Fig. 3a](#).

<u>Outside Temperature</u>	<u>Recommended Setting</u>
-22°F (-30°C)	15%
-13°F (-25°C)	20%
-4°F (-20°C)	25%
+5°F (-15°C)	30%
+14°F (-10°C)	35%
above 23°F (-5°C)	40%

Fig. 3a

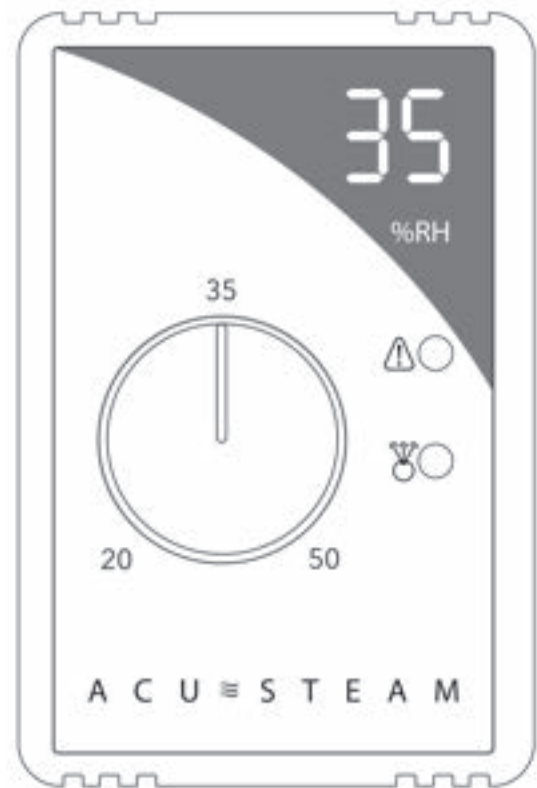


Fig. 3b

3.4 No matter which humidification system you are using, please do not forget that the humidity level cannot adjust quickly. It may take some time to build up the humidity to your comfort level.

3.5 If the space remains unoccupied during the winter season, set the humidistat to the minimum set point in order to prevent condensation.

4. Functions of the Electronic Circuit

4.1 The electronic board located inside the unit controls all of the humidifier functions. The front LED panel is equipped with pilot lights indicating the status of the humidifier. Please see [Fig.4a](#). Please refer to Article 4.2 for the description of the functions.

The red pilot light, which is a warning light, can either glow all the time or flash when activated. In case of error, the humidifier enters standby mode. The flashing of the pilot lights indicates which error has occurred. The error recognition sequence is as follows :

- The green pilot light near the power button blinks once;
- The red light flashes a certain number of times, this is the error code;
- A pause with no light at all;
- Another blink of the green light, once;
- Another series of flashing of the red light;
- And so on until the condition is reset or service is performed.
- Shutting the power OFF at the breaker in the main panel or depressing the power button until the green light is fully on will reset the error code.

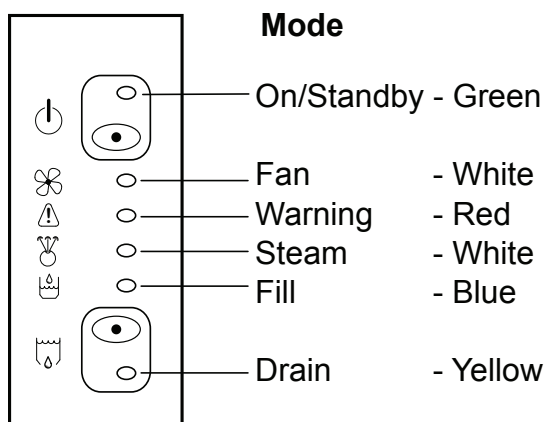





Fig. 4a

4.2 The Acu-Steam PRO humidistat also has two pilot lights to indicate the current status. The green light is lit when the humidistat is demanding for humidity, thus activating the boiling cycle. The red light indicates a warning and reproduces the more serious warning codes from the humidifier control panel when connected with ON/OFF control. If ever the red light is lit or flashing on the humidistat, you know immediately that the humidifier needs attention.

<u>Display</u>	<u>Status</u>	<u>Description</u>
 On/Standby Green light	OFF Blinking ON	The humidifier has no power – Breaker is OFF. The humidifier has power, but is in standby mode. The humidifier has power and is functional.
 White button		Press to put the humidifier in standby mode. The green light is blinking. Press and keep depressed 3 seconds to power or reset the humidifier. The green light is ON.
 Fan White light	ON	The fan control is activated.

**Warning**

Red light

ON

An abnormal condition occurred.
Please refer to the error code table in Section 7.

**Steam**

White light

ON

The humidifier is heating water to produce steam.

**Filling cycle**

Blue light

ON

The electric water valve is open thus filling the humidifier.

**Draining cycle**

Yellow light

ON

The humidifier is in draining mode.



White button

The drain button flushes the tank and empties the water
(a small amount of water will remain in the tank).

Number of flashes of the red light	Error Description	Humidifier Status	Actions to be Taken by the Technician	Reset
OFF	No error	The humidifier is working fine	None	
Continuous ON	The flood sensor under the tank senses water in the pan.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is OFF.	Turn power off. Check for leaks around the tank clamp, SW valve and drain tube. Make sure tank latches align and gasket is sealing properly.	Automatic Reset when Overflow pan dries up.
1	Reserved for future use			
2	Water sensor error	Scale formed on sensor. Humidifier suspends operation.	Check and clean or replace sensor	Reset when switching main power OFF and ON
3	Inadequate water supply and/or marginal drainage. The supply valve was open for more than 6 minutes.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is ON.	Turn power off. Check SW valve circuit for 24V DC at the valve. Refer to manual (p. 10) and check for proper drain installation. Make sure SW shut-off valve is open, SW valve is responding and SW tube is clear of debris.	Automatic Reset after 5 min or after switching power off and on.
4	Inadequate drainage. The tank did not drain or the draining cycle is too long.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is blinking.	Turn power off. Check for proper drain setup by referring to manual (p. 10). Check and clean tank, SS siphon tube and silicon drain tube if necessary.	Reset when switching main power OFF and ON
5	The air pressure switch does not detect enough air pressure OR the high limit HSTAT senses extremely high humidity in the duct.	Humidifier immediately suspends the ongoing operation. The unit goes back to normal operation as soon as the error condition disappears. The power green light is ON.	Check if the FF motor is running. If not, turn FF to continuous operation. Check flow sensor (pitot tube) in duct for blockage, then make sure plastic tube is connected properly from flow sensor to PD switch (see manual). Change furnace filter if needed.	Automatic Reset when error conditions disappear
6	Temperature inside the tank exceeded the high temperature cut-out setting.	The high temperature cut-out has tripped. The humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is blinking.	Turn power off. This is a serious condition and will likely require assistance from a service technician. Call 1-800-336-9130.	After pushing on the thermal cut-out button, automatic reset when switching main power ON
7	Reduced power capacity	Not working at full power capacity. Humidifier suspends operation	Check elements and SSRs	Reset when switching main power OFF and ON

Legend: SS = stainless steel, FF = furnace fan, SW = supply water, HLS = high level sensor, LLS = low level sensor

5. Unpacking the Unit

5.1 Contents

Please inspect the carton's contents and report any missing parts or damage immediately.

- 1 AcuSteam Pro Humidifier
- 1 2' Steam hose
- 1 Duct mount Highlimit humidistat
- 1 Installation/maintenance manual
- 1 Plastic bag containing installation material and hardware
- 1 Inline water filter (to be changed yearly)

NOTE : The electronic humidistat and the outdoor reset sensor are optional. The humidistat can be either wall type (RH) or duct type (DH).

Kits and available options (excluding Pro7):

STM508 High pressure drain valve kit (for duct pressure > 2.0" water column, 0.5 kPa)

STM504 inline water filter (to be changed yearly)

STM507 replacement water level sensors/tune-up kit


STMB501 replacement tank

STM513 O-Ring gasket

STM516 Steam hose (by the foot)

6. Installing the Humidifier

Detailed Installation Instructions

 This unit is design to be installed on a solid flat surface near the ductwork of a forced air system.

For ease of service, keep a minimum space of 24" in front of the unit.

6.1 Remove both covers by first opening the tank cover and unhook it. Then unscrew the screws holding the electrical cover and pull it towards you.

6.2 Remove the white wire connected on the water pan at the bottom of the unit. This is the overflow sensor.

6.3 Remove the overflow pan by sliding towards you.

6.4 The humidifier must be installed on a vertical flat surface.
Please see [Fig. 6.a](#) for necessary clearances around the humidifier.

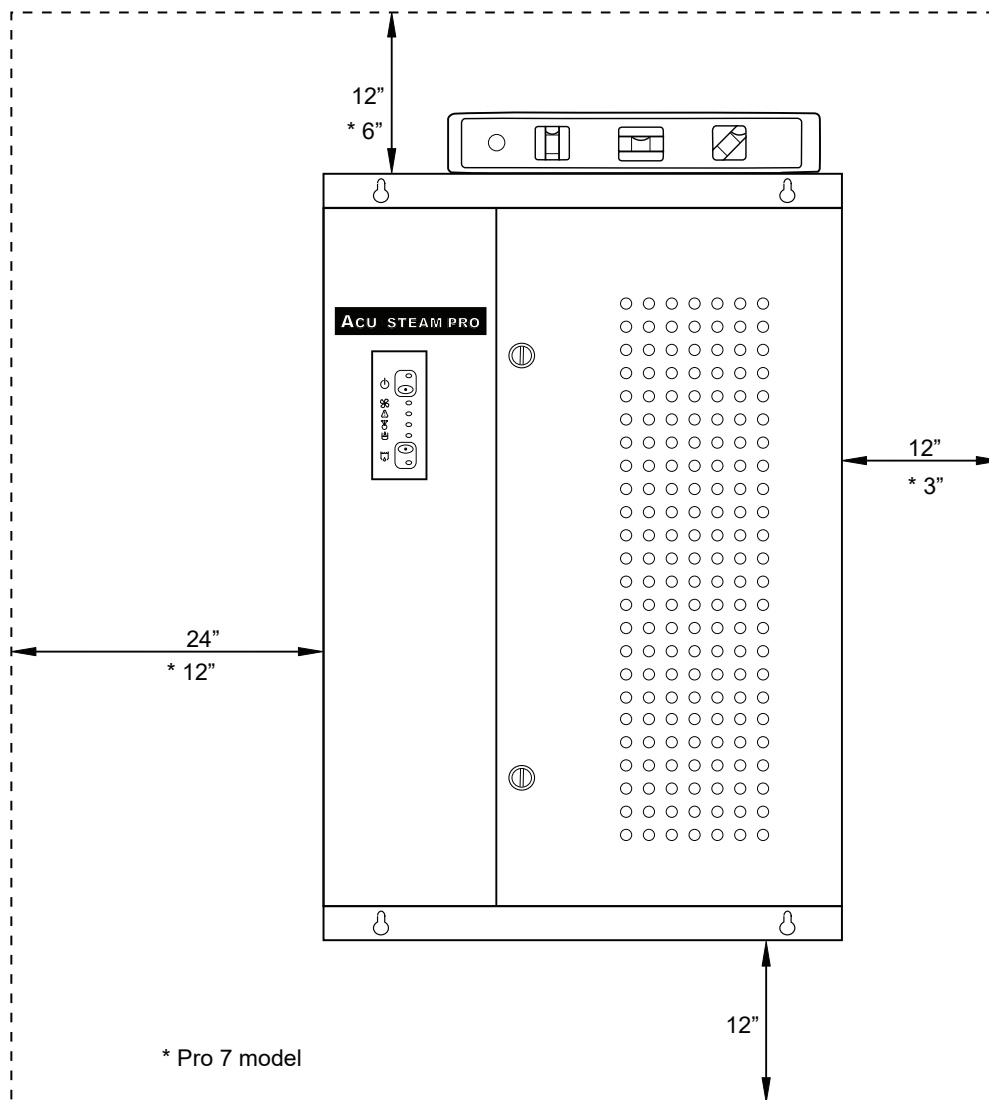
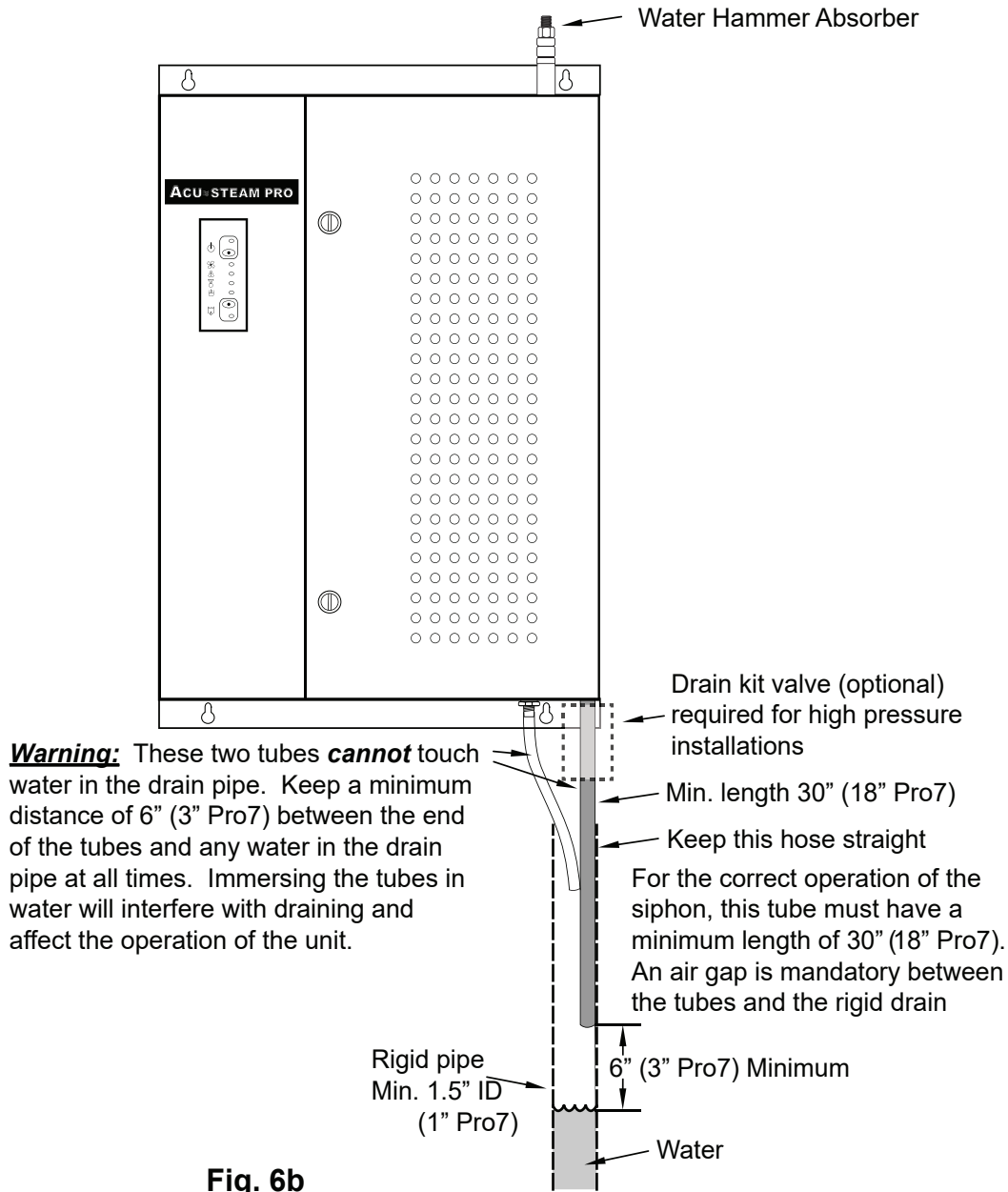


Fig. 6a

6.5 A rigid drain pipe has to be installed under the unit and connected to the main building drain. We recommend a standard 1-1/2" (1" for Pro7) I.D. ABS plumbing tube to do the installation. The two flexible tubes (main drain and overflow) coming from the humidifier and which will be inserted in the rigid pipe, require a minimum free vertical length of 30" (18" for Pro7) below the cabinet. It is very important to leave an air gap between the rigid pipe and the tubes to allow the siphon to function properly. The flexible tubes cannot touch any water contained in the drain pipe. Please see [Fig. 6b](#).



6.6 Since the unit is equipped with water level sensors, it is important to install it level from left to right and from back to front.

6.7 Draw a level horizontal line on the wall and install two screws (# 8 minimum) from center to center of the mounting holes to hook the humidifier on the wall, then install two screws at the bottom of the unit and tighten them partially.

6.8 Level the unit and tighten the four screws firmly.

7. Installing the Water Supply and drain pan connections

Important Notes :

- Close the main water supply valve before beginning.
- We recommend installing a quarter of a turn shut off valve (not supplied) near the unit. This supply valve (not supplied) must be attached to a **cold** water pipe only, easily accessible from the Acu-Steam PRO unit. Since the unit is draining hot water, **cold** water is added to reduce the temperature before sending the water to the drain.
- In case of hard water or water containing particles, we recommend installing a strainer in the water line to protect the solenoid valve. See section 1.1 for additional information and recommendations concerning water quality.

7.1 A water line filter is supplied and should be installed between the shut off valve and the water hammer absorber. It is strongly recommended to flush the supply water line for 30 seconds before connecting the filter. Simply push the tubing (plastic or copper) into the quick connect fitting until it bottoms out. Once the filter is connected it is recommended to flush the supply water through the filter for another 30 seconds (before connecting to humidifier). *We recommend replacing the filter once a year during yearly maintenance.* Please see [Fig. 7a](#).

7.2 At the end of the water hammer absorber, connect the water supply tube, using the same type of fitting used on the water supply valve. Tighten the compression nut, without stripping, with two wrenches, one to hold the water hammer end, and one to turn the compression nut. Please see [Fig. 7b](#).

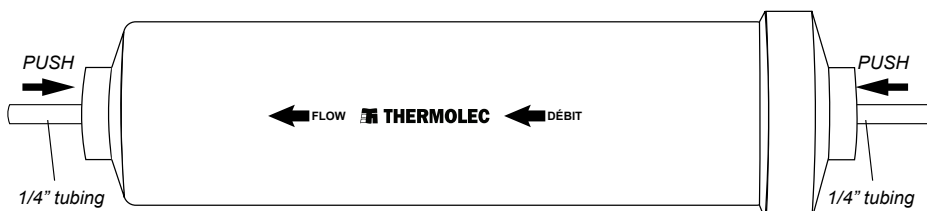


Fig. 7a

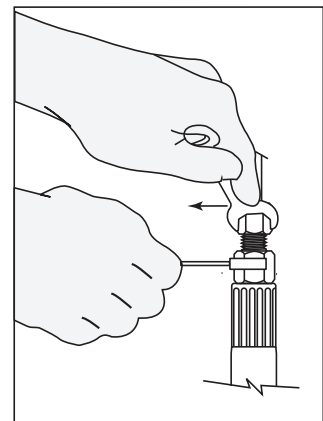


Fig. 7b

Keep the supply valve closed for now, you will open it during the start-up procedure.

7.3 Take the 5/16 dia. plastic tube and push one end on the connector located at the bottom of the overflow pan. Please see [Fig. 7c](#) and [Fig. 7d](#).

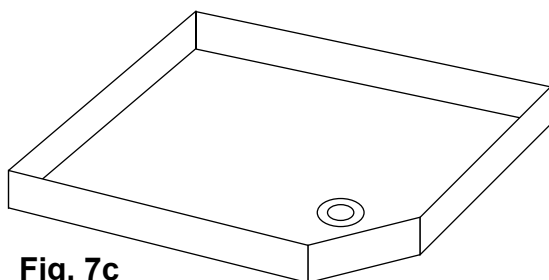


Fig. 7c

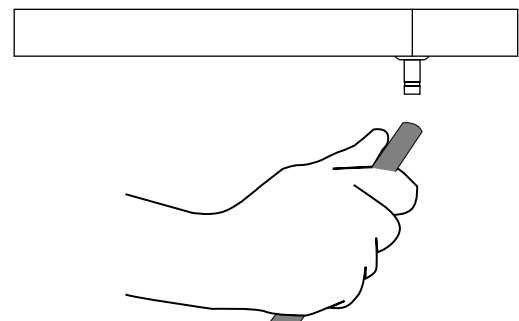


Fig. 7d

- 7.4 Install the overflow pan under the tank by sliding it in the channel.
- 7.5 Reconnect the white wire for the overflow sensor on the overflow pan.
- 7.6 Cut the two drain tubes and insert them in the rigid pipe. Note that the main silicon **drain tube must have a minimum length of 30"** to allow the siphon to work properly. It is important to leave an air gap between the soft tubes and the rigid pipe.
- 7.7 Open the water supply valve (fully counter-clockwise) to bring water to the humidifier and let the water pressure enter the system.
- 7.8 Follow the water supply path completely and carefully check for leaks at the fittings.

8. Installing the Steam Diffuser and the Steam Hose

Steam diffusers must be selected based on steam output and duct configuration. For this reason they are not supplied with the unit and are sold separately. ***For improved performance Acu-Steam PRO steam diffuser tubes are insulated.***

8.1 Proper installation of the diffuser and steam hose is critical for the trouble-free operation of the humidifier. Please find an accessible location on the duct and make sure you have a **minimum length of 60"** of straight duct downstream (without elbows or other obstructions on which the steam could condensate), to allow the steam to disperse easily into the airflow. Once a suitable location has been found make a 2" middle insertion hole in the warm air duct for the steam diffuser. For a horizontal duct, make the 2" hole in the lower third of the duct height. Please see Fig. 8a. For a vertical duct, make the 2" hole in the middle of the duct. Please see Fig. 8b.

Note: For supply duct pressure exceeding 2.0" Water Column (0.5 kPa) a drain valve kit (optional) is required for proper operation.

Warning : Before installing anything on a duct, always check that you are not about to cut or drill into an air conditioning coil or electrical accessories.

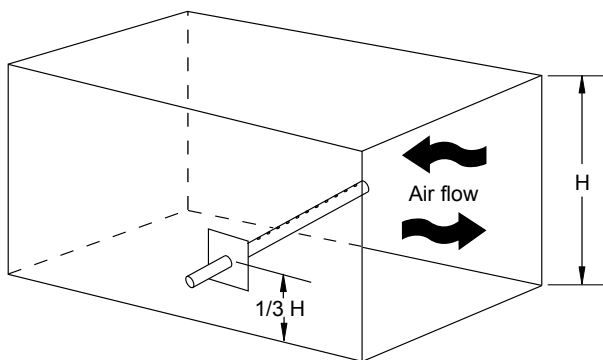


Fig. 8a HORIZONTAL DUCT

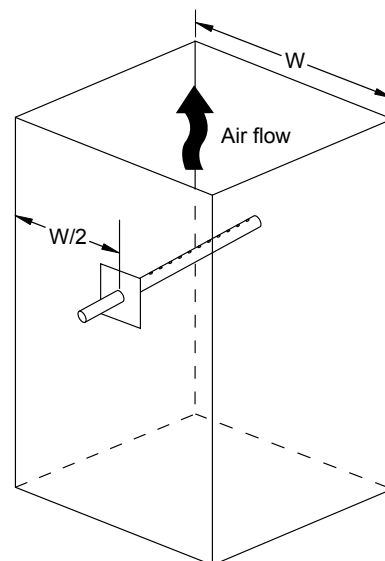


Fig. 8b VERTICAL DUCT

VERTICAL DUCTS:

The diffuser tubes should be rotated either direction for improved steam dispersion or smaller ducts.

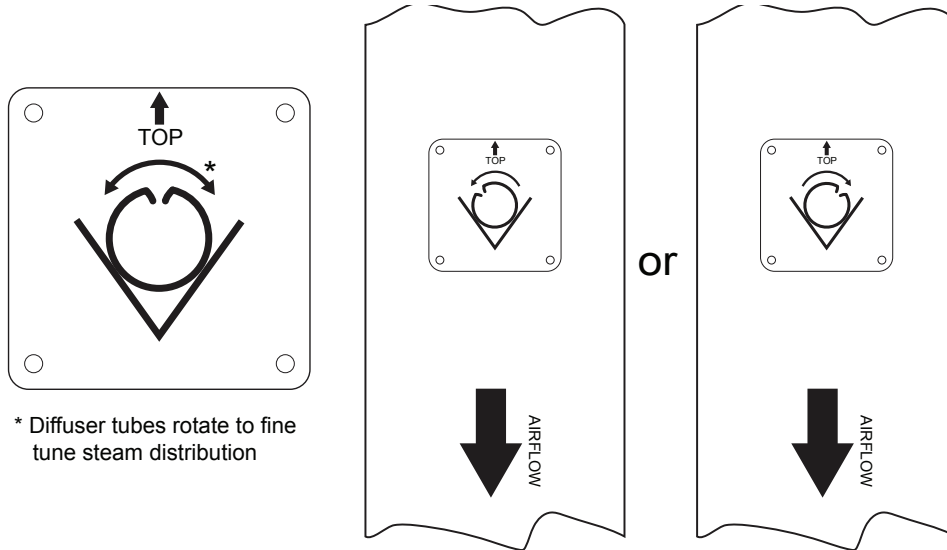


Fig. 8c

HORIZONTAL DUCTS WITH MULTIPLE DIFFUSERS:

Multiple diffusers in horizontal ducts should be installed in a staggered configuration.

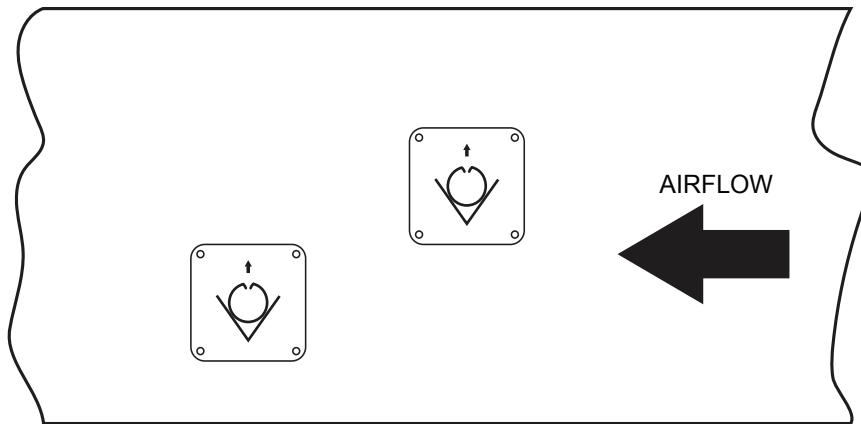
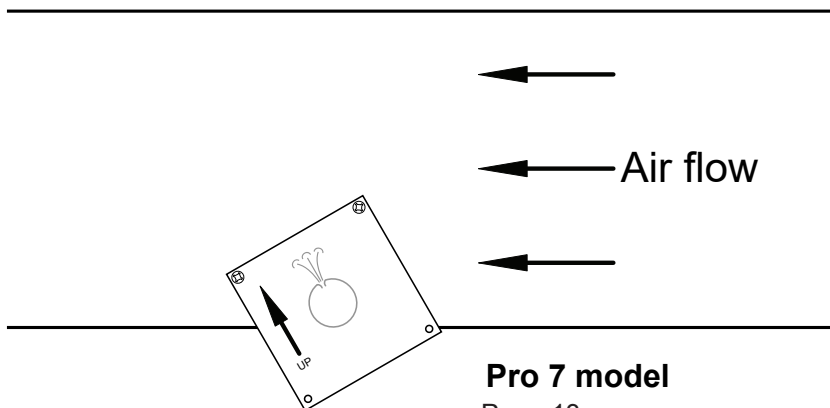


Fig. 8d

IMPORTANT for Pro 7: For horizontal ducts that are only 8" to 10" inch high, install the diffuser at the very bottom of the duct with only the top two screws and rotate approximately 30° away from the airflow to avoid condensation forming at the top of the duct.



To avoid excessive humidity in the ductwork a high limit humidistat (**included with unit**) *must* be installed.

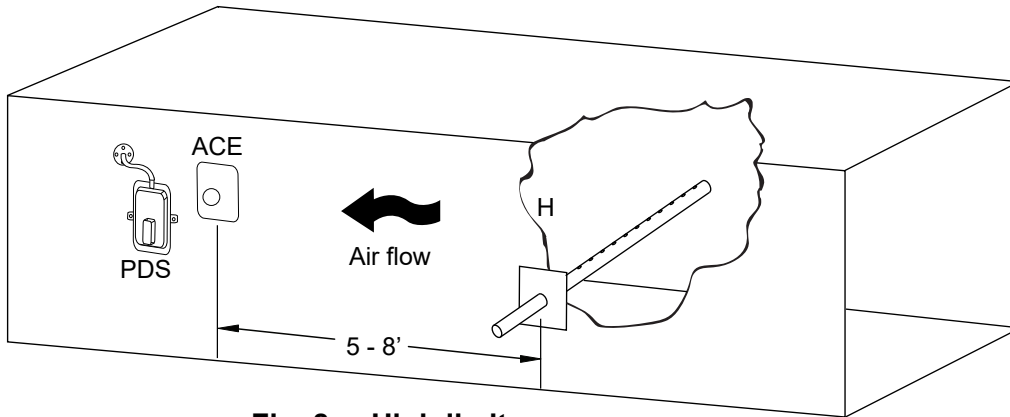
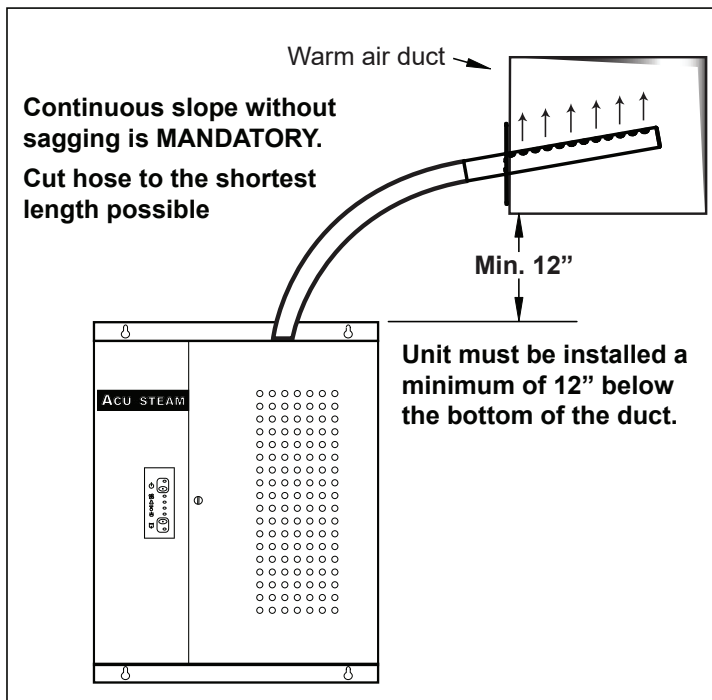


Fig. 8e High limit sensor

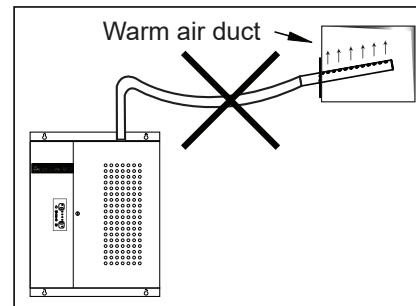
The high limit humidistat should be installed 5 to 8 feet downstream from the steam difuser follow the wiring diagram for proper connections.

WARNING : Do not let the hose sag when it is connected to the duct. Please see Fig. 8f.

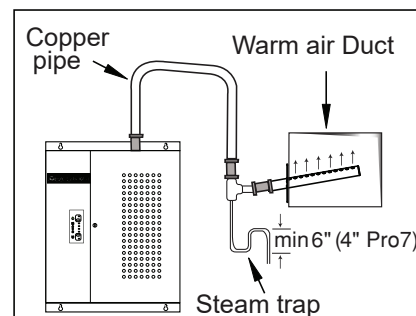
A sufficient slope with ***no horizontal section is mandatory*** to allow any condensation to flow back naturally to the water tank. Please see Fig. 8g. If condensation water accumulates in the hose, the steam will not be able to escape normally through the diffuser and will lead to a malfunction of the humidifier. Please keep in mind that the hose will soften when heated and will have a tendency to sag.



IDEAL
Fig. 8g



WRONG
Fig. 8f



CORRECT
Fig. 8h

NOTE : If it is not possible to get enough slope for the condensation to return properly to the water tank, then an S-shaped steam trap (not supplied) must be installed at the lowest point of the steam hose. This steam trap hose should have a minimum height of 6" (4" for Pro7). **For supply duct pressure exceeding 2.0" Water Column (0.5 kPa) a drain valve kit (optional) is required for proper operation and increase steam trap to 8"**. Please see Fig. 8h.

9 Installing the Air Pressure Probe

9.1 The pressure probe (also called a Pitot tube) connected to the pressure differential switch checks whether there is enough air pressure in the (warm) air duct to activate the humidifier.

9.2 The probe can be installed in either the warm air or cold air return duct. A 24" long plastic tube is supplied to connect the pressure probe to the PDS.

9.3 Drill a hole 3/8" dia. in an accessible location in the air duct.

9.4 Insert the probe and fasten it's base to the duct using two sheet metal screws. The arrow visible on the probe flange indicates the air flow direction in the duct (i.e. the curved end of the probe has to face the air flow) Please see [Fig. 9a](#) and [Fig. 9b](#).

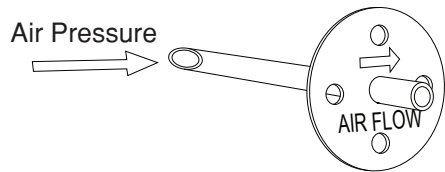


Fig. 9a

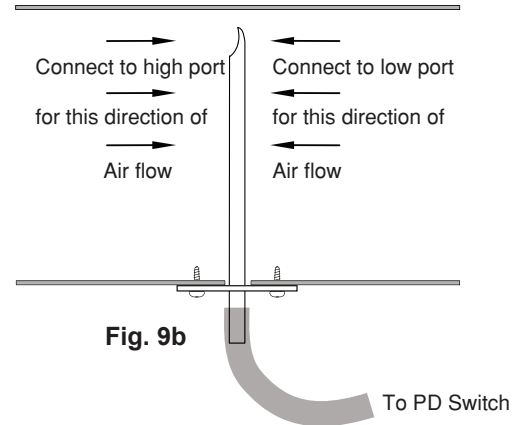


Fig. 9b

10. Making Electrical Connections

NOTE : All internal wiring is done at the factory. All external wiring shall be done by a qualified electrician and must conform to procedures, regulations and local codes.

10.1 A dedicated breaker in the main panel (or fused disconnect) must be installed.

10.2 Ensure that the wire size and protection equipment conform to the sizes required by the Electrical Code.

10.3 Wire according to the wiring diagram supplied in the cover of the unit.

10.4 Starting the fan is mandatory with this type of humidifier. The electronic controller board has a control relay that supplies a **dry contact** at the terminals marked "F F" to start the furnace fan. The installer must use this contact to engage a relay that starts the furnace fan motor when required. Please refer to the furnace instruction manual to find the right wiring diagram. The standard rating of these contacts is 3A @ 240VAC or 6A @ 120VAC. Please do not exceed these ratings.

10.5 The DIP switches, located on the bottom of the circuit board (see Fig 10a), are set by the factory based on the kW of the elements used in the unit.

NOTE: Changing the DIP switches will affect the function of the unit and may cause undesirable results with improper settings.

Switch numbers on DIP-switch (THF1905 firmware)			
1	2	3	POWER (KW)
ON	ON	ON	4 / 1 PH
OFF	ON	ON	6 / 1PH
OFF	ON	ON	6 / 3PH
OFF	OFF	ON	8 / 1PH
ON	ON	OFF	10 / 1PH & PRO7
OFF	ON	OFF	12 / 3PH
ON	OFF	OFF	13.5 / 3PH
OFF	OFF	OFF	15.5 / 3PH

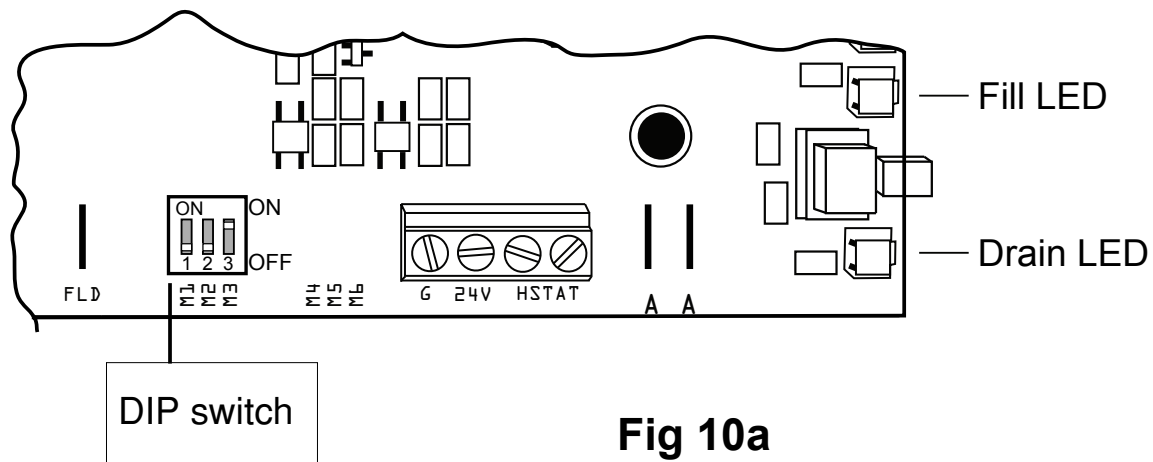


Fig 10a

11. Installing and Connecting to a Humidistat

11.1 See wiring diagrams in section 19 for proper connection. When using an Acu-Steam electronic humidistat with outdoor sensor please refer to the instructions included with the humidistat (see page 5, sections 3.1 through 3.5 explain the functions of the Acu-Steam wall and duct humidistats). If you decide to use a standard mechanical humidistat by others, connect the mechanical humidistat between the terminals marked GND (ground) & HSTAT ON/OFF on the humidifier electronic board.

NOTE:

The Acu-Steam PRO board has a memory that remembers the last sequence of operation when the power is turned off, hence the unit might start at step 2 or 3 when you put the power back on. Also, timings may slightly vary depending on the capacity of the unit, the pressure of the water inlet and the quality of the water.

12 Working Principle :

12.1 Acu-Steam PRO produces humidity from **steam** dispersed directly into the supply duct.

12.2 A humidistat (installed either on the wall or the air return duct) controls the unit. You set the knob of the humidistat according to your desired level of humidity (35-45% recommended). Please read section 3 about the Acu-Steam humidity control.

12.3 When the humidistat senses a need for humidity, it starts the humidification process.

12.4 The tank fills with water.

12.5 The electronic control starts the blower fan to move the air as the humidifier starts boiling water and producing steam. If the fan cannot start (i.e. there is no air movement to transport the steam or insufficient air pressure), the humidifier stops itself. Please note that it may take a few minutes to bring the water to a boil. The steam exits the water tank through the steam hose, moves through the steam diffuser installed in the warm air duct and is released into the duct where it mixes with the moving air.

12.6 As water evaporates, the electric valve opens as needed to replenish the water in the tank.

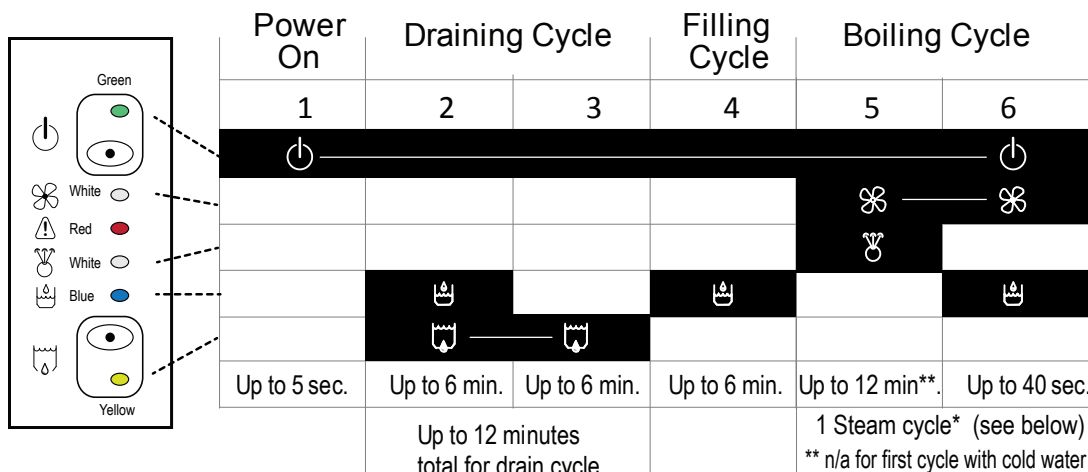
12.7 When the humidity reaches the desired level, the humidifier stops producing steam. In order to remove scale and keep the tank as clean as possible, the humidifier drains after a certain number of steam producing cycles or when it detects foam conditions. If there is still a demand from the humidistat after draining, the tank refills and starts to produce steam again. This process is part of the self-cleaning feature.

12.8 When the humidistat is satisfied, the fan continues to run for a short period of time in order to eliminate the steam from the ducts and the unit goes to ready mode, waiting for the next call from the humidistat.

13. Start-up and Test Procedure

- 13.1 Turn the breaker (or disconnect switch) “ON” to supply power to the humidifier. The green light comes ON to confirm that the unit is ready to work (after initialization).
- 13.2 Test of the On/Standby button. Press the white button once. The green light goes OFF then flashes, indicating that the unit is in standby mode but still powered. Press the white button again and keep it depressed for 3 seconds to power the humidifier. The green light will come ON, confirming that the unit is ready to work.
- 13.3 Turn the humidistat clockwise past the middle of the scale to create a demand for humidity.
- 13.4 The tank fills to the proper water level.
- 13.5 The fan control starts the fan to move the air as the humidifier starts boiling water and produces steam. If the fan cannot start, the humidifier suspends the ongoing operation. If the air pressure is insufficient, the unit will stop by itself. Please note that it may take a few minutes to bring the water to a boil. The steam exits the water tank through the steam outlet and steam hose.
- 13.6 The steam moves through the hose to the diffuser and is released into the warm air duct where it mixes with the moving air.
- 13.7 As water evaporates in the tank, the electric valve opens as needed to maintain the proper water level.
- 13.8 When the humidity reaches the desired level the humidifier stops producing steam. In order to eliminate the residues and keep the tank as clean as possible, the humidifier drains after a certain maximum number of boiling – refill cycles or water foam condition detected, whichever comes first. If there is still a demand from the humidistat after draining, the tank refills and starts to produce steam again.
- 13.9 When the humidistat is satisfied, the fan continues to run for a short period of time in order to eliminate the steam from the ducts.
- 13.10 When everything is working fine, put both covers back on the unit and attach them with the screws (electrical cover) and by turning the 1/4 turn latch to the right (tank cover).

13.11 Sequence of Operation.



* The unit will repeat this cycle until the humidistat is satisfied or the selected number of cycles is reached or foam conditions detected before going to the draining cycle. If there is no more demand for humidity, the unit will automatically go into ready mode until the next demand. If there is no demand for 7 days, the unit will flush and drain the tank.

14. What To Do if a Malfunction Occurs

14.1 Count and take note of red warning flashes. Shut the main power OFF and restart the humidifier to see if the error code (flashing red light) disappears. The red light will flash again if the error condition still exists.

14.2 If you see a water leak, follow the water supply tube and close the valve installed on the water pipe located near the humidifier.

14.3 Please refer to the error code table to identify the possible cause of the malfunction and the actions that you can take.

14.4 Should the problem persist, please call your service company for they are the best qualified to help you. Describe the problem to them and mention the error code you observed on the front panel. They may be able to help you solve the problem over the phone. If not, they can call our technical service department.

14.5 Should you attempt to look at the unit yourself, please apply all appropriate safety measures. - Shut the main power OFF and ***wait for the unit to cool before you open it.***

15. Description of Error Codes

Number of flashes of the red light	Error Description	Humidifier Status	Actions to be Taken by the Technician	Reset
OFF	No error	The humidifier is working fine	None	
Continuous ON	The flood sensor under the tank senses water in the pan.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is OFF.	Turn power off. Check for leaks around the tank clamp, SW valve and drain tube. Make sure tank latches align and gasket is sealing properly.	Automatic Reset when Overflow pan dries up.
1	Reserved for future use			
2	Water sensor error	Scale formed on sensor. Humidifier suspends operation.	Check and clean or replace sensor	Reset when switching main power OFF and ON
3	Inadequate water supply and/or marginal drainage. The supply valve was open for more than 6 minutes.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is ON.	Turn power off. Check SW valve circuit for 24V DC at the valve. Refer to manual (p. 10) and check for proper drain installation. Make sure SW shut-off valve is open, SW valve is responding and SW tube is clear of debris.	Automatic Reset after 5 min or after switching power off and on.
4	Inadequate drainage. The tank did not drain or the draining cycle is too long.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is blinking.	Turn power off. Check for proper drain setup by referring to manual (p. 10). Check and clean tank, SS siphon tube and silicon drain tube if necessary.	Reset when switching main power OFF and ON
5	The air pressure switch does not detect enough air pressure OR the high limit HSTAT senses extremely high humidity in the duct.	Humidifier immediately suspends the ongoing operation. The unit goes back to normal operation as soon as the error condition disappears. The power green light is ON.	Check if the FF motor is running. If not, turn FF to continuous operation. Check flow sensor (pitot tube) in duct for blockage, then make sure plastic tube is connected properly from flow sensor to PD switch (see manual). Change furnace filter if needed.	Automatic Reset when error conditions disappear
6	Temperature inside the tank exceeded the high temperature cut-out setting.	The high temperature cut-out has tripped. The humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is blinking.	Turn power off. This is a serious condition and will likely require assistance from a service technician. Call 1-800-336-9130.	After pushing on the thermal cut-out button, automatic reset when switching main power ON
7	Reduced power capacity	Not working at full power capacity. Humidifier suspends operation	Check elements and SSRs	Reset when switching main power OFF and ON

Legend: SS = stainless steel, FF = furnace fan, SW = supply water, HLS = high level sensor, LLS = low level sensor

16. Maintenance

WARNING : The water tank and its contents can become *extremely hot*. Please be careful before proceeding.

As with any evaporative water device, some minerals normally dissolve in the tank and will create varying degrees of deposits inside the tank. Even though the unit drains and cleans itself during normal operation, it will require a minimum annual maintenance check (see sections 16.5 through 16.8) to assure all humidifier functions and components are operating properly.

16.1 Drain the water from the tank. Most of the time there will be water in the tank even when the humidifier is in standby mode since it only drains once per set amount of steam cycles or if foam is detected. First turn down the humidistat to avoid a steam cycle. Please note that when using an Acu-Steam PRO electronic humidistat, if the relative humidity is extremely low the humidifier may still run with the knob at the minimum setting because of a range limiter inside the cover. Press the white Drain button on the control panel. The water will fill to flush the tank and then it will drain. This process can take a number of minutes. Once draining has completed, turn the main power off. There should be approximately one inch of water in the tank. **Wait a few minutes or until the unit has cooled before proceeding with the following steps.**

16.2 After draining the tank, **TURN THE MAIN POWER OFF.**

16.3 Remove the cover by turning the two 1/4 turn latches (single 1/4 screw for Pro7) with a screwdriver.

16.4 Unplug the white quick connect wire connected on the overflow pan at the bottom of the unit. This wire is connected to the overflow sensor. Please see [Fig. 16a](#).

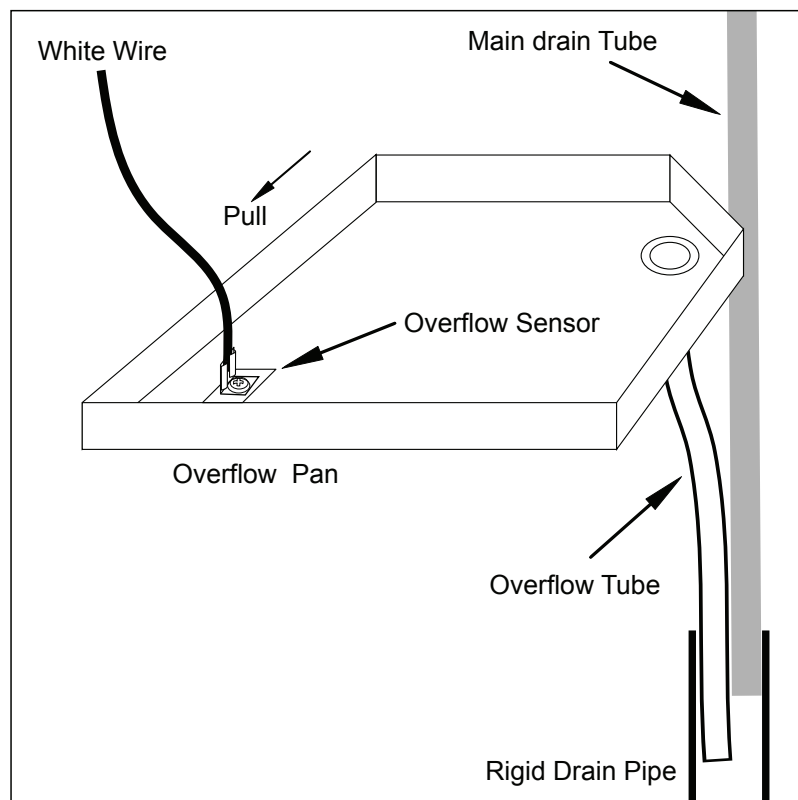


Fig. 16a

16.5 Pull the plastic tube attached to the bottom of the overflow pan out of the rigid drain pipe on the wall. You do not have to remove the plastic tube attached to the bottom of the pan. Remove the overflow pan from

the unit by pulling it towards you. Please see [Fig. 16a](#). Also remove the main drain tube from the rigid drain pipe attached to the wall and check that both tubes are clean and clear from deposits.

16.6 **CAUTION:** Check that the water tank is not too hot to handle. Unfasten the latches around the water tank and remove the tank bottom from the main body of the tank vessel by pulling it down carefully in a twisting motion. Reminder: there should be a small amount of water left in the tank. After you remove the tank, clean the round o-ring gasket, but don't discard it.

NOTE : *This round gasket is mandatory and the tank will not seal properly without it, likely resulting in a water leak.*

16.7 There will be varying degrees of scale on the tank bottom/sidewalls and internal components which is a normal byproduct of boiling water containing minerals. Simply discard the scale from the bottom of the tank, leaving the scale on the tank sidewalls and elements (it will not adversely affect the operation of the unit). Clean the scale from the bottoms of the stainless steel water discharge and water supply tubes using vinegar or a cleaning product designed to remove scale, lime or calcium to enable unrestricted water flow. If scale is excessive, affecting the flow of water replace the drain tube and sensors when necessary (normally every 2-4 years); these replacement parts are included in a maintenance kit available from your installing contractor. DO NOT use any acids when cleaning your Acu-Steam PRO humidifier.

16.8 Once completed, reinstall the o-ring gasket around the bottom tank collar. Please see [Fig. 16b](#). Align the latches around the tank and the fixed part while lifting the tank in place. Please see [Fig.16c](#). Apply even pressure to secure the tank properly in the tank cover. Then close the latches in an alternating sequence similar to [Fig. 16d](#) while holding the tank in position. The latches should close with minimal pressure. Verify that the o-ring gasket and tank are seated properly by checking for leaks when re-starting the humidifier.

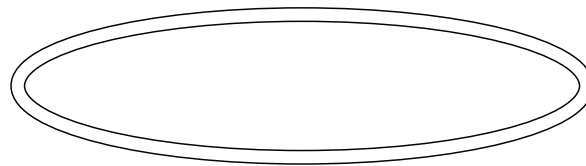


Fig. 16b

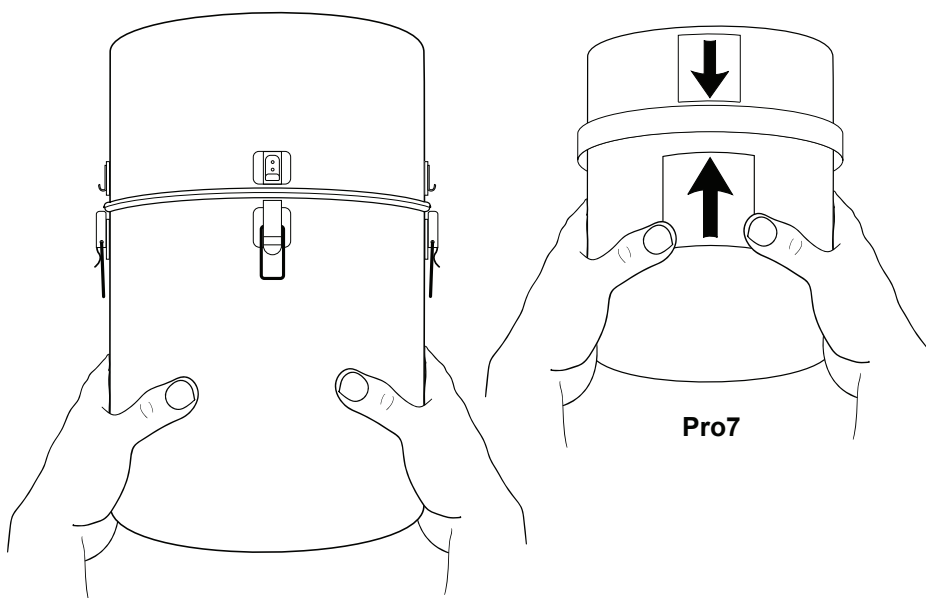


Fig. 16c

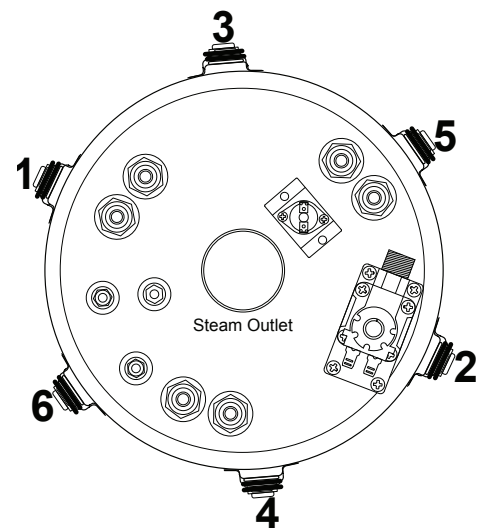


Fig. 16d

- 16.9 Put the overflow pan under the tank by sliding it in the channel.
- 16.10 Reconnect the white wire of the overflow sensor on the overflow pan terminal.
- 16.11 Put the overflow and main drain tubes back into the rigid drain pipe.
- 16.12 Put the cover back on the humidifier and lock it with the quarter-turn latches.
- 16.13 When finished, turn the main power back "**ON**".

17. Preventative Maintenance

17.1 In order to avoid problems due to accumulation of deposits, we suggest that you replace the silicone drain tube and the low and high water level sensors every 2 to 4 years. We also suggest you replace the round o-ring gasket around the tank. All these components are available in a kit. Contact your service company for more information.

17.2 To prepare for the Summer Season

- Perform a complete maintenance as described in section 16
- Shut the main power **OFF**
- Close the water supply valve
- Dry the inside of the tank

18. Warranty

18.1 Thermolec Ltd. warrants against defects for a period of two (2) years from the date of installation.

18.2 Any claim under warranty shall be considered only if the product has been properly installed, by a certified technician, and operated in accordance with Thermolec's written instructions.

18.3 Any misuse of the steam humidifier or any repair by persons other than a certified technician, carried out without Thermolec's written consent, voids the warranty.

18.4 All defective parts must be claimed within the warranty coverage period and shall be replaced at no charge (transport included) by Thermolec. Thermolec does not cover the labor costs to execute the said repairs.

18.5 Thermolec will not be held responsible for accidental or consequential damages, nor for operational delays caused by the replacement of said steam humidifier.

Thermolec Ltd

2060 Lucien-Thimens St. Montreal, QC, H4R 1L1

Tel : 514-336-9130 Fax : 514-336-3270

Web site : www.thermolec.com

Help line for technical assistance during business hours

Monday to Friday, 8:30am to 5:00 pm (Eastern Time)

1-800-336-9130

IMPORTANT:
SUIVRE LES CODES ELECTRIQUES NATIONAUX
ET LOCAUX AINSI QUE LES INSTRUCTIONS
CONTENUES DANS L'APPAREIL.

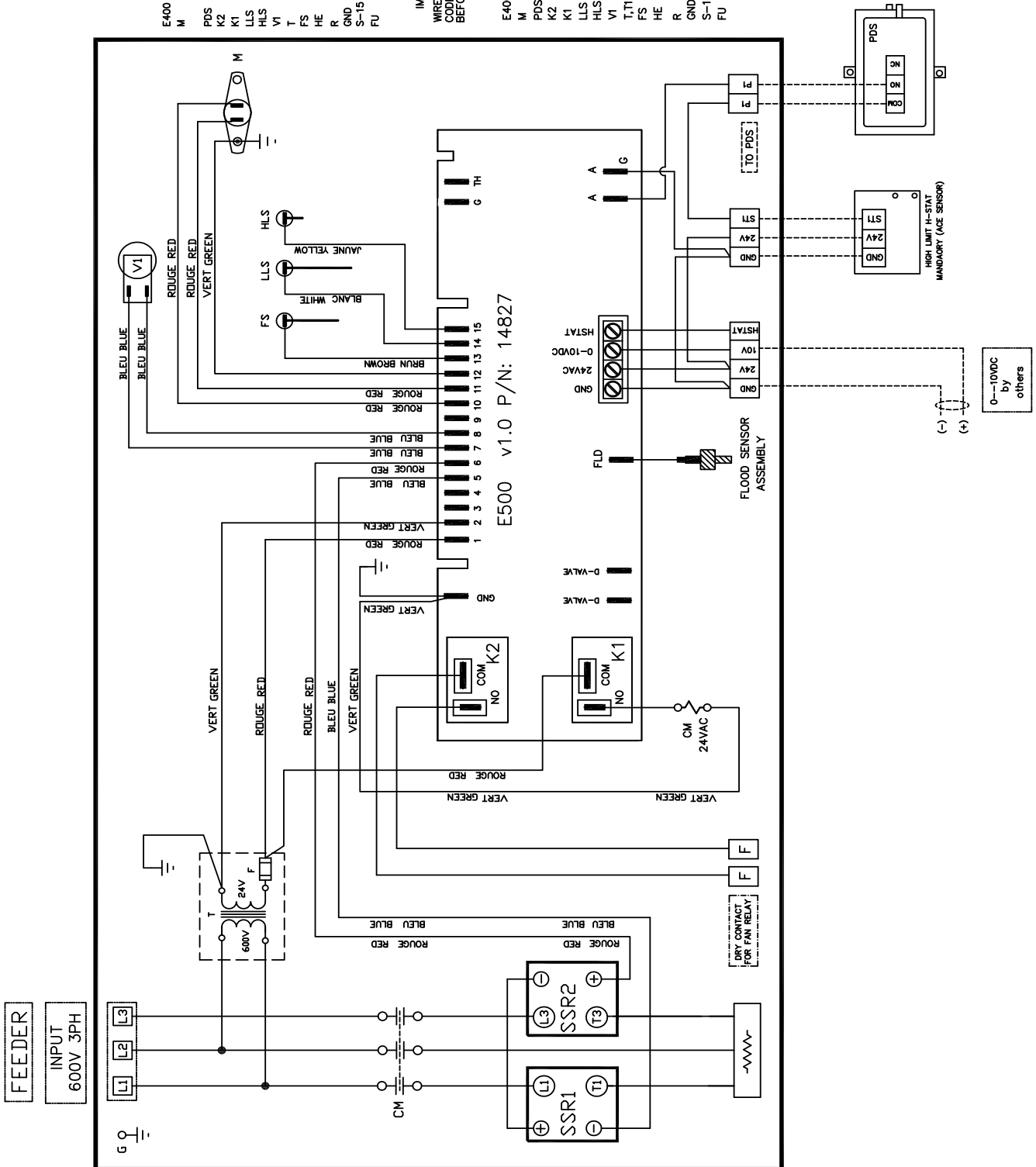
LEGENDE

- E400 - CIRCUIT IMPRIME
- M - SONDE THERMIQUE 225°F
- PDS - A REENCLICHEMENT MANUEL
- K2 - INTERRUPTEUR A DIFFERENTIEL DE PRESSION
- K1 - RELAIS DE SECURITE
- LLS - CAPTEUR DE BAS NIVEAU
- HLS - CAPTEUR DE HAUT NIVEAU
- V1 - VALVE ELECTRIQUE 24VDC
- T - TRANSFORMATEUR
- FS - SONDE D'EQUILIBRE
- HE - ELEMENT CHAUFFANT
- R - RELAIS DE VENTILATEUR
- GND - PRISE DE TERRE
- S-15 - CAPTEUR EXTERIEUR
- FU - FUSIBLE DE CONTROLE

IMPORTANT:
WIRE IN ACCORDANCE TO LOCAL & NATIONAL ELECTRIC
CODES. READ CAREFULLY INSTALLATION INSTRUCTIONS
BEFORE WIRING AND OPERATING.

LEGEND

- E400 - PRINTED CIRCUIT BOARD
- M - MANUAL RESET CUT-OUT 225°F
- PDS - PRESSURE DIFFERENTIAL SWITCH
- K2 - OPERATING RELAY
- K1 - BACK-UP RELAY
- LLS - LOW LEVEL SENSOR
- HLS - HIGH LEVEL SENSOR
- V1 - ELECTRIC VALVE 24 VDC
- T,T1 - TRANSFORMER
- FS - FOAM SENSOR
- HE - HEATING ELEMENT
- R - FAN RELAY
- GND - GROUND CONNECTION
- S-15 - OUTDOOR SENSOR
- FU - CONTROL FUSE



20. Detailed Error Codes

Number of flashes of the red light	Error Description	Humidifier Status	Actions to be Taken by the Technician	Reset
OFF	No error	The humidifier is working fine	None	
Continuous ON	The flood sensor under the tank senses water in the pan.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is OFF.	Turn power off. Check for leaks around the tank clamp, SW valve and drain tube. Make sure tank latches align and gasket is sealing properly.	Automatic Reset when Overflow pan dries up.
1	Reserved for future use	.		
2	Water sensor error	Humidifier suspends operation	Check and clean or replace sensors	Reset when switching main power OFF and ON
3	Inadequate water supply and/or marginal drainage. The supply valve was open for more than 6 minutes.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is ON.	Turn power off. Check SW valve circuit for 24V DC at the valve. Refer to manual (p. 10) and check for proper drain installation. Make sure SW shut-off valve is open, SW valve is responding and SW tube is clear of debris.	Automatic Reset after 5 min or when switching main power off and on
4	Inadequate drainage. The tank did not drain or the draining cycle is too long.	Humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is blinking.	Turn power off. Check for proper drain setup by referring to manual (p. 10). Check and clean tank, SS siphon tube and silicon drain tube if necessary.	Reset when switching main power OFF and ON
5	The air pressure switch does not detect enough air pressure OR the high limit HSTAT senses extremely high humidity in the duct.	Humidifier immediately suspends the ongoing operation. The unit goes back to normal operation as soon as the error condition disappears. The power green light is ON.	Check if the FF motor is running. If not, turn FF to continuous operation. Check flow sensor (pitot tube) in duct for blockage, then make sure plastic tube is connected properly from flow sensor to PD switch (see manual). Change furnace filter if needed.	Automatic Reset when error conditions disappear
6	Temperature inside the tank exceeded the high temperature cut-out setting.	The high temperature cut-out has tripped. The humidifier immediately suspends the ongoing operation. Heating elements and supply valve are switched off. The power green light is blinking.	Turn power off. This is a serious condition and will likely require assistance from a service technician. Call 1-800-336-9130.	After pushing on the thermal cut-out button, automatic reset when switching main power ON
7	Reduced power capacity	Humidifier suspends operation	Check elements and SSRs	Reset when switching main power OFF and ON

Legend: SS = stainless steel, FF = furnace fan, SW = supply water, HLS = high level sensor, LLS = low level sensor