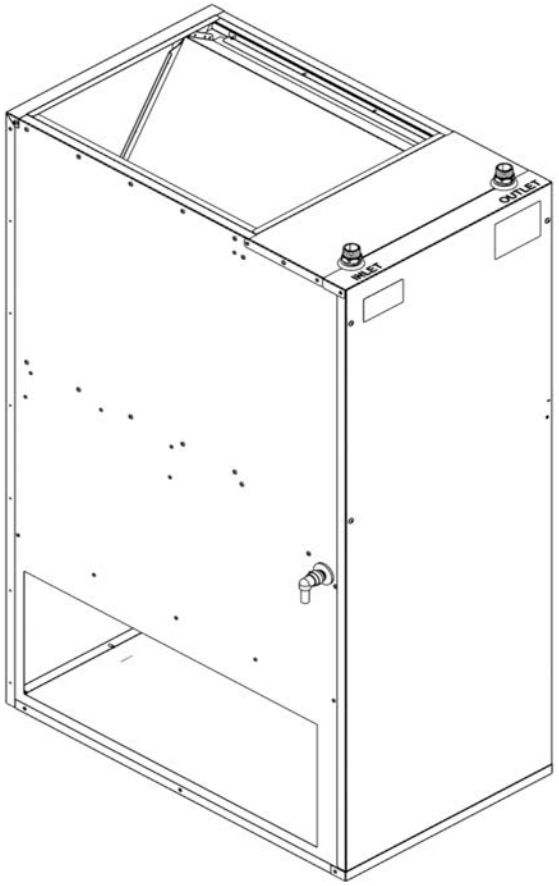
IBC

INSTALLATION & OPERATING MANUAL



AHU HC
AIR HANDLER

Hydronic Air Handler for Heating and Cooling

AHU 1200 HC

AHU 2000 HC

Intertek

Intertek

Warning

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury, or loss of life. Read and understand the entire manual before attempting installation, start-up, operation, or service. Installation and service must be performed only by an experienced, skilled installer or service agency.

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

Children should be supervised to ensure that they do not play with the appliance.

Note on wiring

If using a heat pump or air conditioner: consult the heat pump or air conditioner's wiring instructions before connecting to the air handler.

A heat pump or air conditioner producing its own control voltage will require isolation relays. If the heat pump or air conditioner's wiring diagram shows a thermostat connecting directly to the heat pump or air conditioner's board (without an external transformer), then isolation relays will be required.

See the first of the "Worked Examples" under "Installation." If in doubt, power the heat pump or air conditioner before connecting to it, and measure for voltage across control contacts Y and C: a voltage greater than ~2 Volts AC or DC indicates that isolation relays will be necessary.

Note on duct design

When using medium and high velocity systems, ensure proper duct design for optimal system performance and noise levels. For reference, see "Duct Work" under "Installation."

Contents

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Safety information

Manual safety markings

Danger

Points out an immediate hazardous situation that must be avoided to prevent serious injury or death.

Warning

Points out a potential hazardous situation that must be avoided to prevent serious injury or death.

Caution

Points out a potential hazardous situation that must be avoided to prevent possible moderate injury and/or property damage.

Note

Points out installation, maintenance and operational notes to enhance efficiency, longevity and proper operation of the air handling appliance.

Danger

Do not store or use gasoline or other flammable vapors or liquids in the vicinity of this or any other appliance. If you smell gas vapors, do not try to operate any appliance - do not touch any electrical switch or use any phone in the building. Immediately, call the gas supplier from a phone located remotely. Follow the gas supplier's instructions, or if the supplier is unavailable, contact the fire department.

Warning

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury, or loss of life. Read and understand the entire manual before attempting installation, start-up, operation, or service. Installation and service must be performed only by an experienced, skilled installer or service agency.

Failure to follow all instructions in the proper order can cause personal injury or death. Read all instructions, including all those contained in component manufacturers' manuals before installing, starting up, operating, maintaining, or servicing the appliance.

Warning

Disconnect power supply before any wiring/service is performed. Failure to do so could result in damage to appliance and/or electric shock.

Caution

Do not pierce cabinet as internal damage may occur to electrical and hydronic components.

Caution

The air handler must be installed so that electrical components are not exposed to water during operation.

Note on wiring

All wiring on air handlers must adhere to the National Electrical Code and/or local regulations.

Note on conformance

All appliances conform to UL / CSA 60335-1 and UL /CSA 60335-2-40 standards . The water coil is certified to meet the NSF 372 lead-free standard.

Important safety instructions

Failure to read and comply with all instructions and applicable national and local codes may result in hazardous conditions that could result in property damage and injury to occupants, and in extreme cases to death. Keep instructions near the air handling appliance for future reference.

When using electrical appliances, follow safety precautions to reduce the risk of fire, electric shock, or injury to persons, including:

- Install or locate the air handling appliance only in accordance with the provided installation instructions.
- Use the air handling appliance only for its intended use as described in this manual.
- Do not operate the air handling appliance if it is not working properly, or if it has been damaged or dropped.
- Installation, start-up and servicing of IBC's air handling appliances must be done with care and attention, and should only be performed by competent, qualified, licensed and trained plumbing and HVAC technicians. Contact your nearest authorized service facility for examination, repair, or adjustment.
- If subjected to flooding, the appliance must be replaced.

1.0 Specifications

Specification		AHU 1200 HC	AHU 2000 HC
Airflow Capacity @ 0.5" static pressure		1200 CFM	2000 CFM
Heating output at 180°F @ 5GPM [82°C @ 19 LPM]		77,600 Btu/hr	102,300 Btu/hr
Heating output at 120°F @ 5GPM [49°C @ 19 LPM]		34,400 Btu/hr	45,500 Btu/hr
Cooling output at 45°F @ 5GPM [7°C @ 19 LPM]		26,500 Btu/hr	36,200 Btu/hr
Max. water flow		8 GPM / 30 LPM	10 GPM / 38 LPM
Head loss on coil (@ max flow)		7.7 ft	10.8 ft
Max. water temperature		180°F / 82.2°C	180°F / 82.2°C
Min. water temperature		41°F / 5°C	41°F / 5°C
Max. return air temperature		122°F / 50°C	122°F / 50°C
Min. return air temperature (with glycol)		-13°F / -25°C	-13°F / -25°C
Water pipe connections		¾" MPT	¾" MPT
Total external static pressure	*default* Low	0.50" W.C.	0.50" W.C.
	Medium	1.0" W.C.	1.0" W.C.
	High	1.5" W.C.	-
Min. operating water pressure		8 psi / 55 kPa	8 psi / 55 kPa
Max. operating water pressure		150 psi / 1 MPa	150 psi / 1 MPa
Width		18" / 45.7 cm	21" / 53.3 cm
Depth		29" / 73.7 cm	29" / 73.7 cm
Height		48" / 121.9 cm	56" / 142.2 cm
Supply air opening width		16⅛" / 41.0 cm	19⅝" / 49.9 cm
Supply air opening depth		19⅝" / 49.9 cm	19⅝" / 49.9 cm
Side return air opening height		11" / 27.9 cm	11" / 27.9 cm
Side return air opening width		23⅜" / 59.4 cm	23" / 58.4 cm
External pump supply (120 Volts)		4.4 A	4.4 A
Recommended circuit breaker rating		15 A	15 A
Voltage		120 V	120 V
Boxed weight		145 lbs / 66 kgs	175 lbs / 79 kgs
Max. altitude (above sea level)		12,000 ft / 3660 m ASL	12,000 ft / 3660 m ASL
Certification for low lead NSF 372		Yes	Yes

Tableau 1 *Hydronic Air Handler Specifications*

Heating capacity

AHU 1200 HC - Heating Capacity (Entering Dry Bulb Temperature 70°F) @ 1200 CFM					
Entering Water Temperature	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM
180°F (82°C)	67.3 MBH	75.4 MBH	77.7 MBH	82.1 MBH	84.7 MBH
170°F (77°C)	60.6 MBH	67.5 MBH	70.3 MBH	74.7 MBH	77.2 MBH
160°F (71°C)	53.9 MBH	60.3 MBH	63.3 MBH	68.2 MBH	69.3 MBH
150°F (66°C)	47.7 MBH	53.3 MBH	55.8 MBH	60.3 MBH	61.2 MBH
140°F (60°C)	41.0 MBH	46.9 MBH	49.5 MBH	53.0 MBH	53.3 MBH
130°F (54°C)	35.2 MBH	40.8 MBH	42.0 MBH	45.4 MBH	45.5 MBH
120°F (49°C)	28.9 MBH	33.9 MBH	34.4 MBH	36.4 MBH	37.8 MBH
110°F (43°C)	22.8 MBH	28.0 MBH	28.2 MBH	30.1 MBH	30.8 MBH

Table 2 *AHU 1200 HC Heating Capacity rating at 1200 scfm (standard cubic feet / minute)*

AHU 2000 HC - Heating Capacity (Entering Dry Bulb Temperature 70°F) @ 2000 CFM					
Entering Water Temperature	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM
180°F (82°C)	85.5 MBH	95.5 MBH	102.3 MBH	106.7 MBH	110.8 MBH
170°F (77°C)	77.3 MBH	86.9 MBH	94.6 MBH	97.1 MBH	101.5 MBH
160°F (71°C)	66.8 MBH	79.2 MBH	83.5 MBH	87.4 MBH	90.2 MBH
150°F (66°C)	60.5 MBH	70.6 MBH	74.8 MBH	76.6 MBH	80.2 MBH
140°F (60°C)	52.8 MBH	60.9 MBH	64.5 MBH	67.2 MBH	70.0 MBH
130°F (54°C)	43.2 MBH	52.0 MBH	57.1 MBH	57.9 MBH	58.7 MBH
120°F (49°C)	37.2 MBH	43.6 MBH	45.5 MBH	47.1 MBH	48.7 MBH
110°F (43°C)	29.0 MBH	33.5 MBH	36.6 MBH	36.6 MBH	38.2 MBH

Table 3 *Heating Capacity rating at 2000 scfm (standard cubic feet / minute)*

Cooling Capacity

AHU 1200 HC - Cooling Capacity (Entering Dry Bulb Temperature 80°F) @ 1200 CFM					
Entering Water Temperature	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM
45°F (7°C)	21.5 MBH	25.0 MBH	25.9 MBH	26.9 MBH	29.0 MBH
50°F (10°C)	17.5 MBH	19.5 MBH	20.7 MBH	22.5 MBH	23.2 MBH
55°F (13°C)	14.9 MBH	16.8 MBH	18.7 MBH	19.3 MBH	20.1 MBH

Table 4 *AHU 1200 HC Cooling Capacity rating at 1200 scfm (standard cubic feet / minute)*

AHU 2000 HC - Cooling Capacity (Entering Dry Bulb Temperature 75°F) @ 2000 CFM					
Entering Water Temperature	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM
45°F (7°C)	29.5 MBH	32.1 MBH	34.4 MBH	34.7 MBH	35.8 MBH
50°F (10°C)	25.4 MBH	27.5 MBH	29.4 MBH	30.8 MBH	30.9 MBH
55°F (13°C)	22.7 MBH	24.1 MBH	25.4 MBH	26.9 MBH	26.9 MBH

Table 5 *AHU 2000 HC Cooling Capacity rating at 2000 scfm (standard cubic feet / minute)*

Dimensions for the AHU 1200 HC

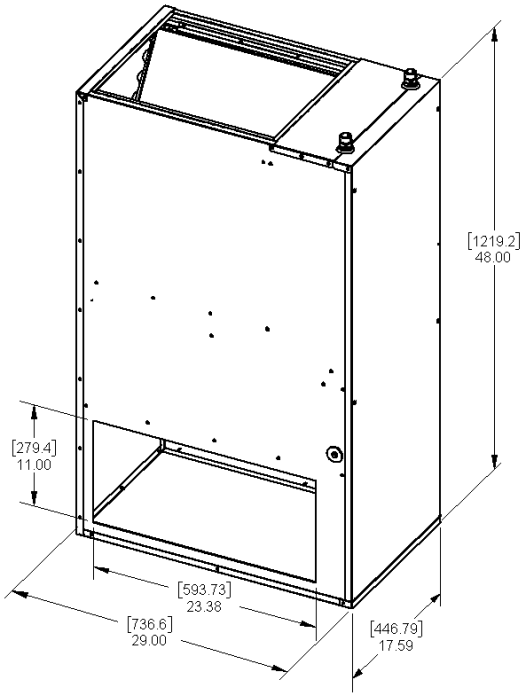

Figure 1 *Front / left view*

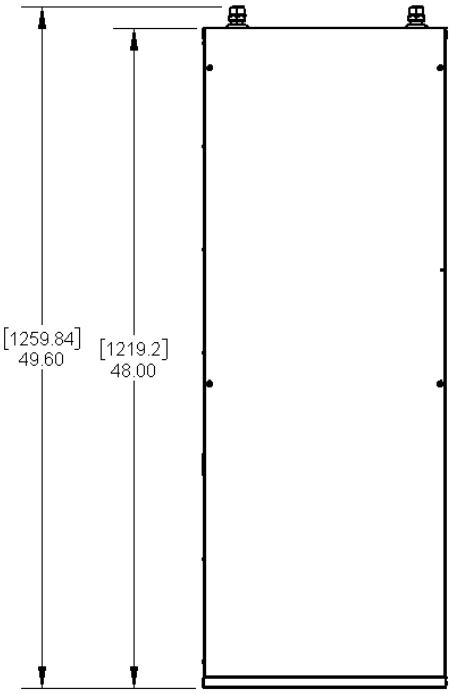

Figure 2 *Frontal view*

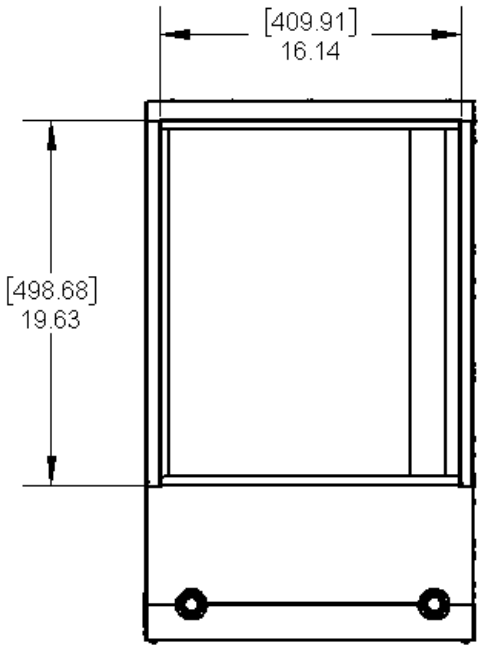

Figure 3 *Top view*

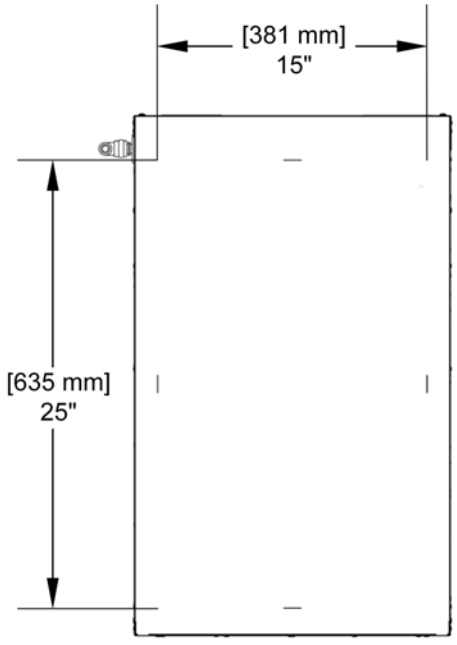

Figure 4 *Bottom view*

Dimensions for the AHU 2000 HC

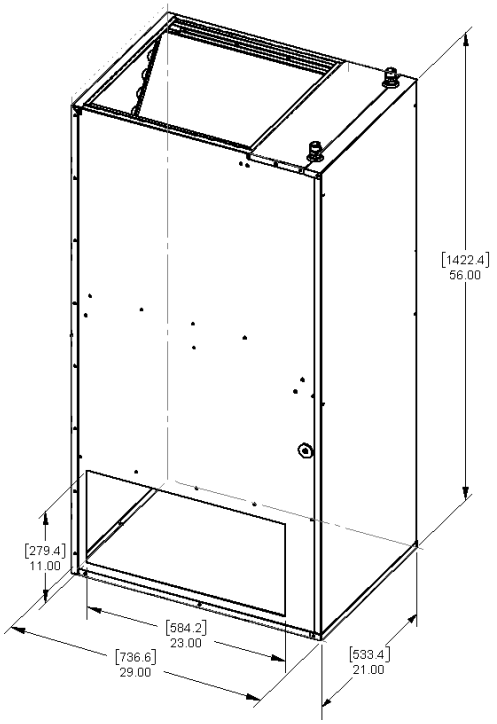

Figure 5 *Front / left view*

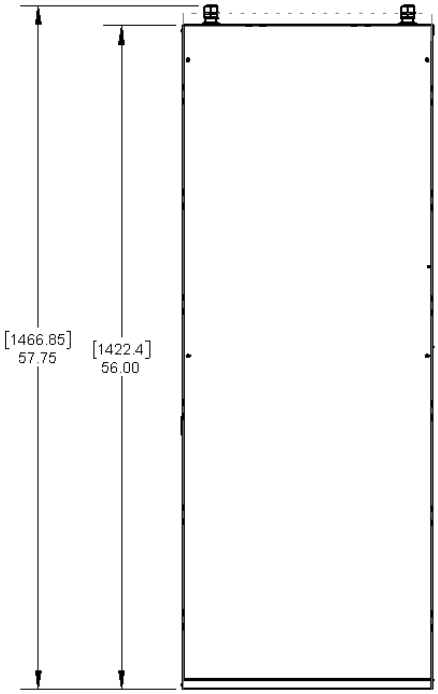

Figure 6 *Frontal view*

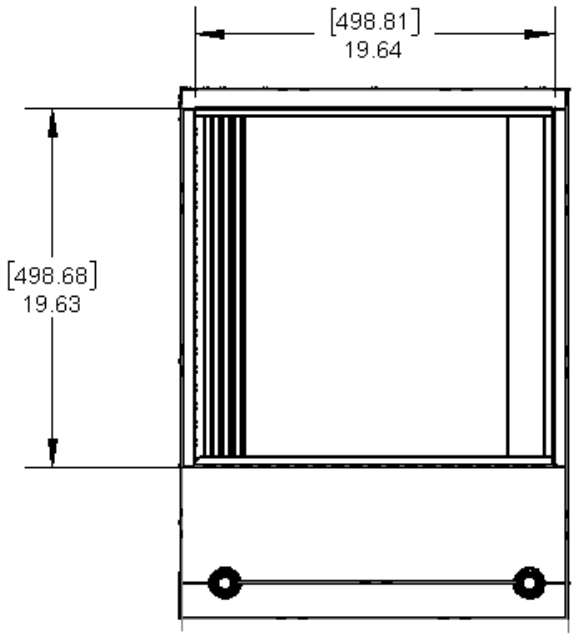

Figure 7 *Top view*

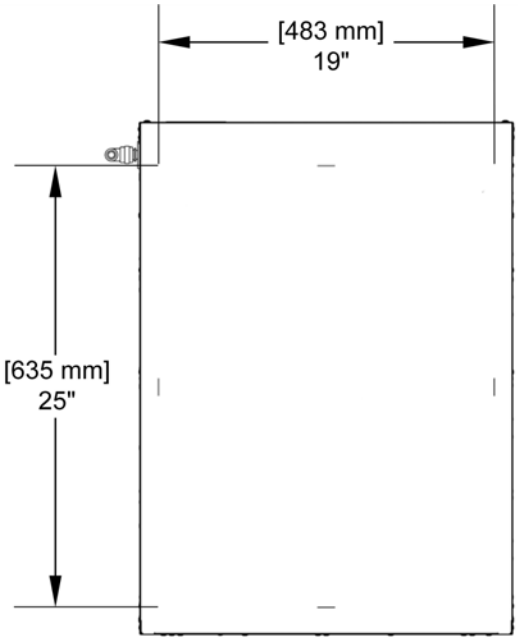

Figure 8 *Bottom view*

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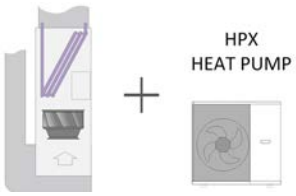
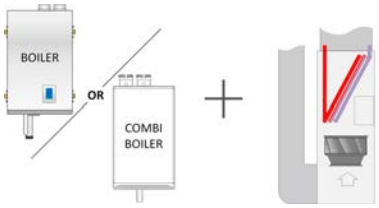
2.0 Introduction

The air handling unit is designed for ducted heating and cooling, and to combine with heat pumps and other appliances to satisfy most HVAC requirements. In addition, it offers control for humidifiers and dehumidifiers via its built-in humidity sensor. The air handler is delivered with pre-programmed settings for ease of use and operation. If customizing is required, HVAC professionals can download the free *IBCconnect app* to program the air handler (see *Operating the air handler using the app on page 54*).

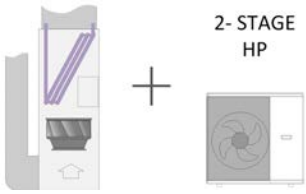
We've illustrated the hydronic air handler's diverse applications below. To view corresponding wiring and configuration instructions, see *Worked examples*.



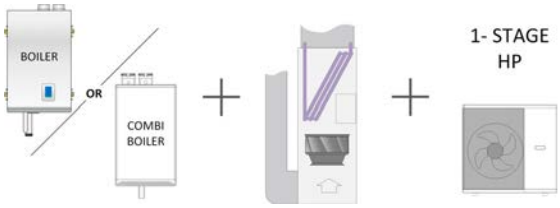
For setup instructions, see *Wiring to IBC HPX hydronic heat pump on page 38*.



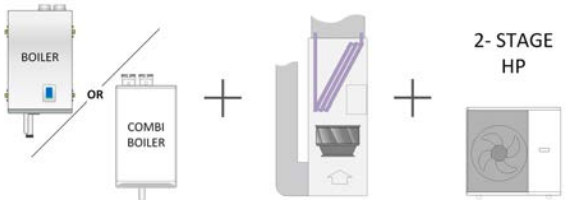
For setup instructions, see *Wiring single-stage heating with a boiler or combi boiler on page 40*.



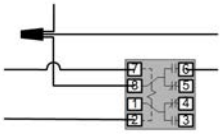
For setup instructions, see *Wiring two-stage hydronic heat pump with two-stage thermostat on page 42*.



For setup instructions, see *Wiring single-stage hydronic heat pump with a boiler or combi boiler as backup on page 44*.



For setup instructions, see *Wiring two-stage hydronic heat pump with a boiler or combi boiler as backup (2-stage thermostat) on page 46*.



For setup instructions, see *Wiring a heat pump needing relays on page 50*

Return air duct connections can be connected left, right and /or the bottom. For information on mounting positions and sizing, see *Dimensions for the AHU 1200 HC on page 12* and *Dimensions for the AHU 2000 HC on page 13*.

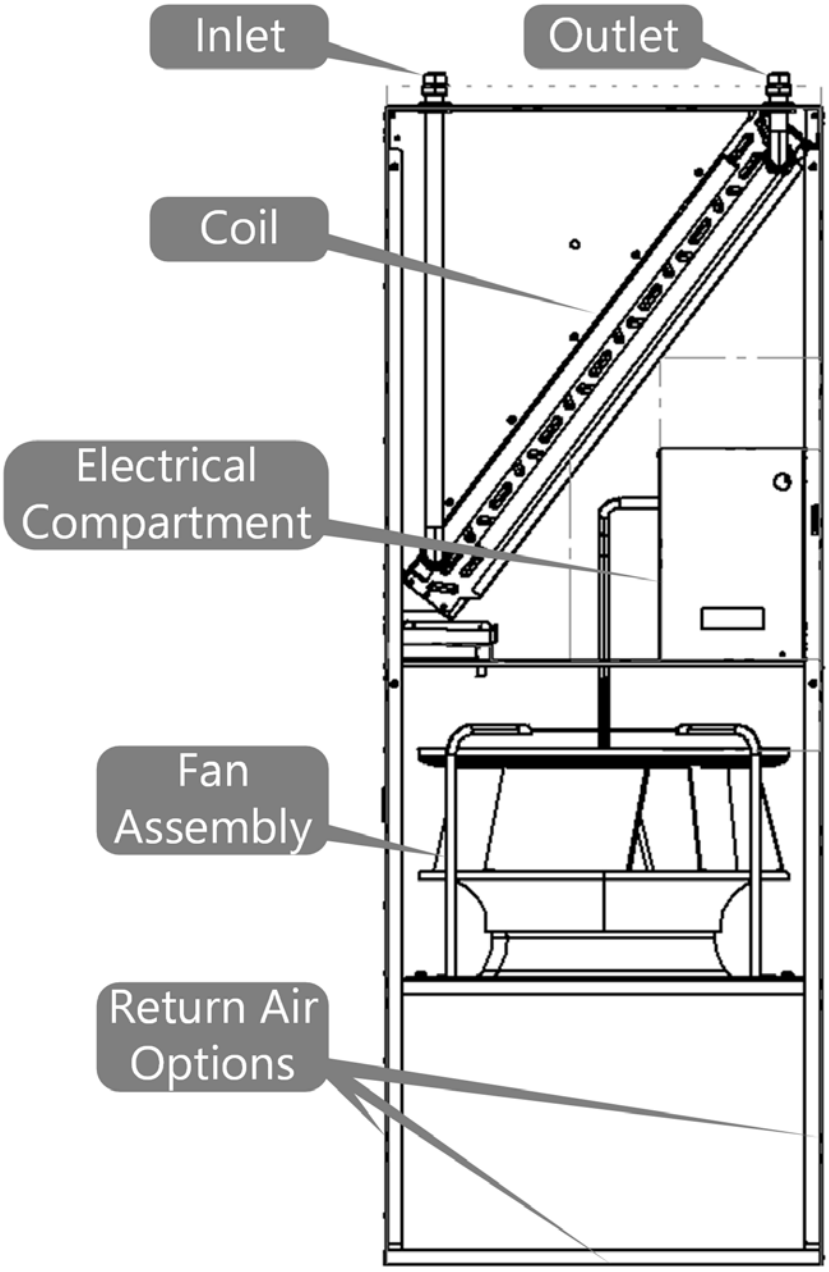


Figure 9 *Overview of air handler components*

2.1 Standard features and benefits

- Integrated air handling appliance
- High efficiency motor with variable speed (ECM) centrifugal fan
- Quiet operation
- Slide out fan assembly
- High efficiency fin tube coil
- Industry standard duct sizes – supply air opening compatible with cased and uncased A/C and heat pump coils
- Single stage or 2-stage heating, cooling and heat pump control
- Heat pump capable
- Control for external pump (4.4A - 120V)
- Flexible electrical connection knock-outs on left and right sides
- WiFi connection for programming with the mobile app
- Sensors for protection and operation:
  - **Included**
    - Sensors for supply air, return air, supply water, return water, humidifier, de-humidifier, freeze protection and Cold Air Sentry
  - **Available options**
    - Outdoor sensor part # P-9067

2.2 Conformity

The air handling appliance is certified to the UL / CSA 60335-1 (*Standard for Household and Similar Electrical Appliances*) and UL /CSA 60335-2-40 (*Particular Requirements for Electrical Heat Pumps, Air-Conditioners and Dehumidifiers*) standards. The water circuit is certified to meet the NSF lead-free standard.

Installation must conform to the requirements of the authority having jurisdiction. In the absence of such requirements, the installation must conform to the National Electrical Code ANSI/NFPA No. 70, current edition.

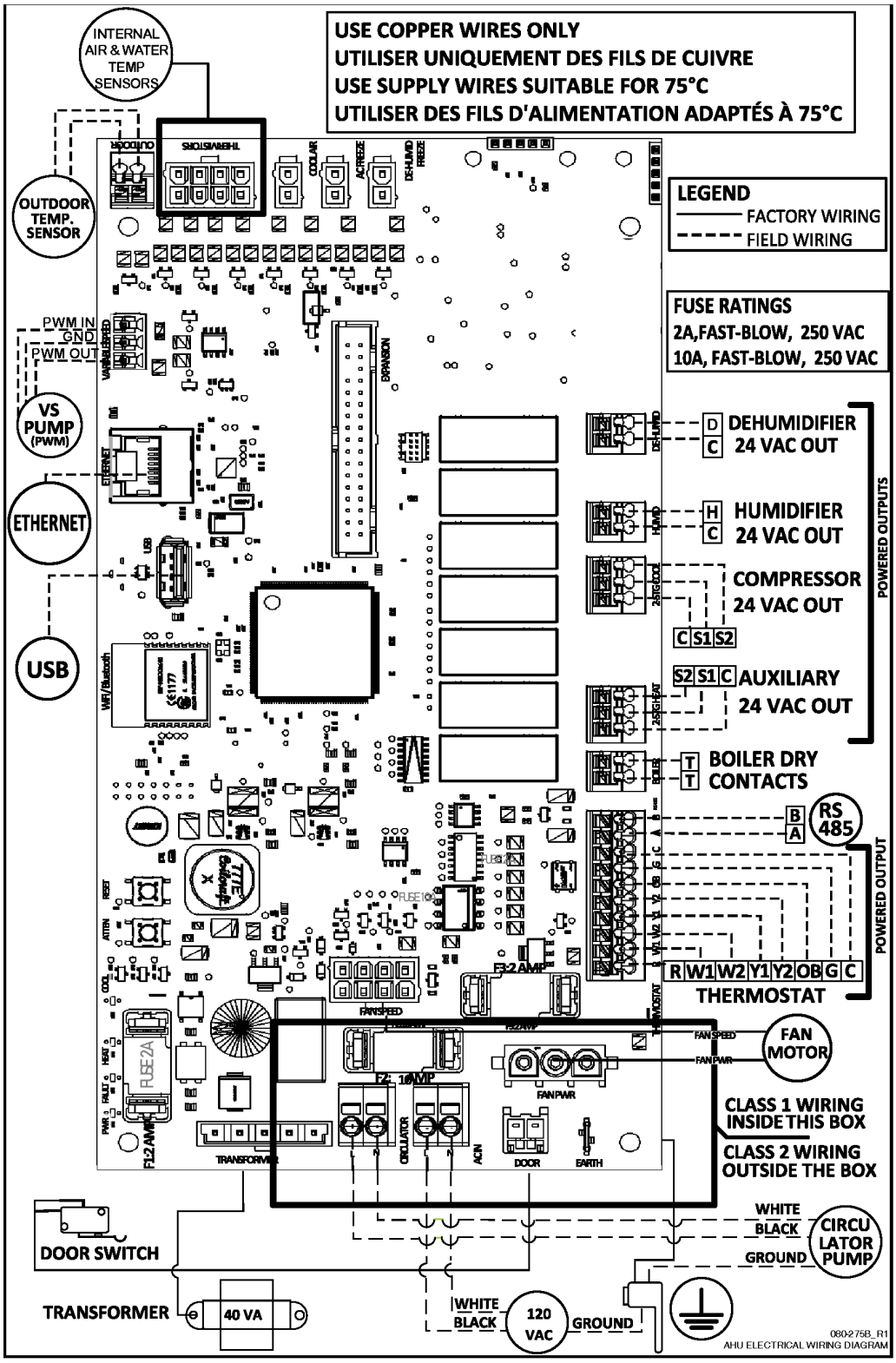


Figure 10 *Wiring and control board*

3.0 Installation

Inspect shipment carefully for signs of damage. All equipment is carefully inspected and packed. The manufacturer's responsibility ceases upon delivery of the air handling appliance to the carrier. Any claims for damage or shortage must be filed immediately against the carrier. No claims for variances or shortages will be allowed by the manufacturer.

Warning

Complete all other stages of the installation before supplying power to the unit.

Note on switch

A clearly-labelled means for disconnection must be incorporated in the fixed wiring within easy reach and sight of the appliance.

Note on wiring

Connect the appliance to the electrical supply and to other equipment only by the method shown in *Electrical connections on page 32*.

Note on regulation

All wiring on air handlers must adhere to the National Electrical Code and/or local regulations.

The air handler interior shall not be fitted with supplementary heating devices.

Minimum Clearances

Orientation	Clearance to Combustible	Clearance for servicing
Back	0 inches / cm	0 inches / cm
Right Side	0 inches / cm	min. 3 inches / 8 cm
Front	1 inch / 2.5 cm	24 inches / 61 cm
Left Side	0 inches / cm	min. 3 inches / 8 cm
Top	0 inches / cm	6 inches / 15 cm
Bottom	0 inches / cm	0 inches / cm (if no connection)

Table 6 *Recommended minimum clearance for combustibles and servicing*

This section provides installation guidelines for the air handling appliance including locating the appliance, mounting positions, ducting, piping, and wiring.

3.1 Locating the appliance

The unit is designed for indoor use only.

3.1.1 Conditioned space

- Even though the air handling appliance operates quietly, try to locate the appliance to minimize noise transmission to conditioned spaces. Avoid locating the appliance next to bedrooms or other noise-sensitive locations.
- If connecting a cooling system to the appliance, we recommend insulating the supply air ducting with a minimum of 1" thick fiberglass insulation with a vapor barrier. All insulated joints must be sealed with a tape designed for this purpose.

3.1.2 Un-conditioned space

If locating the appliance in an un-conditioned space, protect the hydronic coil from freezing conditions. Propylene glycol may be required to prevent freezing of the coil. Use a minimum of 25% to a maximum of 50% mixture of propylene glycol with water.

Insulate the supply air and return air ducting with a minimum 2" thick fiberglass insulation with a vapor barrier. All insulated joints must be sealed with tape designed for this purpose. The appliance should also be insulated with a minimum 2" thick fiberglass insulation with a vapor barrier.

3.1.3 New construction

The appliance is not designed to provide temporary heat during construction. If used for temporary heating during construction, the warranty may be void. If used during construction, you must thoroughly clean the appliance (including the fan and coil) to remove all contaminates and install with a new air filter.

3.1.4 Mobile home

The appliance can be installed in a mobile home. Appliances installed in a mobile or manufactured home must conform to the Manufactured Home Construction and Safety Standard, Title 24 CFR, Part 3280 and/or CAN/CSA Z240 MH Series, Mobile Homes.

3.1.5 Closet installation

The appliance is approved for installation in a closet.

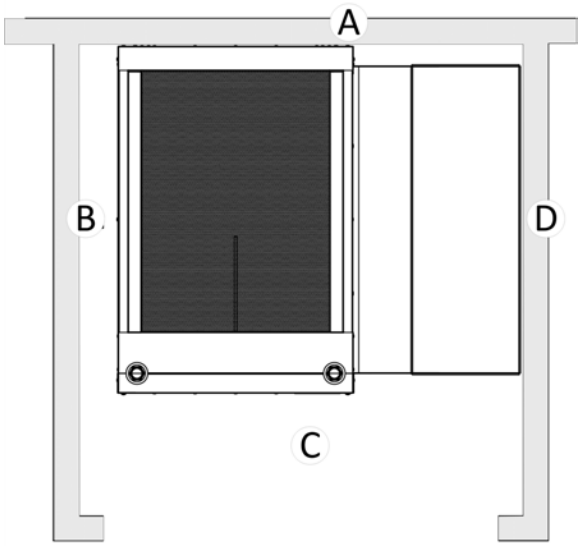


Figure 11 *View from top of air handling appliance and duct in a closet*

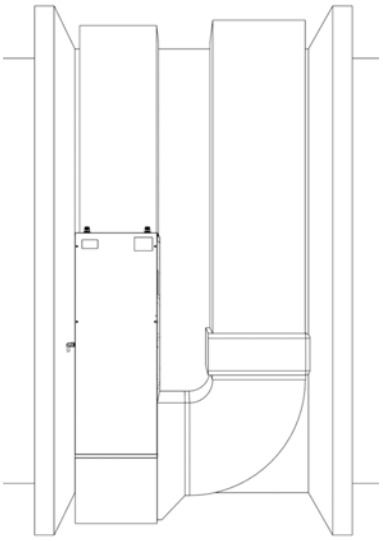


Figure 12 *Front view of air handling appliance in a closet with return ducting on side and bottom*

Closet installation requires service access as described in this Minimum Clearances table:

	Orientation	Clearance to Combustible	Clearance for servicing
A	Back	0 inches / cm	0 inches / cm
B	Left Side	0 inches / cm	min. 3 inches / 8 cm
C	Front	1 inch / 2.5 cm	24 inches / 61 cm
D	Right Side	0 inches / cm	min. 3 inches / 8 cm

Table 7 *Recommended minimum clearance for combustibles and servicing (closet)*

3.1.6 Garage

Garage installations must be in a fully enclosed garage. The appliance is not suitable for outdoor installations.

Danger

Install the appliance at a minimum of 18" above the garage floor to prevent flammable vapors reaching the appliance. Failure to follow this directive could result in an explosion or electric shock, potentially causing serious personal injury and/or property damage.

3.1.7 Serviceability

Install the appliance so that the front access panel is readily accessible for servicing. The front panel must be removed for access to the control board for wiring and setup. For more information on maintenance, see *Service and maintenance on page 67*. For wiring diagrams, see *Electrical connections on page 32*.

3.2 Positioning and mounting the appliance

This section provides guidance on ways to orient and install the appliance. Ensure that:

- You install the air handling appliance level and plumb.
- If the appliance is sitting on the floor, shim as needed to level the appliance.
- If the appliance is suspended, it is secured to the mounting system.
- Secure the appliance with four field-supplied fasteners appropriate for the supporting surface. Place a fastener in each of the four inside corners of the base. Guide-holes are not pre-drilled and must be made by the installer.

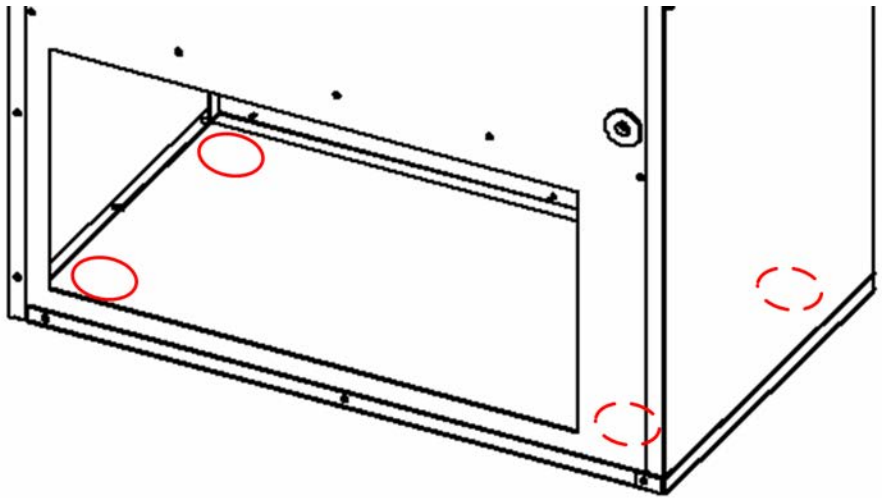


Figure 13 *Fasten to the floor*

3.2.1 Return air openings for ducting

For most applications using only one side return air connection will be too constrictive. Provide adequate return air by using the bottom connection, the bottom in conjunction with a side connection, or connections on both sides.

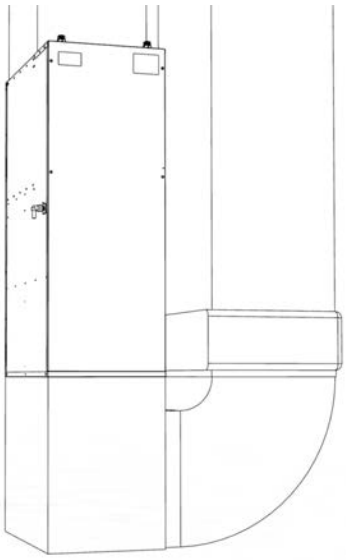


Figure 14 *Unrestricted bottom return*

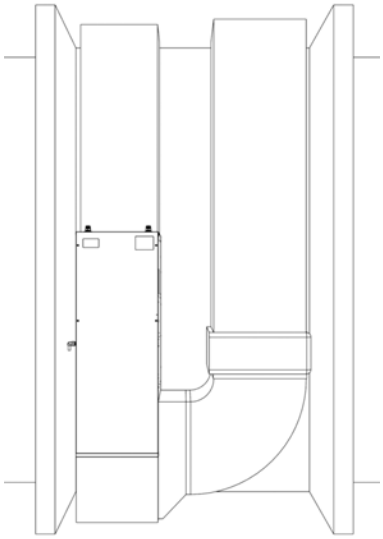


Figure 15 *Bottom and side return*

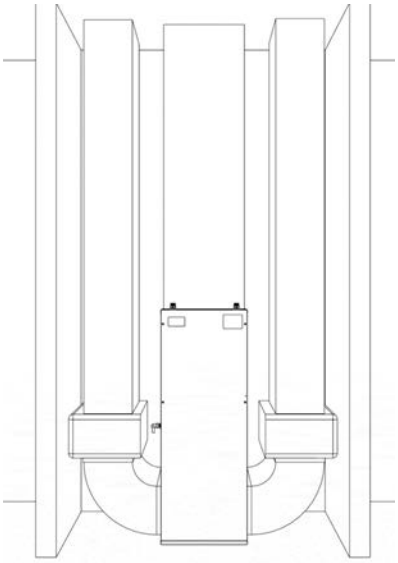


Figure 16 *Both sides return*

For unrestricted bottom return, allow a minimum 24" height below the unit. The unit offers options for air return openings at the bottom, left, and/or right.

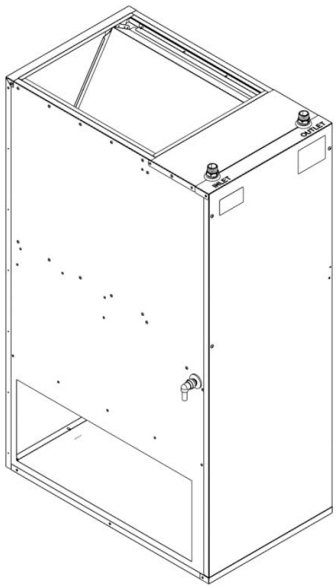


Figure 17 *Left return air opening*

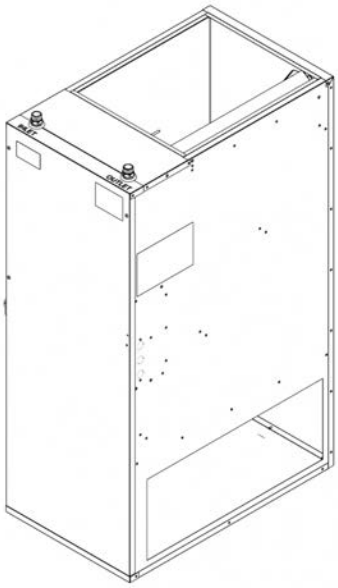


Figure 18 *Right return air opening*

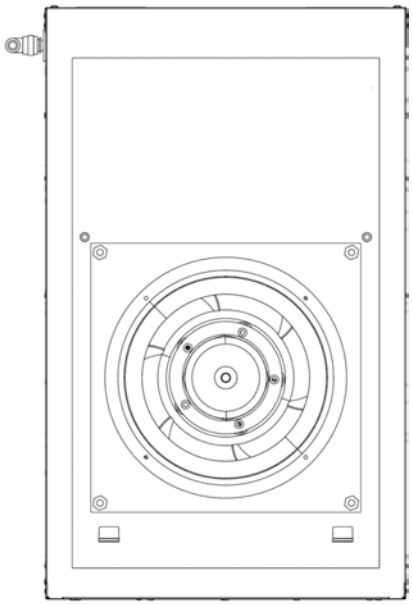


Figure 19 *Bottom return opening*

3.2.2 Making the return air openings

The bottom and both sides of the appliance have markings for the maximum return air opening. Use suitable metal cutters to perforate the marked area for the return air supply. Ensure that you cut within the marked area.

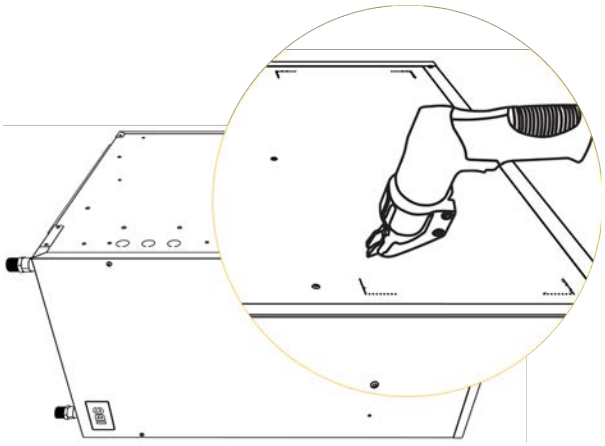


Figure 20 *Opening with shears*

3.2.3 Mounting an appliance on the wall

You may mount the appliance secured to a pair of field-supplied wall brackets.

» Secure the appliance with four field-supplied fasteners appropriate for the supporting surface. Place a fastener in each of the four inside corners of the base. Guide-holes are not pre-drilled and must be made by the installer.

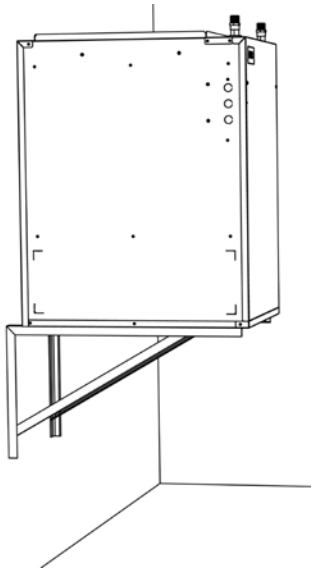


Figure 21 : *Wall-mounted air handling appliance*

3.2.4 Air filters

All models require an external field-supplied air filter, before the left, right and / or bottom return air supply opening.

3.3 Duct work

Ducting design and installation should adhere to SMACNA and/or ASHRAE guidelines. Install the ducting system to NFPA 90B (latest edition). Adhere to the following:

- Size the supply air plenum duct fitting to the size of the appliance's supply air opening, and extend for 3' above the appliance.
- Size the supply and return air ducting according to ASHRAE standards or equivalent.
- Seal all joints and connections to prevent air leakage from the ducting system.
- Choose accessories that will not excessively restrict the air flow and create excessive pressure drop on the system.

Note

When using medium and high velocity systems, ensure proper duct design for optimal system performance and noise levels.

3.3.1 Sizing the ducts

The tables below provide examples of conventional duct types and sizing for the air handler appliance running at low velocity. If using flex / insulated flex ducting, ensure that you allow for a higher pressure drop. The air handler is designed to operate on systems with an external static pressure drop between .25" and 1.0".

Branch Duct - CFM at 0.25"wc external static pressure (galvanized duct)	
Round diameter	**Range**
3"	20-30 CFM
4"	30-35 CFM

Branch Duct - CFM at 0.25"wc external static pressure (galvanized duct)	
Round diameter	**Range**
5"	55-65 CFM
6"	90-100 CFM
7"	135-160 CFM

Table 8 Sizing round galvanized duct for CFM range

Supply / Return Air Trunk Size CFM at 0.25"wc external static pressure (galvanized duct)		
Round diameter	**Rectangular**	**Range**
8"	8" x 6"	160-190 CFM
-	8" x 7"	190-230 CFM
9"	8" x 8"	230-275 CFM
10"	10" x 8"	275-360 CFM
11"	12" x 8"	360-460 CFM
12"	14" x 8"	460-570 CFM
13"	16" x 8"	570-650 CFM
13"	18" x 8"	650-750 CFM
14"	20" x 8"	750-850 CFM
14"	22" x 8"	850-950 CFM
15"	24" x 8"	950-1050 CFM

Table 9 Supply air trunk size CFM at galvanized duct .25"wc ESP for return and supply air

3.3.2 Ducting installed in conditioned space

If a cooling system is connected to the appliance, we recommend insulating the supply air ducting with a minimum of 1" thick fiberglass insulation with a vapor barrier. All insulated joints must be sealed with tape designed for this purpose.

3.3.3 Ducting installed in un-conditioned spaces

Supply air and return air ducting passing through unconditioned spaces, e.g. attics, must be insulated with a minimum 2" thick fiberglass insulation with a vapor barrier. All insulated joints must be sealed with a tape designed for this purpose.

3.4 Connecting the appliance to a boiler

The water system should be meet all safety requirements, including a backflow preventor to protect potable water, and the required pressure relief valve for the system. Generally it's best to place the appliance as close as practical to the boiler. If placing the appliance away from the boiler, ensure the piping system is designed to allow the easy removal of air from the boiler piping and easy flushing of the system.

Copper Pipe Sizing	BTU / HR Capacity @ 20°F (11°C) ΔT
½"	16,000 BTU
¾"	36,000 BTU
1"	72,000 BTU
1¼"	110,000 BTU

Table 10 *Pipe sizing*

3.4.1 Sizing pumps

To size the pump, refer to the Installation manual of the heating- (and / or cooling-) source manufacturer for head loss specifications.

AHU 1200 HC Coil Head Loss						
Flow rate	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM	8 GPM
Pressure drop	1.2 ft.	2.1 ft.	3.2 ft.	4.5 ft.	6.0 ft.	7.7 ft.

Table 11 *Air handler coil head loss at 180°F (82°C) - AHU 1200 HC*

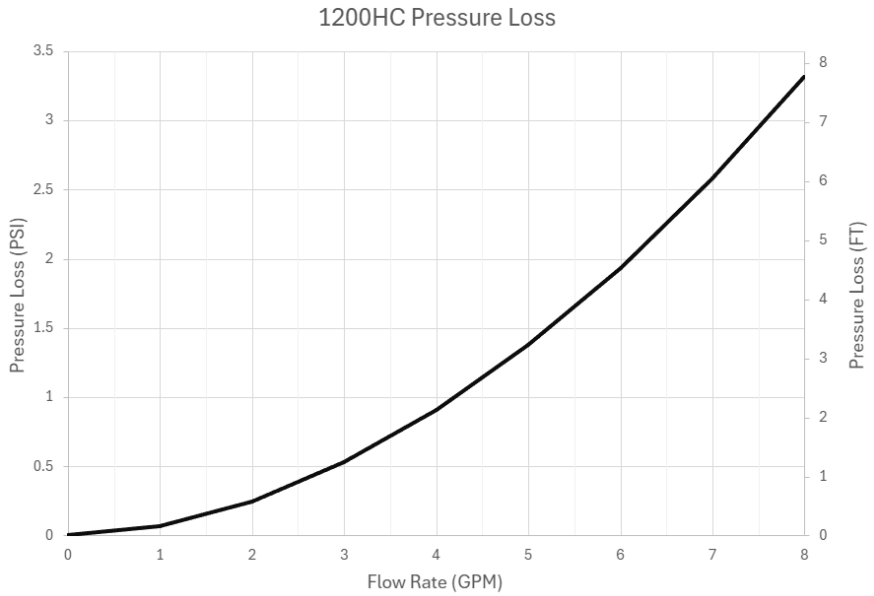


Figure 22 *Pressure loss chart - AHU 1200 HC*

AHU 2000 HC Coil Head Loss								
Flow rate	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM	8 GPM	9 GPM	10 GPM
Pressure drop	1.0 ft.	1.8 ft.	2.8 ft.	4.0 ft.	5.4 ft.	7.0 ft.	8.8 ft.	10.8 ft.

Table 12 *Air handler coil head loss at 180°F (82°C) - AHU 2000 HC*

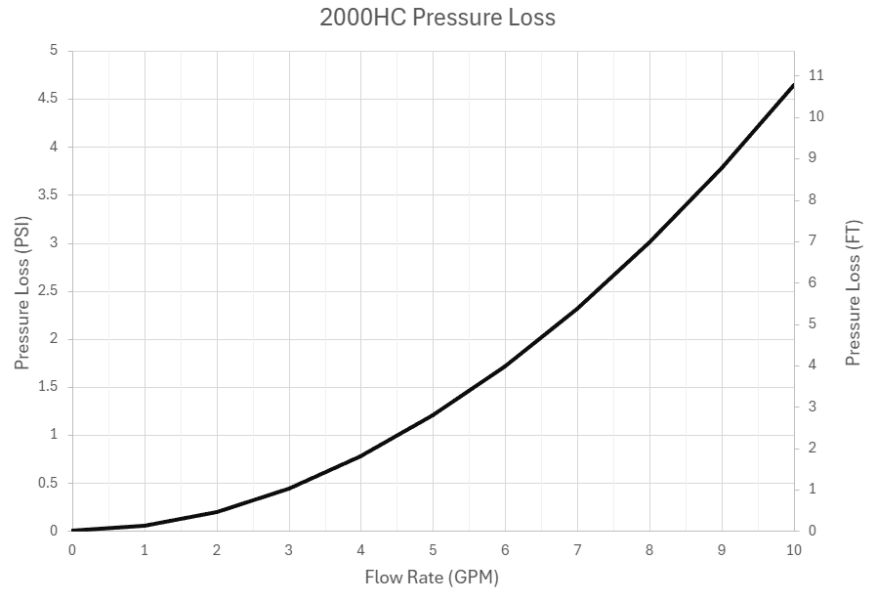


Figure 23 *Pressure loss chart - AHU 2000 HC*

3.4.2 Using Propylene Glycol

Using a propylene glycol / water mixture with the boiler/ air handling appliance reduces the heating capacity of the system by up to 10%, and increases the pump head required to circulate the heating fluid. Use propylene glycol concentrations only between 25% and 50% .

It is important to install the system with the correct pipe size to achieve optimum heating capacity from the air handling appliance. It is equally important to choose the correct circulator.

3.5 Connecting the appliance to a tankless water heater

Caution: bacteria hazard

The following illustrates a heating-only application. Do not connect a tankless water heater to a heat pump.

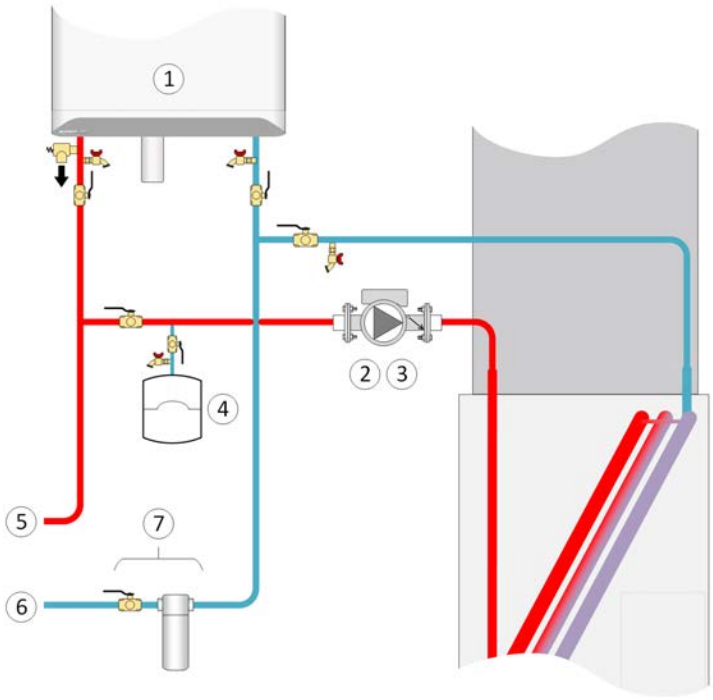
Check local codes to ensure that piping the appliance to a tankless water heater is allowed. The air handler is approved for potable water use.

The air handling appliance must be installed in close proximity to a tankless water heater. As a guideline, we recommend a maximum distance of 10 feet between the appliance and the tankless water heater using ¾" copper piping.

Note

For pipe sizing and pump selection, refer to the Installation manual of the water heater manufacturer for head loss specifications.

The AHU is field-wired to the pump and to the thermostat. For this application there is no wiring between the AHU and the on-demand heat source.



Connection to the space heating circuit through a drinkable water system as shown may be prohibited by local code.

1	On-demand water heater
2	Non-ferrous pump (sized for combined head loss of water heater, air handler and interconnecting piping)
3	Check valve (may be built into pump)
4	Potable water expansion tank
5	Domestic hot water out
6	Domestic cold water in
7	Filter; required where contaminants are present in the supply water

Figure 24 *Basic installation with tankless water heater*

3.5.1 Tankless Mode

In the installation illustrated above, DHW takes priority over space heating. Use the app to select **Tankless Mode** so that during episodes when the air handler detects reduced water temperature (for example, during a call for DHW), it will reduce the fan speed. This allows the water heater to prioritize DHW operation, and also prevents the air handler blowing cool air. Tankless Mode should always be chosen when a tankless water heater is a heat source.

3.6 Cold House Sentry (a.k.a. Freeze Protection)

The tankless water heater installation shown in *Basic installation with tankless water heater on page 31* above lends itself to the Cold Air Sentry feature, i.e. freeze protection. With the Cold Air Sentry routine the return air temperature is continually monitored, and if detected below 41°F (5°C) the air handler will initiate fan operation and heating. Heating continues until the return air is brought up to 46°F (8°C).

Alternatively, Cold House Sentry can (with app setting *Tankless Mode* set to *Off*) use a heat pump or (with the addition of TT contacts) a boiler as a heat source.

3.7 Electrical connections

All electrical wiring to the boiler (including grounding) must conform to local electrical codes and/or the National Electrical Code, ANS/NFPA No. 70 – latest edition, or the Canadian Electrical Code, C22.1 - Part 1. In addition, you should refer to the connected heat pump, air conditioner, water heater and/or boiler's installation manual(s).

The air handler is a fixed appliance and requires a permanent connection to the electrical supply. Provide a clearly-labeled means of electrical disconnection within sight of the appliance. (Disconnection of the neutral line is not necessary.)

The control board diagram below shows the various wiring connections such as the thermostat, accessories, heat pump, and external pump.

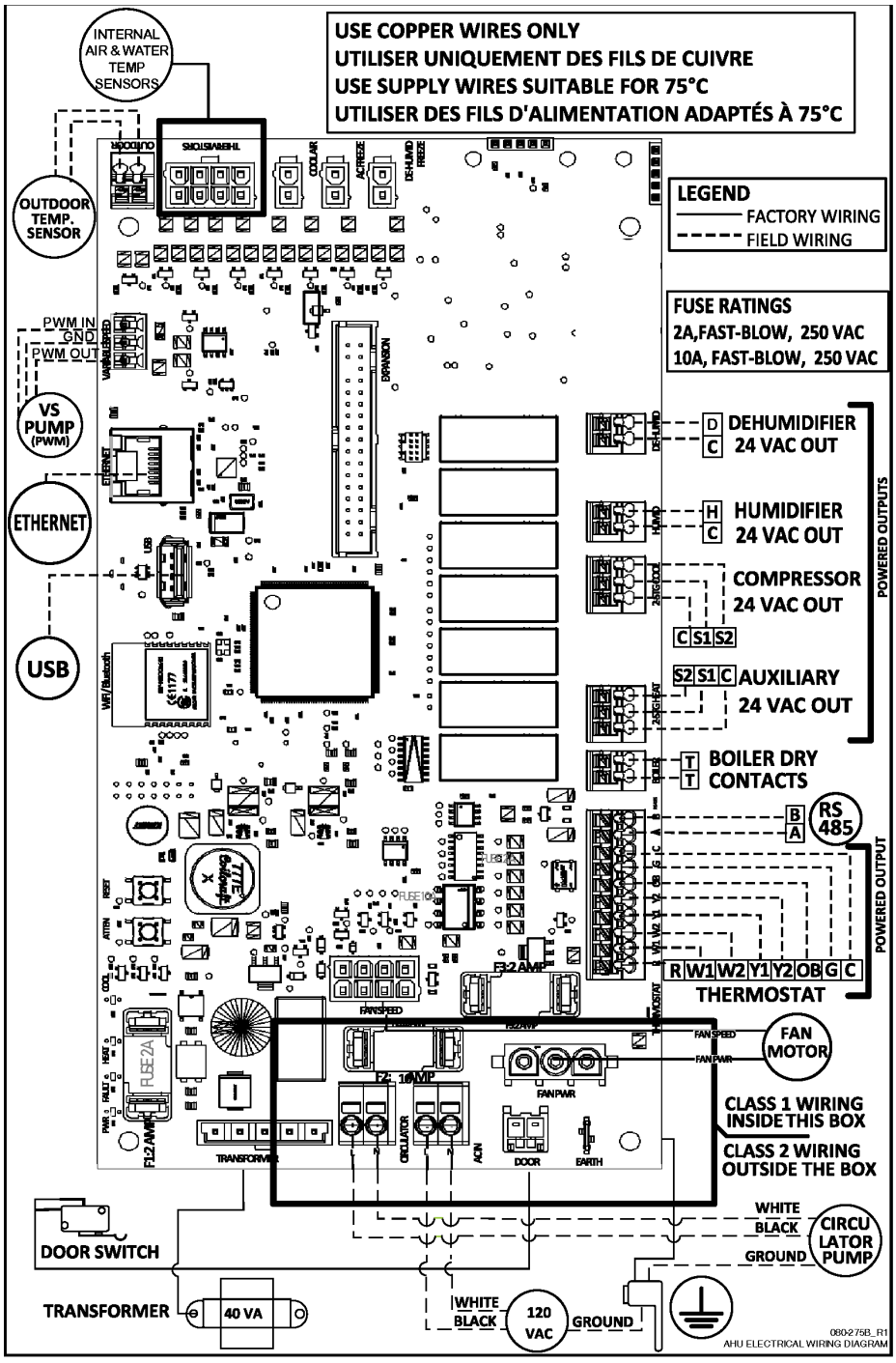


Figure 25 *Air handling appliance - electrical wiring diagram.*

3.7.1 Fuses

The control board has is protected by three fast-acting fuses, ⍉ 5mm x 20 mm.

Note: The 10 A fuse F2 is under a easy-to-remove protective covering; it looks similar to a relay.

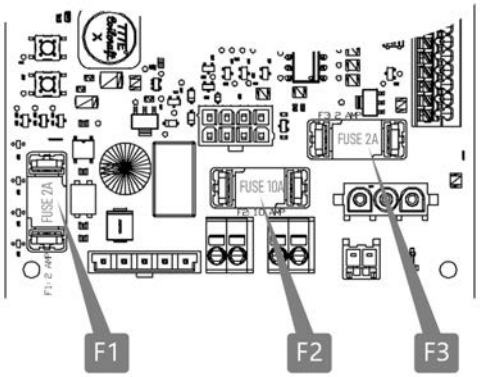


Figure 26 : *Fuses*

Fuse	Rating	Function
F1	2A	Protects the secondary of the transformer in the event of failures on the low-voltage controller.
F2	10A	Protects the 120 VAC input in the event of failure of transformer, pump or fan.
F3	2A	Protects the secondary of the transformer from field mis-wiring or failures of thermostat and of HVAC components wired to the terminal blocks.

Table 13 *Fuses*

3.7.2 Thermostat connections

Thermostat connections consist of:

- standard TH Thermostat (communications thermostat protocol)--alternatively a connection to external pump control
- connection to a heat pump for a call for heat and / or cooling
- connection to a boiler or an auxiliary heat source for a call for heat

The AHU board is compatible with conventional thermostats. Typical connections are detailed in the section *3.8* .

Caution: power-stealing thermostats

The AHU board does not support power-stealing thermostats. Power stealing thermostats take their operating power from the thermostat line. If a t-stat has electronic display but does not use a C-wire or a battery, it is power-stealing.

Connections

Terminal	Description	Notes
Thermostat - powered output		
R	24V power	Power to the low voltage thermostat.
W1	Heating Stage 1	Thermostat connects R to W1 for first stage heating. Note: A jumper between W1 and W2 will initiate W2 speed.
W2	Heating Stage 2	Thermostat connects R to W2 for second stage heating.
Y1	Cooling Stage 1	Thermostat connects R to Y1 for first stage cooling.
Y2	Cooling Stage 2	Thermostat connects R to Y2 for second stage cooling.
O/B	Reversing valve	Thermostat connects R to O/B for reversing valve operation; energized for cooling by default.
G	Fan	Thermostat connects R to G to energize fan for ventilation speed.
C	24V common	Common return from the thermostat – not required for all thermostats.
RS-485		
A		(Future application)
B		
Boiler - dry contact		
T	Boiler / Aux	Call for heat dry contact
T	Boiler / Aux	Call for heat dry contact
2-Stage Heat ("Auxilary" / O/B) - powered output		
Com	Common	24V Common for O/B, Compressor, Humid, De-humid
S1 O/B	Stage 1 / Reversing valve	Can be configured for reversing valve to energize (24VAC) during cooling (by default) or heating (app can set this).
S2	-	Connects to outdoor appliance (2nd Stage if applicable).
2-Stage Cool (Compressor)- powered output		
Com	Common	24V Common for O/B, Compressor, Humid, De-humid
S1	Compressor Stage 1	Connects to outdoor appliance.
S2	Compressor Stage 2	Connects to outdoor appliance (2nd Stage if applicable).
Humidifier- powered output		

Terminal	Description	Notes
Com	Humidifier	24V Common for O/B, Compressor, Humid, De-humid
HUM	Humidifier	24VAC to activate the humidifier.
De-humidifer- powered output		
Com	De-humidifier	24V Common for O/B, Compressor, Humid, De-humid
DEH	De-humidifier	24VAC to activate the dehumidifier; alternate operation Fresh Air Damper.

Table 14 *Thermostat connections*

3.7.3 Wiring of the external pump and 120VAC line

Line voltage consists of a 120 VAC / 15 amp supply and an external Pump – maximum 4 Amps 120 Volts.

To wire the external pump and the 120VAC line: insert a wire into the connector (at the front of the block). To remove the wire, insert a 3 mm flat-bladed screwdriver into the connector.

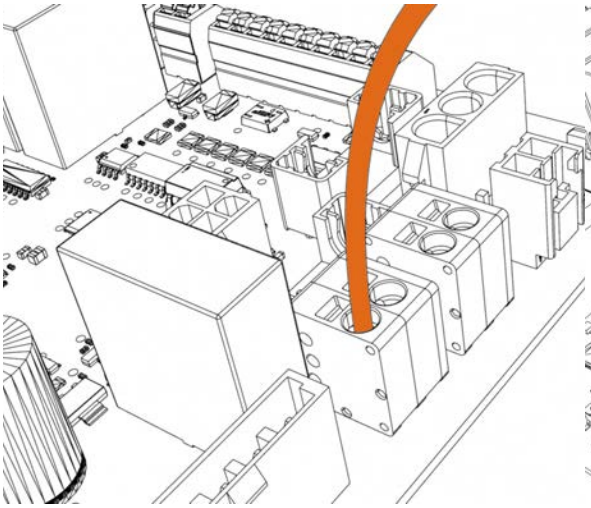


Figure 27 : *Inserting a wire for an external pump and 120VAC line*

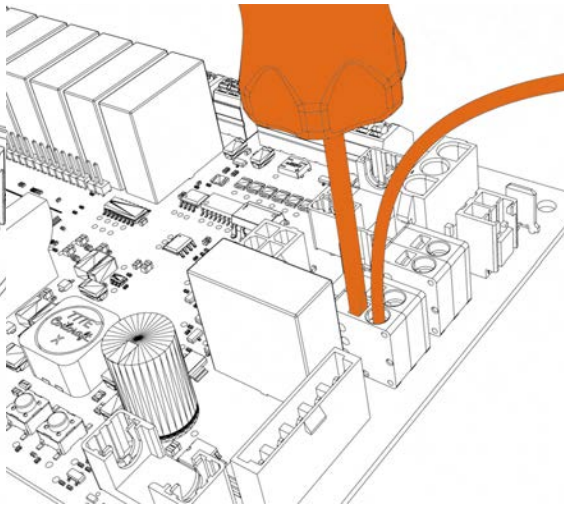


Figure 28 : *Removing a wire*

3.7.4 PWM Pump connections

Pulse width modulation (PWM) control for a pump is feature under development at the time of publication. Check our website for more information in future releases of this manual.

3.8 Worked examples

This section includes worked examples to help you set up the air handler for various applications. Note that to configure the air handler, you need to download the *app* (see *Operating the air handler using the app on page 54*).

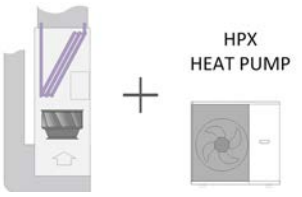
Worked examples:

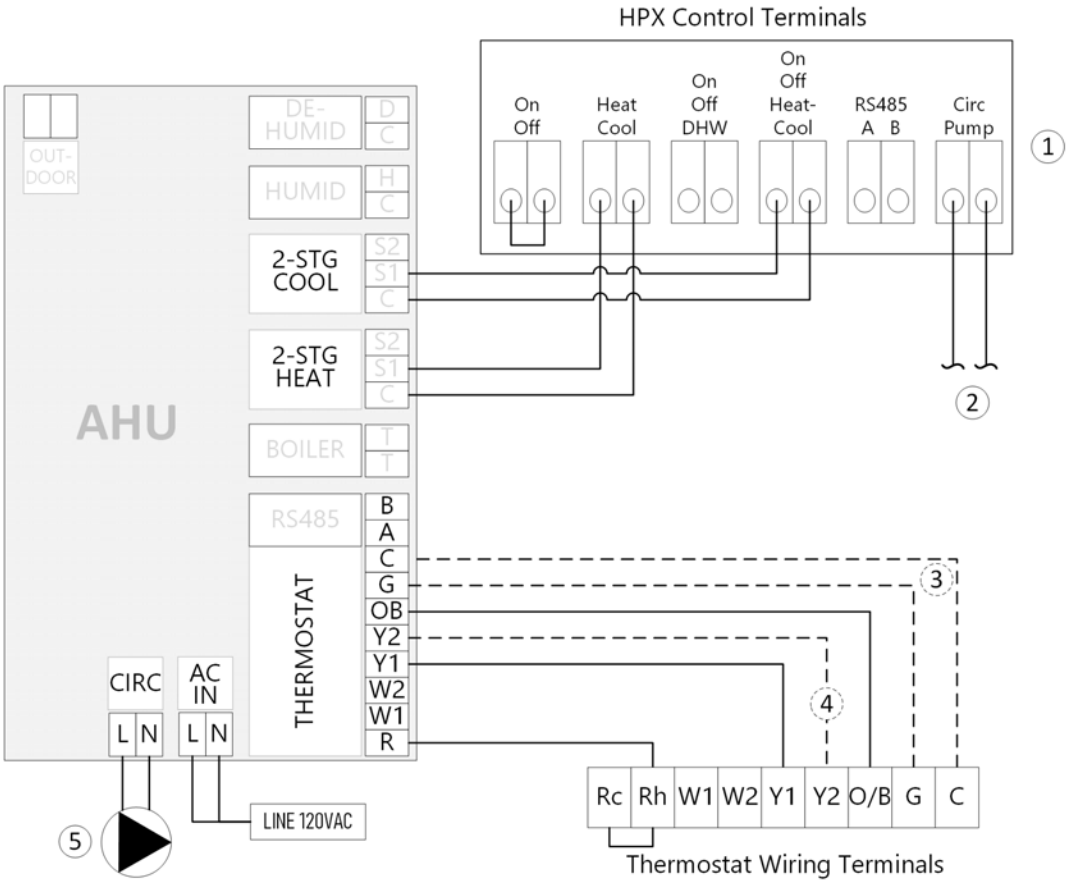
1. *Wiring to IBC HPX hydronic heat pump on page 38*
2. *Wiring single-stage heating with a boiler or combi boiler on page 40*
3. *Wiring two-stage hydronic heat pump with two-stage thermostat on page 42*
4. *Wiring single-stage hydronic heat pump with a boiler or combi boiler as backup on page 44*
5. *Wiring two-stage hydronic heat pump with a boiler or combi boiler as backup (2-stage thermostat) on page 46*
6. *Wiring make-up air with a boiler or a combi as a heat source on page 48*
7. *Wiring a heat pump needing relays on page 50*

Note on equipment

The AHU HC air handler is optimized for ground-to-water and air-to-water heat pumps. To use with a "to-air" heat pump, place an external refrigerant A-coil above the AHU. If an A-coil is used, the A/C freeze kit must be installed. P-1015

3.8.1 Wiring to IBC HPX hydronic heat pump





1	HPX control wiring board
2	To relay for HPX circulator
3	Optional: 'G' for fan-only operation and 'C' for t-stat common
4	Optional: 'Y2' for t-stat control of fan speed
5	Optional: for primary / secondary or buffer tank layouts

Figure 29 *Wiring AHU HC to IBC HPX heat pump*

Basic settings in the app

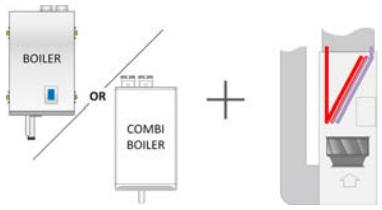
1. Tap ⚙ for **Settings**.
2. Set **Heat Mode** to **Stg 1 HP**.
3. Set **Cool Mode** to **1 Stage HP**.
4. Set **Boiler Heating** to **None**.
5. Tap **SAVE**.

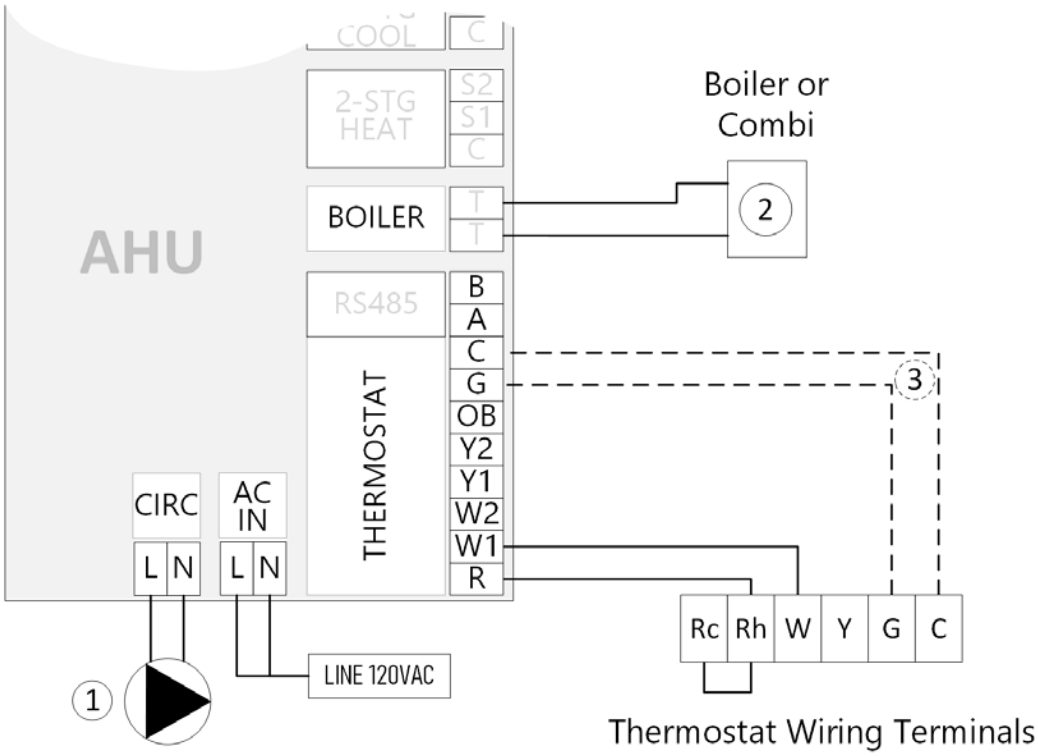
Advanced settings

1. In ⚙ **Settings** select **Advanced Settings**
2. Set **Heat Stage 1 CFM** as desired
3. Set **Heat Air Target** to desired temperature. Fan will modulate its speed down to meet target (given adequate heat). Potential for quieter operation and lower power consumption.
4. Set **Cooled Air Target** to desired temperature. Fan will modulate its speed down to meet target (with adequate cooling). Potential for quieter operation and lower power consumption.
5. Set **Cold House Sentry** to On or Off (default: On). If return air temperature is detected below 41°F (5°C), air handler will initiate heating until 46°F (8°C).
6. Tap **SAVE**.

NOTES

3.8.2 Wiring single-stage heating with a boiler or combi boiler





1	Required if the boiler or combi does not have control of the pump.
2	Dry contact from the air handler to the boiler or combi boiler enables a call for heat.
3	Optional: 'G' for fan-only operation and 'C' for t-stat common.

Figure 30 *Wiring single-stage heating with a boiler or combi boiler*

Basic settings in the app

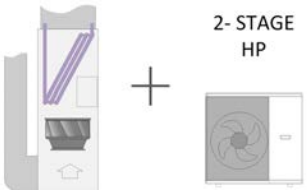
1. Tap ⚙ for **Settings**.
2. Set **Heat Mode** to **1 Stage Heat**.
3. Set **Boiler Mode** to **Boiler Only**.
4. Tap **SAVE**.

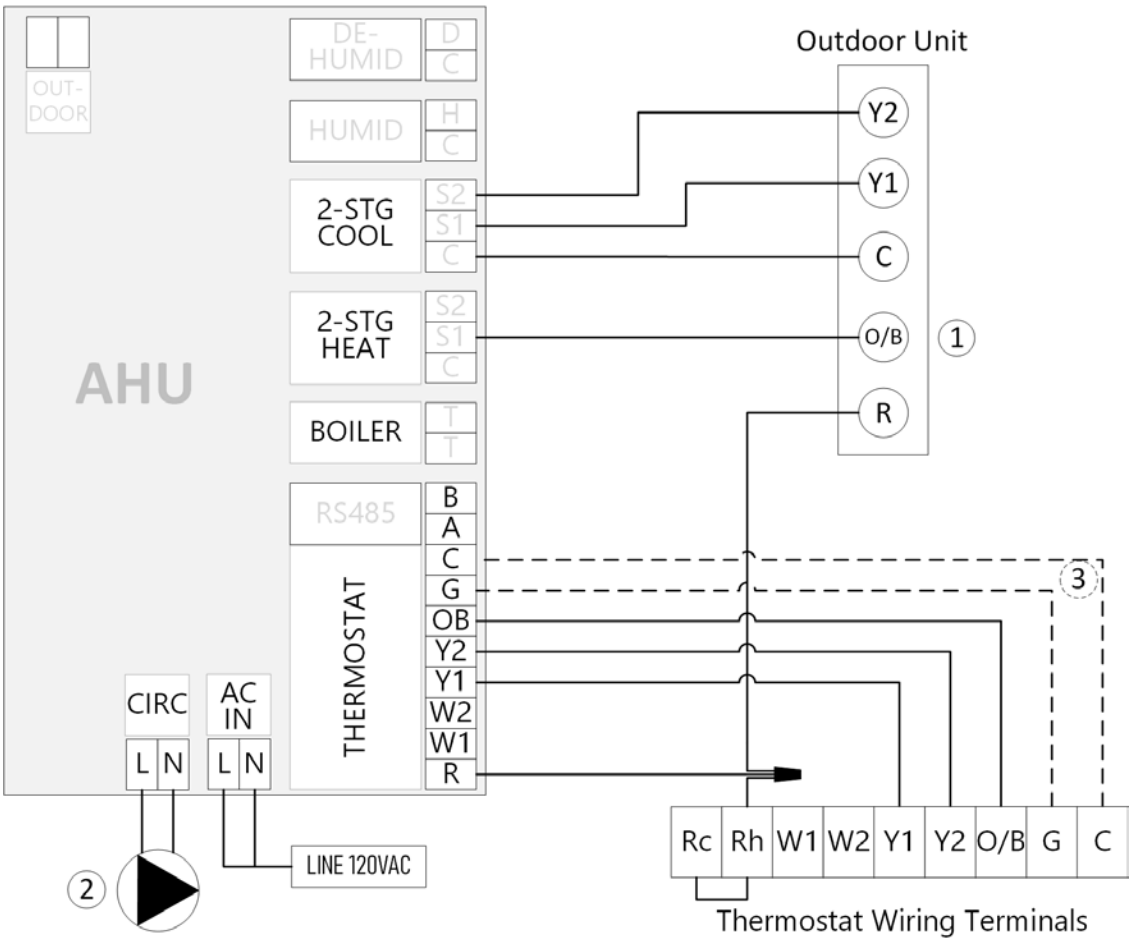
Advanced settings

1. In ⚙ **Settings** select **Advanced Settings**
2. Set **Heat Stage 1 CFM** as desired
3. Set **Heat Air Target** to desired temperature. Fan will modulate its speed down to meet target (given adequate heat). Potential for quieter operation and lower power consumption.
4. Set **Cold House Sentry** to On or Off (default: On). If return air temperature is detected below 41°F (5°C), air handler will initiate heating until 46°F (8°C).
5. Tap **SAVE**.

NOTES

3.8.3 Wiring two-stage hydronic heat pump with two-stage thermostat





1	The reversing valve operation is selectable with the app: by default the board energizes valve during cooling
2	Optional for thermostat control of system pump
3	Optional: 'G' for fan-only operation and 'C' for t-stat common

Figure 31 *Two-stage heat pump (2-stage thermostat) wiring*

Basic settings in the app

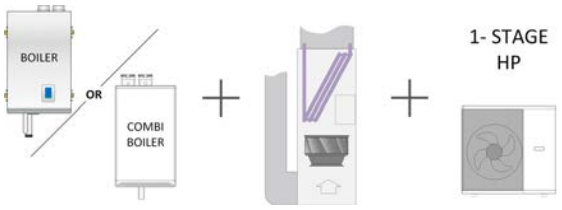
1. Tap ⚙ for **Settings**.
2. Set **Heat Mode** to **Stg 2 HP**.
3. Set **Cool Mode** to **2 Stage HP**.
4. Set **Boiler Heating** to **None**.
5. Tap **SAVE**.

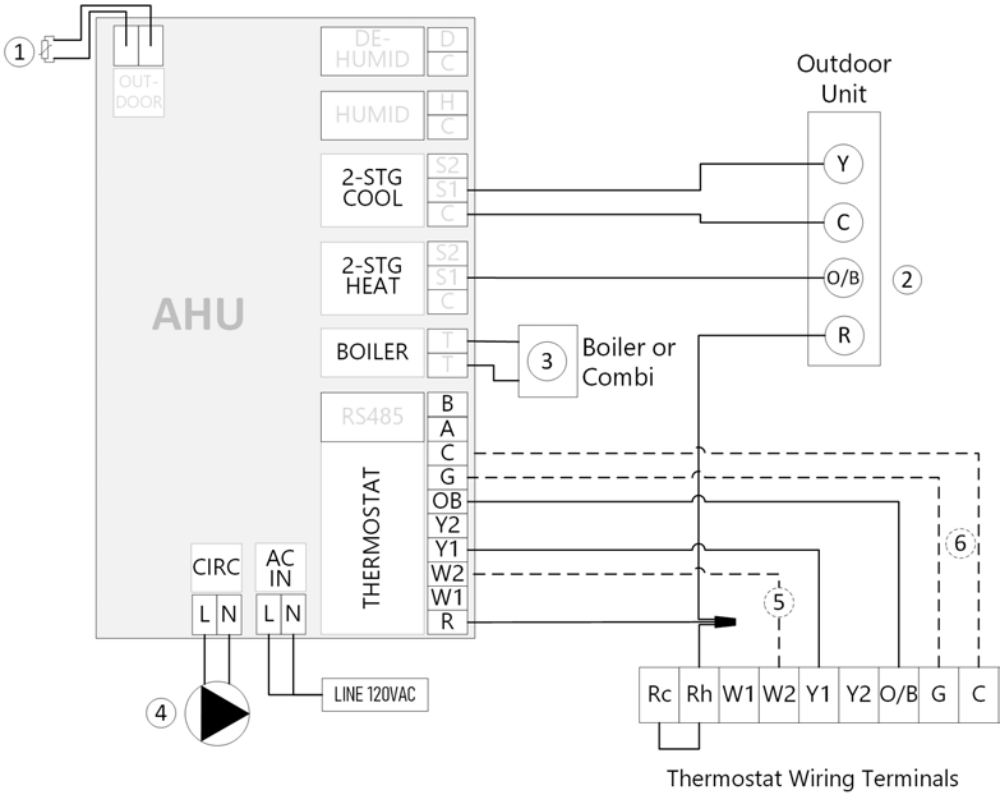
Advanced settings

1. In ⚙ **Settings** select **Advanced Settings**
2. Set **Heat Stage 1 CFM** as desired
3. Set **Heat Air Target** to desired temperature. Fan will modulate its speed down to meet target (given adequate heat). Potential for quieter operation and lower power consumption.
4. Set **Cooled Air Target** to desired temperature. Fan will modulate its speed down to meet target (with adequate cooling). Potential for quieter operation and lower power consumption.
5. Set **Cold House Sentry** to On or Off (default: On). If return air temperature is detected below 41°F (5°C), air handler will initiate heating until 46°F (8°C).
6. Tap **SAVE**.

NOTES

3.8.4 Wiring single-stage hydronic heat pump with a boiler or combi boiler as backup





1	**Required** for balance point control of backup heat source; available separately as outdoor sensor kit *P-9067.*
2	The reversing valve operation is selectable with the app: by default the board energizes valve during cooling
3	Dry contact from the air handler to the boiler or combi boiler that enables a call for heat
4	Required if the boiler or the combi boiler does not have control of the pump
5	Optional: 'W2' to force emergency heat from boiler
6	Optional: 'G' for fan-only operation and 'C' for t-stat common

Figure 32 *Single-stage heat pump with a boiler or combi boiler as backup wiring*

Basic settings in the app

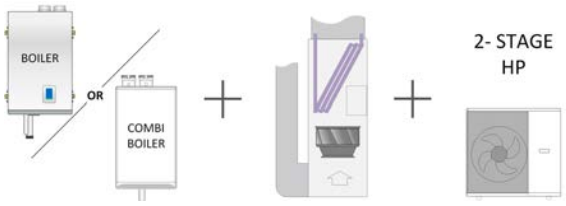
1. Tap ⚙ for **Settings**.
2. Set **Heat Mode** to **Stg 1 HP, Stg 2 Aux**.
3. Set **Cool Mode** to **1 Stage HP**.
4. Set **Boiler Mode** to **Boiler Backup**.
5. Tap **SAVE**.

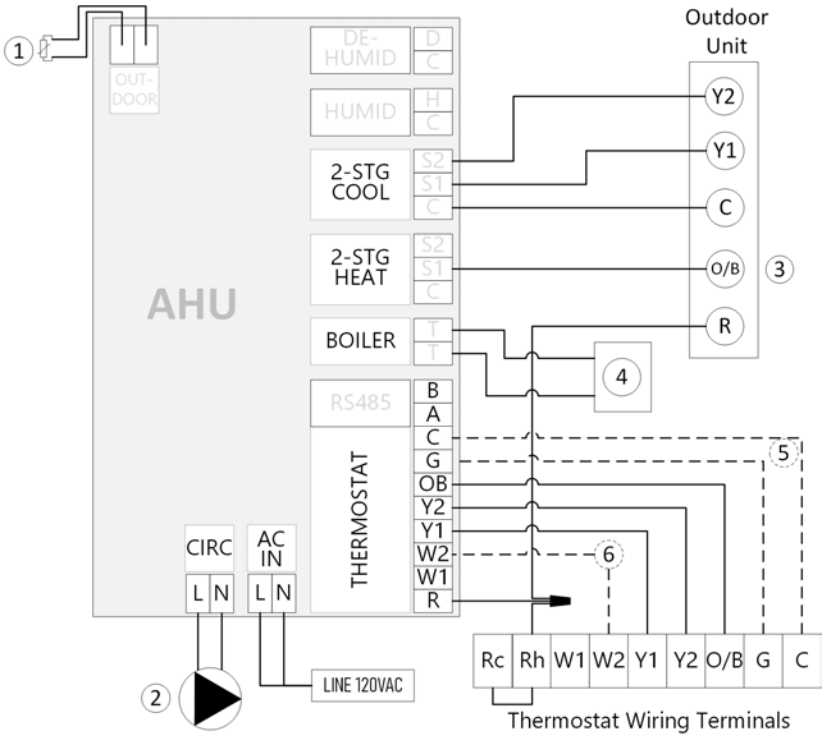
Advanced settings

1. In ⚙ **Settings** select **Advanced Settings**
2. Set **Heat Stage 1 CFM** as desired
3. Set **Heat Air Target** to desired temperature. Fan will modulate its speed down to meet target (given adequate heat). Potential for quieter operation and lower power consumption.
4. Set **Cooled Air Target** to desired temperature. Fan will modulate its speed down to meet target (with adequate cooling). Potential for quieter operation and lower power consumption.
5. Set **Cold House Sentry** to On or Off (default: On). If return air temperature is detected below 41°F (5°C), air handler will initiate heating until 46°F (8°C).
6. Tap **SAVE**.

NOTES

3.8.5 Wiring two-stage hydronic heat pump with a boiler or combi boiler as backup (2-stage thermostat)





1	**Required** for balance point control of backup heat source; available separately as outdoor sensor *P-9067*.
2	Required if the boiler or the combi boiler does not have control of the pump
3	The reversing valve operation is selectable with the app: by default the board energizes valve during cooling
4	Dry contact from the air handler to the boiler or combi boiler that enables a call for heat
5	Optional: 'G' for fan-only operation and 'C' for t-stat common
6	Optional: 'W2' for thermostat call for boiler backup operation

Figure 33 *Two-stage heat pump with a boiler or combi boiler as backup (2-stage thermostat) wiring*

Basic settings in the app

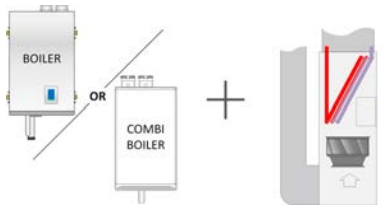
1. Tap ⚙ for **Settings**.
2. Set **Heat Mode** to **Stg 2 HP**.
3. Set **Cool Mode** to **2 Stage HP**.
4. Set **Boiler Heating** to **Boiler Backup**.
5. Tap **SAVE**.

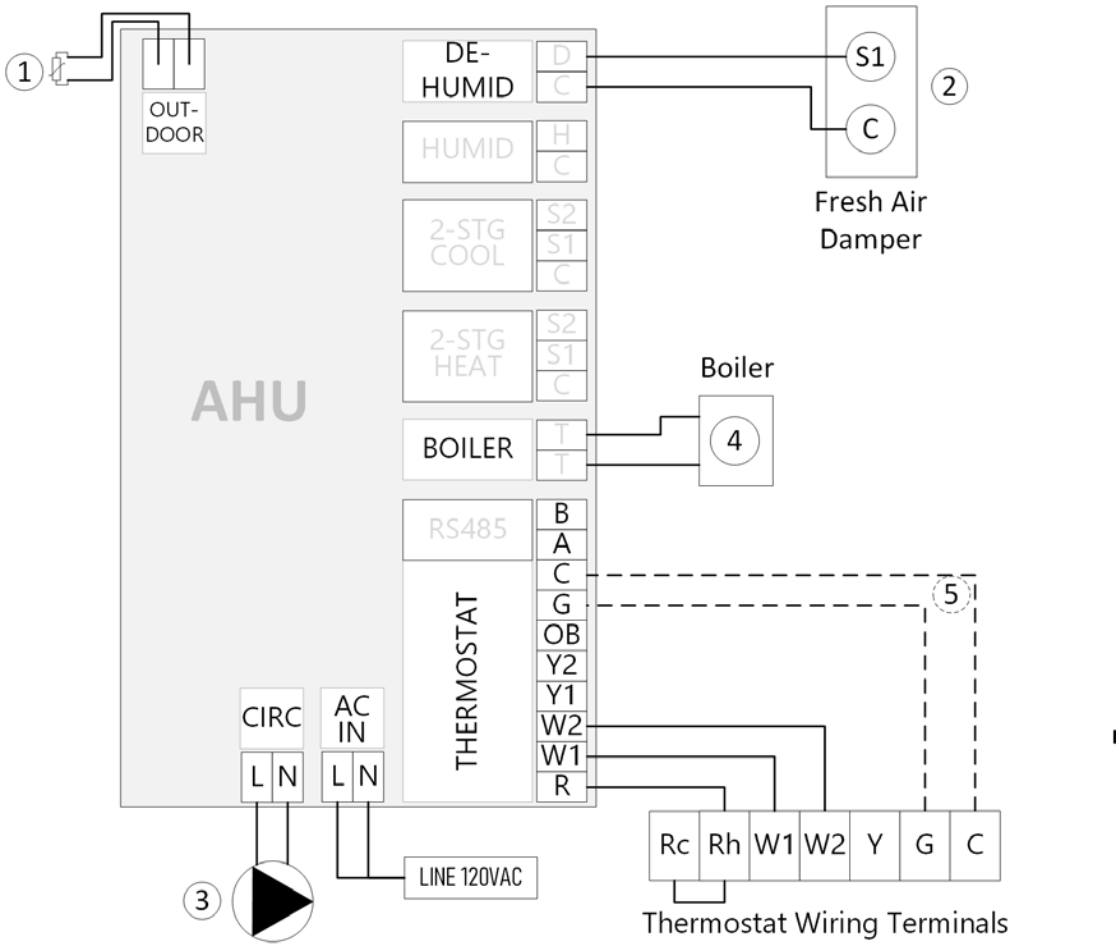
Advanced settings

1. In ⚙**Settings** select **Advanced Settings**
2. Set **Heat Stage 1 CFM** as desired
3. Set **Heat Air Target** to desired temperature. Fan will modulate its speed down to meet target (given adequate heat). Potential for quieter operation and lower power consumption.
4. Set **Cooled Air Target** to desired temperature. Fan will modulate its speed down to meet target (with adequate cooling). Potential for quieter operation and lower power consumption.
5. Set **Cold House Sentry** to On or Off (default: On). If return air temperature is detected below 41°F (5°C), air handler will initiate heating until 46°F (8°C).
6. Tap **SAVE**.

NOTES

3.8.6 Wiring make-up air with a boiler or a combi as a heat source





1	**Required** for temperature control of Fresh Air Damper; the outdoor sensor is available as *P-9067*
2	Normally closed fresh air damper wired to de-humidifer contacts
3	Required if: boiler or combi does not have control of the pump
4	Dry contact from the air handler to the boiler or combi enables a call for heat
5	Optional: 'G' for fan-only operation and 'C' for t-stat common.

Figure 34 *Make-up air with a boiler or a combi as a heat source*

Basic settings

1. Tap ⚙ for **Settings**.
2. Set **Heat Mode** to **1 Stage Heat**
3. Set **Cooling** to **No Cooling**.
4. Set **Boiler Heating** to **Boiler Only**.
5. Tap **SAVE**.

Advanced settings

1. In ⚙**Settings** select **Advanced Settings**.
2. Toggle **FA Damper** On.
3. Set **FA Damper Open T (°F)** to lowest Fresh Air temperature.
4. Set **Heat Stage 1 CFM** as desired
5. Set **Heat Air Target** to desired temperature. Fan will modulate its speed down to meet target (given adequate heat). Potential for quieter operation and lower power consumption.
6. Set **Cold House Sentry** to On or Off (default: On). If return air temperature is detected below 41°F (5°C), air handler will initiate heating until 46°F (8°C).
7. Tap **SAVE**.

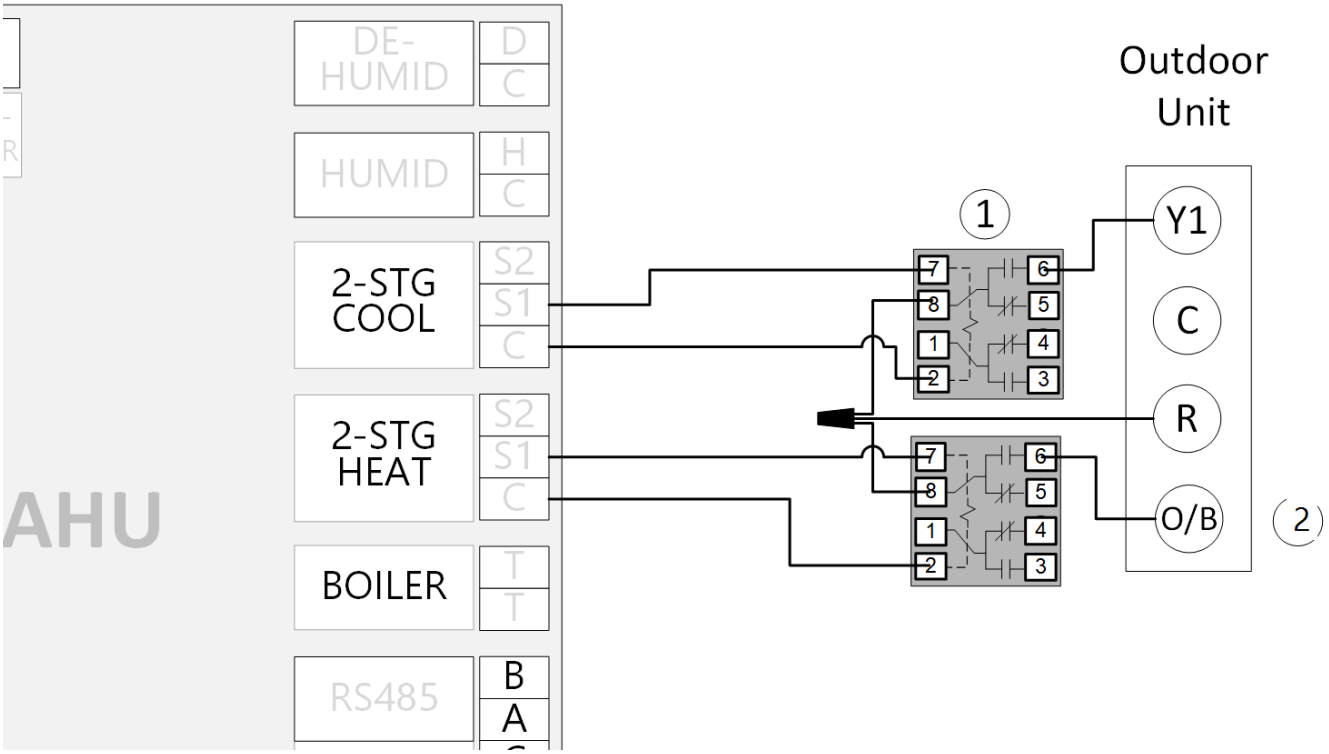
NOTES

3.8.7 Wiring a heat pump needing relays

Caution

If using a heat pump, consult the heat pump's wiring instructions before connecting to the air handler. A heat pump producing its own control voltage requires isolation relays.

If the heat pump's wiring diagram shows a thermostat connecting directly to the air conditioner or heat pump's board (without an external transformer), then isolation relays will be required. See (1) below. If in doubt, power the heat pump before connecting to it, and measure for voltage across control contacts Y and C: a voltage greater than ~2 Volts AC or DC indicates that isolation relays will be necessary.



(1) **Required: 24v relays**, where outdoor unit provides 24V and requires a dry contact (typical of bonded controls). Check your outdoor unit installation manual.

(2) The reversing valve operation is selectable with the app: by default the board energizes valve during cooling

Figure 35 *Single-stage heat pump with a boiler or combi boiler as backup wiring - with isolation relays*

4.0 Before operating the air handler

Once installation of the appliance is completed, and before operation, review the following checklists:

Checking electrical conditions	Check
Ensure the power supply is connected to a dedicated 120VAC 15 amp circuit. The appliance is **not** designed to work with 208-240V. If connected to 208-240V, electrical damage will result, and the appliance or components may need to be replaced.	☐
Check all line voltage electrical connections to ensure all connections are correct and tight.	☐
Check thermostat connections.	☐
Thermostat is in a suitable location, not on an exterior wall or in direct sunlight.	☐
If using a heat pump, consult the manufacturer's wiring instructions. Heat pumps producing their own control voltage will require isolation relays. See *Worked examples on page 37*.	☐

Checking supply and return water piping connections	Check
All connections are pressure tested and leak-free.	☐
All piping flushed to ensure all air is removed.	☐
Check valve is installed and the external pump is flowing in the correct direction.	☐
Boiler / water heater is installed as per the manufacturer's instructions and is safe to operate.	☐

Checking ducting connections	Check
All connections are pressure tested and leak-free.	☐
All duct work is sized correctly and joints are sealed.	☐
All supply air dampers and registers are opened.	☐
Duct insulation is installed and sealed as required.	☐
Inspect the filter, return air ducting and registers to ensure free air movement.	☐

Checking boiler / water heater settings	Check
Ensure the water temperature to the heating coil is sufficient to meet the heating demands of the space.	☐

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5.0 Operation

Once installation of the appliance is completed, and before operating the appliance, review the following guidelines:

5.1 Sequence of operation

Mode	Call From	Activity
Heating	Thermostat	When the contacts between R and W1/W2 are closed, the fan speed will rise to match the CFM set for W1/W2 in *Advanced Settings*.
		When an air handler is connected to a tankless water heater or boiler, the external pump is energized (pump relay is closed).
		When there is a boiler call for heat, the TT (boiler) contacts close. Once demand is satisfied, the TT contacts open to remove the call for heat. Then the fan operates for a further 45 seconds while the pump contacts operate for 30 seconds.
Cooling	Thermostat	When the contacts between R and Y1/Y2 are closed, the fan speed will rise to match the CFM set for Y1/Y2 in *Advanced Settings*.
		For a heat pump (if *O/B Control* set to *Cool*) the O/B terminal is energized.
		Once demand is satisfied, the compressor S1 and /or S2 contacts open, and O/B is de-energized if there is a heat pump. The fan operates for a further 45 seconds.
Heat pump	Thermostat	When the contacts between R and Y1/Y2, and between R and O/B, are closed the AHU will enter Cooling mode. When the contacts between R and Y1/Y2 are closed, and the contacts between R and O/B are open, the AHU will enter Heating mode. The position of the reversing valve (O/B) can be changed in the IBCconnect app.
		The fan is energized and operates at Y1 or Y2 speed; operates at low speed for 60 seconds.
		Once demand is satisfied, the compressor S1 and / or S2 contacts open. The fan will continue to operate for 45 seconds.
Humidification	AHU HC	When a humidifier is enabled and the built-in humidity sensor reads a value below the humidity setpoint defined in the IBCconnect app, the fan will run and the humidifier contacts will energize.
De-humidification	AHU HC	When a dehumidifier is enabled and the built-in humidity sensor reads a value above the humidity setpoint defined in the IBCconnect app, the fan will run and the humidifier contacts will energize.

Mode	Call From	Activity
Cold Air Sentry (Freeze protection)	Return air temperature sensor	Cold Air Sentry mode monitors the return air temperature into the air handling appliance.
		If the internal return air temperature sensor detects a temperature below 41°F, the air handling appliance will energize the fan, the pump contacts, and the TT (boiler) contacts or compressor to create a call for heat. When the return air temperature increases to 46°F or more the air handling appliance will turn off the fan, the call for heat, and pump contacts.
		If the internal return air temperature sensor detects a return air temperature below 35°F, the air handling appliance will turn off the fan, and continue to energize TT (boiler) contacts and pump contacts.

5.2 Status indicators

The appliance displays four LED indicators, each representing an operating status.

POWER (Green) FAULT (Red) HEAT (Green) COOL(Green)

State	LED(s)				Description
Standby	POWER	FAULT	HEAT	COOL	LEDs blink on and off
Heating	POWER		HEAT		LED displays a steady state.
Cooling	POWER			COOL	LED displays a steady state.
Fan only (G)	POWER		HEAT	COOL	Short synchronized flashing.
Warning	POWER	FAULT			LED flashes on. The appliance will continue to operate; however, certain operations may not function correctly.
Fault	POWER	FAULT			LED displays a steady state. The appliance will not service heat or cooling calls.
Connected to app	POWER	FAULT	HEAT	COOL	Each LED blinks on and off twice repeatedly.

Table 15 LED Status indicators

5.3 Operating the air handler using the app

All air handlers come configured with default factory settings. To program the air handler, you will need to download the app to a tablet or smartphone. The free mobile app (Android or iOS app)

enables users to monitor and adjust default settings in a single air handling appliance. This app is **compatible only** with Android and iOS devices.

> **Note**
>
> Alternatively, it's possible to change settings using a USB stick with a custom configuration text file. Using a USB with a custom text file is the best approach for configuring multiple air handlers that will use the same settings (see *Configuring settings and parameters via a USB text file on page 66*).

5.3.1 Downloading the app

GET IT ON Google Play

Download on the App Store

Scan the respective QR codes above on the Google Play or Apple App store and tap **Install**.

5.3.2 Connecting through the app

You can connect the app on your device to the air handler through WiFi. Future versions will also include a Bluetooth connection option.

Connecting through WiFi - Android

You can connect your device to the air handler through the app's WiFi network settings.

> **Note**
>
> While your device is connected to the air handler WiFi, you will not have internet access.

Tip: We recommend setting the WiFi connection to 'Low Data Mode' while using the app.

If the WiFi connection is unstable, see *Unstable WiFi connection* in the manual, ch. 7 *Troubleshooting*.

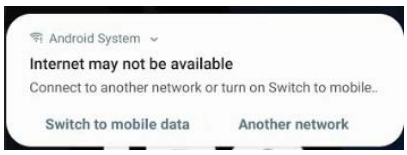
1. Open the app.

   If the WiFi connection is not displayed as IBC-AHU2, tap the **WiFi SETTINGS** button.

   The WiFi network screen appears. The air handler will appear in the device's list of WiFi available networks as "IBC-AHU2-xxxxx", where "xxxxx" is the serial number of the controller in the AHU. If there are multiple AHUs in the area, select the ID that matches the ID printed on the sticker on the controller you want to connect to.

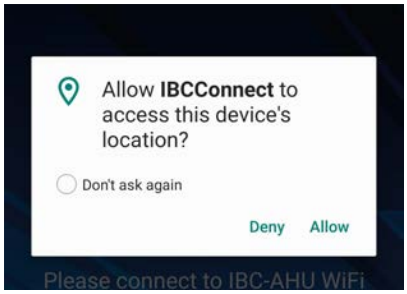
2. Select **IBC-AHU2-xxxxx** (where "xxxxx" is the controller serial number).
3. Enter **1234567890** when prompted for a password.

   Depending on the version of Android your device has, after a few seconds you may see a warning, as shown below. You can ignore this.



   With the air handler cover removed, observe that the circuit board LEDs will start blinking simultaneously in a ◌-◌--- pattern when connected.

   An Android prompt may request that you make your device's location discoverable.



   If prompted to make your device location discoverable, tap **Allow** and then **OK** to grant permission.
4. If prompted, do not check the "Don't ask again for this network"; the device will likely default to "NO" for staying connected if this is selected.
5. Tap the device's back button to return to the app, then tap **GET STARTED** to begin adjusting settings.

> **Note**
>
> Once you have finished using the app, remember to disconnect from the air handler WIFI.

Connecting with WiFi - Apple

You need to first change some app settings after installation. This may vary depending on device and iOS version.

1. In the main iPhone settings, select **Cellular**.
2. Navigate to the device's **WiFi Settings**.
3. Locate and select the -xxx WiFi.

   The air handler will appear in the device's list of WiFi Access Points as "IBC_AHU2-xxxxx", where "xxxxx" is the serial number of the controller in the air handler. If there are multiple units in the area, the appliance with the strongest signal will likely be the controller you want to connect to.
4. Select **IBC-AHU2-xxxxx**.
5. Enter *1234567890* when prompted for a password.

   With the air handler cover removed, observe the circuit board LEDs blinking simultaneously in a ◌-◌--- pattern when connected.
6. Exit from the "Setting" screen and open the app.
7. Check your device is connected to the AHU-HC-xxxxx WiFi connection.

Figure 36 *IBCconnect app logo*

8. If prompted, do not check the "Don't ask again for this network"; the device will likely default to "NO" for staying connected if this is selected.
9. Tap **GET STARTED** to begin adjusting settings.

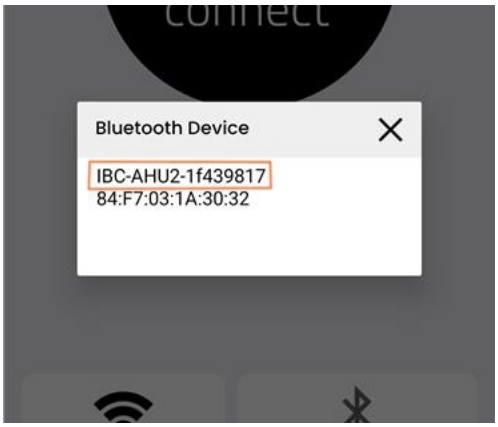
Note

Once you have finished using the app, remember to disconnect from the air handler WiFi.

Connecting through Bluetooth (not available with app version 2.1)

On the app startup screen, press the Connect Bluetooth icon.

A pop-up will appear with scanned nearby devices. Chose the Bluetooth ID beginning with "IBC-AHU2."



Tip: If the scan detects more than one AHU HC, select the ID that matches the ID printed on the control board sticker.

A pop-up will ask you to confirm the connection: press **Pair**.

The **Connect Bluetooth** tile will become active (green text). Tap again to open the app.

5.4 Operational settings in the app

When the app launches, the status page will be shown first. Tap (Settings) to select one of the following options:

- Basic Settings
- Advanced Settings

5.4.1 Basic settings

The following table shows the factory-default settings.

Setting	Default	Description
Heat Mode	2 Stage Heat	Set heating mode. Options: • No heating • 1 Stage Heat • 2 Stage Heat • Stg 1 HP, Stg 2 Aux • 2 Stage Heat Pump
Cool Mode	1 Stage Cool	Set cooling mode. Options: • No Cooling • 1 Stage Cool Only • 2 Stage Cool Only • 1 Stage Heat Pump • 2 Stage Heat Pump
Boiler Heating	Boiler/Aux Backup	Set boiler heating mode. Options: • None • Boiler/Aux Backup • Boiler Only
Temperature	Fahrenheit	Set temperature format. Options: • Fahrenheit • Celsius
Tankless	Off	Set tankless water heater mode: • Toggles On/Off

5.4.2 Advanced settings

Certain Advanced settings are available only after modes have been set up in Basic settings.

Setting	Default	Description
Pump Enabled	On	Set to off if no pump connected to air handler.
Pump Exercise Interval (hours)	24	Circulates water in coil every xx (set hours); set per local code
Pump Exercise Duration (sec)	60	Circulates water in coil for xx (set seconds); set per local code

Setting	Default	Description
Pump Off Delay (sec)	0	After call for heat is satisfied, run pump for xx (set seconds)
Fan Off Delay (sec)	45	After call for heat is satisfied, run fan for xx (set seconds)
Fan Only CFM	Varies by model. See *Fan speed operation on page 62*	Fan circulation mode only
Heat Stage 1 CFM	Varies by model. See *Fan speed operation on page 62*	Fan circulates in heat mode
Heat Stage 2 CFM	Varies by model. See *Fan speed operation on page 62*	Fan circulates in heat mode
HP Stage 1 CFM	Varies by model. See *Fan speed operation on page 62*	Fan circulates in cool mode
HP Stage 2 CFM	Varies by model. See *Fan speed operation on page 62*	Fan circulates in cool mode
Stage Delay (min)	10	The minimum time a heating or cooling stage will run for before engaging the second stage.
Minimum Cycle Time (min)	0	The minimum run time for a heating or cooling call.
Compressor Delay (min)	2	Delay in xx (minutes) to allow compressor pressures to equalize. If time delay in thermostat is enabled, then this value can be set to '0'.
Heated Air Target (°F)	109	When Tankless Mode is enabled, fan speed is ramped up based on supply air temperature. e.g., as air temp increases fan speed will increase.
Cooled Air Target (°F)	55	Allows fan speed to ramp up based on supply air temperature. e.g., as air temp decreases fan speed will increase.
S1 O/B Control	O/B Cool (Energized for cooling)	• S1 - W1 W2, Y1 and Y2 inputs pass through as Heat 1, Heat 2, Cool 1 and Cool 2 outputs. (O/B input line ignored.) • O/B Heat - Y1 or Y2 with O/B active energize the Heat 1 and Heat 2 outputs. Y1 or Y2 active without O/B will energize the Cool 1 and Cool 2 outputs. • O/B Cool - Y1 or Y2 with O/B active will energize the Cool 1 and Cool 2 outputs. Y1 or Y2 active without O/B will energize the Heat 1 and Heat 2 outputs.

Setting	Default	Description
Heat Pump Balance Point (°F)	14	Calculated based on building heat loss and selected heat pump.
Static Pressure (inches WC)	0.5	Based on the ducting system design. Cannot be adjusted on LV (low velocity) models.
Humidifier	Off	Sends 24V to activate the humidifier. Activates based on the return air sensor.
Dehumidifier	On	Sends 24V to activate the dehumidifier. Activates based on the return air sensor.
Humidity Minimum (%)	15	Based on the humidity sensor in the return air.
Humidity Maximum (%)	45	Based on the humidity sensor in the return air.
FA Damper	Off	Fresh air damper.
FA Damper Open T (°F)	41	Temperature to open fresh air damper. Uses the dehumidifier contact. Based on the outdoor sensor.
Cold House Sentry	On	Maintains the minimum ambient temperature inside the house.
Network ID	0	For future development

5.4.3 Advanced status

The Advanced Status values will vary based on the current system settings and operating conditions. See *Advanced settings on page 59* for detailed descriptions for each status.

Advanced status - System Feedback	
Mode	AC/HP Air Temp (°F)
Pump On	AC/HP Coil Temp (°F)
Fan RPM	Dehumidifier Temp (°F)
Fan CFM	Dampers Open
Outdoor Temp (°F)	Humidity Target %
Inlet Temperature (°F)	Humidity Actual %
Outlet Temperature (°F)	Cold House Sentry
Return Air Temp (°F)	
Outlet Air Temp (°F)	
Call Status* W1 ☐ W2 ☐ Y1 ☐ Y2 ☐ G ☐	

*A check box will display to indicate a call for heating and cooling, stage 1 or 2.

5.4.4 Fan speed operation

> **Note**
>
> For safety reasons, a switch is built into the door. The switch prevents the fan from operating if the door is not installed. With the door removed, the appliance's control board will remain powered, enabling programming of the mobile app.

For fan speed defaults and ranges, see the table below:

Fan Speed Operation		
Voltage Terminal	**Description and Defaults**	**Range (CFM)**
AHU 1200 HC		
W1	Heating stage 1 = 600 CFM	180 – 1200
W2	Heating stage 2 = 1000 CFM	180-1200 (must be ≥ 1 Stage Heat)
Y1	Cooling stage 1 = 800 CFM	180 – 1200
Y2	Cooling stage 2 = 1200 CFM	180 – 1200 (must be ≥ HP / Cool Stage 1)
G	Fan on speed = 240 CFM	180 – 1200
AHU 2000 HC		
W1	Heating stage 1 = 1200 CFM	240 – 2000
W2	Heating stage 2 = 1800 CFM	240-2000 (must be ≥ 1 Stage Heat)
Y1	Cooling stage 1 = 1500 CFM	240 – 2000
Y2	Cooling stage 2 = 2000 CFM	240-2000 (must be ≥ HP / Cool Stage 1)
G	Fan on speed = 500 CFM	240 – 2000

Table 16 *Fan speed operation*

5.5 Programming the air handler

The factory pre-programs the name of the model in the appliance. You will need to set up the mode before you can make changes to settings. Settings must be saved by pressing the **Save** button after changes are made.

Setting the mode

To set the mode using the app:

1. Tap ⚙ (Settings)
2. Set the mode(s) that apply. For example, if you are connecting the air handler:
   - » With a heat pump for heating, select either 1 or 2-stage heating.
   - » With a heat pump for cooling, select either 1 or 2-stage cooling.
   - » With a boiler for heating, select Boiler Heating.
   - » With a tankless, select On.
3. (optional) To change the default temperature unit to Imperial, tap Fahrenheit (toggles to Celsius).
4. Tap **SAVE**.

Once you have set the mode(s), you can adjust each parameter in detail under Advanced Settings in the menu ☰. Here you can adjust the default settings.

5.5.1 Adjusting the default settings/parameters

Before adjusting the settings, ensure that you have previously set up a Mode.

1. ⚙ (Settings), and then select **Advanced Settings**.

   We recommend setting "Tankless" to "On" in most applications for optimal performance.
2. Configure settings as desired (or accept defaults), and then tap **SAVE**.

5.5.2 Setting the static pressure

The air handlers are set up with a default of 0.5" WC low static pressure. You can adjust the static pressure for other models to optimize the air flow of the fan. For rated static pressure per model, see *Advanced settings on page 59*.

5.5.3 Setting the reversing valve

The settings for the reversing valve is displayed as **S1 O/B Control** under **Advanced Settings**.

The air handlers are energized for cooling (O/B Cool) as a default. Some heat pumps have different setting requirements; check with your heat pump manufacturer to determine the setting.

5.5.4 Checking the Call status

To check if the fan is operating when there is a call for heating or cooling:

1. Tap ☲ (Status), and then select **Advanced Status**.
2. Go to **Call Status**. A check mark is displayed in one of the boxes to indicate a call for heating or cooling (stage 1 or 2).

5.5.5 Connecting to another air handler on the network

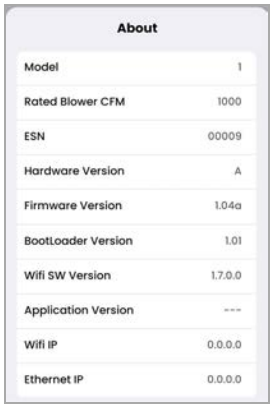
If you want to connect to another air handling appliance, on the landing page tap the **WiFi SETTINGS** button, and choose the required WiFi connection. To return to the landing page, exit the app, and then reopen it.

5.5.6 Finding the model number

To find the air handler model number, tap ●●● (More), and then select **About**.

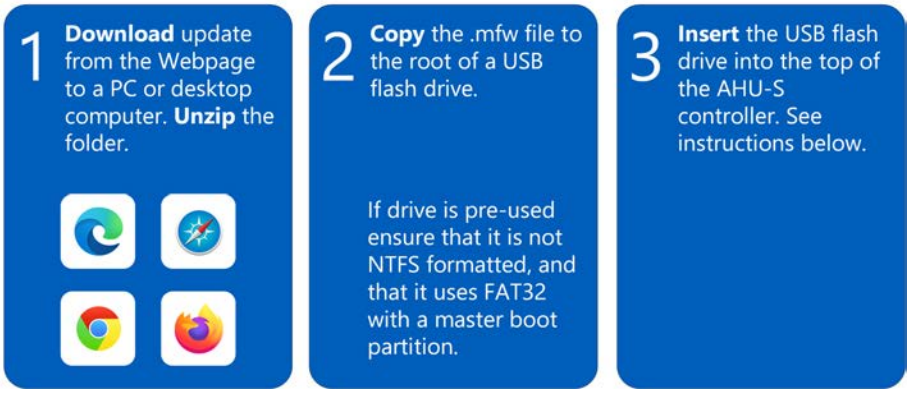
5.5.7 Checking the software version

To view the software version for the air handler, tap ●●● (More) and then select **About**.



5.6 Updating the software version

The software update process is in three steps:



1. **Download the software to a USB. Unzip the folder.**

   a. Use this link to reach the software update page: Download AHU-HC software for a USB update. You will see a Download button that allows you to save a zipped folder to your computer.

   b. Unzip the folder. You will use the .mfw inside (not the folder).

2. **Copy the file to the USB stick:**

   a. Place a high-quality USB stick in your computer and note the drive letter (for example, **D:**). It must be formatted in FAT 32. (It must *not* be NTFS enabled or formatted.)

   b. Copy the .mfw file to the stick's root directory.

3. **Take the USB to the air handler site, insert it into the left side of the board, and update the software:**

   a. The controller should be in "Standby"

   b. Insert the flash drive into the controller.

   c. The three status LEDs should come on solid.

   d. When all three status LEDs start blinking simultaneously, remove the flash drive.

   e. The controller will then reboot, and is ready to go again.

5.7 Configuring settings and parameters via a USB text file

For large projects with multiple appliances, settings and parameters can be saved and quickly applied across each appliance using a USB stick.

You can change and customize the default settings in one or more air handlers via a single .config ASCII text file labeled "ahusetup.cfg". Note that file names for the configuration file must be in lowercase. The custom text file can be placed on a USB stick and inserted into each air handling appliance. To obtain a custom text file, contact Technical Support.

```
UnitID=IBC-AHCU-150
HeatMode=2
CoolMode=2
PumpEnabled=1
Tankless=0
FanOnlyMin=20
FanMin1=50
FanMin2=80
Humidifier=0
DeHumidifier=0
FreezeGuard=1
OpenTherm=0
Zones=1
CompressorDelay=240
DesignMin=-15
DesignMa=35
FanOffDelay=60
```

6.0 Service and maintenance

The air handling appliance is designed for durability and easy access to the main components: fan assembly, hot water coil assembly, and control board. Over time, components such as sensors may require replacing and servicing. Note that failure to use the correct procedures or parts could result in unsafe operation.

6.1 Maintenance checklist for owners

Owners should arrange follow-up inspections and simple maintenance procedures according to the suggested servicing guidelines below.

Maintenance Required	Frequency	Check
Check the external filter monthly. Clean or replace external filter as needed. Inspect system for unusual noises. Call your local heating contractor for service if needed.	Monthly	☐
Check the condensate drain and tray for leaks, blockages and mold. Clean with warm soapy water as needed. Call your local heating contractor for service if needed.	Annually	☐
Have your local heating contractor inspect the system annually. This service should include the heat appliance connected to the Air Handling appliance.	Annually	☐

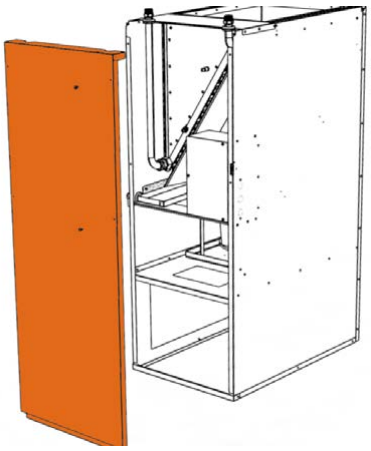
6.2 Maintenance checklist for service contractor

Maintenance Required	Frequency	Check
Check and replace filter	As needed	☐
Check the condition of the fan	Annually	☐
Check the condition of the heating coil	Annually	☐

6.3 Maintenance for the heating contractor

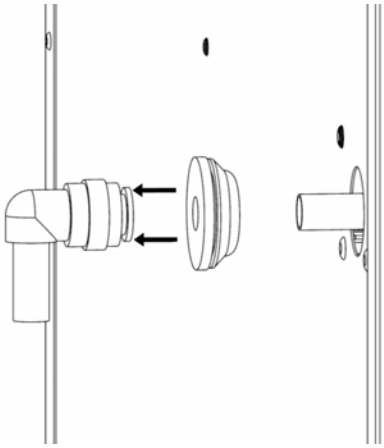
6.3.1 Cleaning the condensate tray

1. Remove the four front screws, set aside, and remove the door.

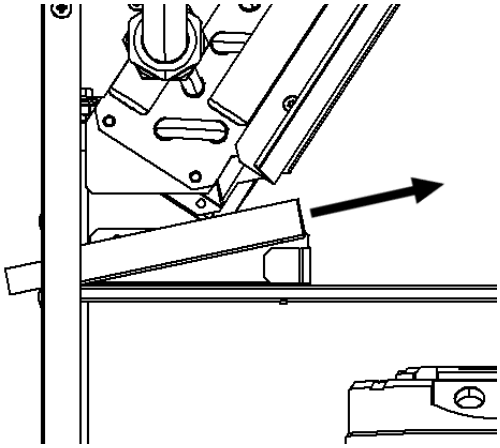


2. Inspect the condensate drain tubing for kinks, blockage and mold. Tubing must make a trap.

3. Push retainer ring on elbow fitting then pull to remove. Remove tube grommet.



4. Tilt condensate trap up and lift out to the right.



5. Clean tray and tubing. Reinstall tray and reconnect drain tubing. Prime trap and test for leaks.

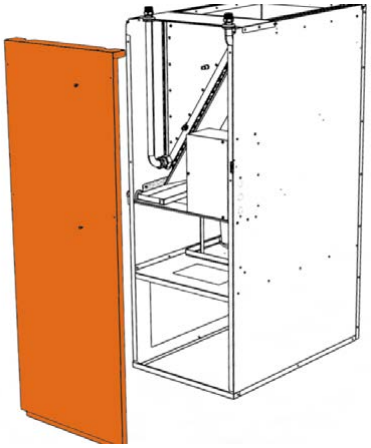
Figure 37 *(Sequence) Condensate tray cleaning.*

6.3.2 Removing the fan assembly

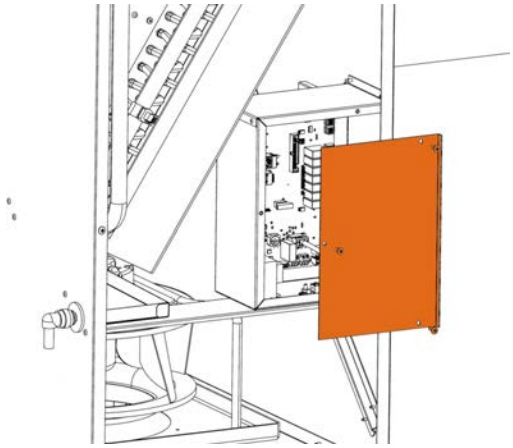
Warning

Before performing the above procedure, turn off the power to the air handler.

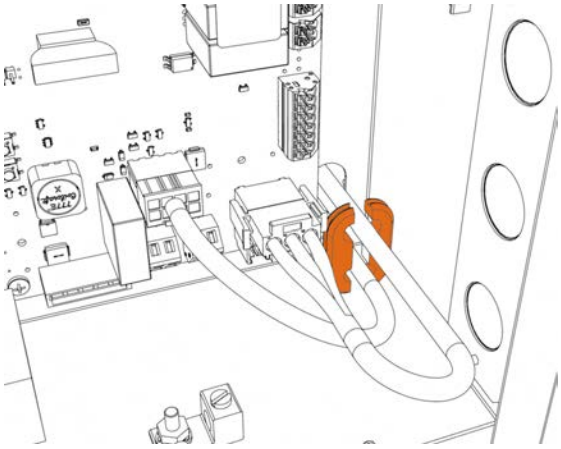
1. Remove the four front screws, set aside, and remove door.



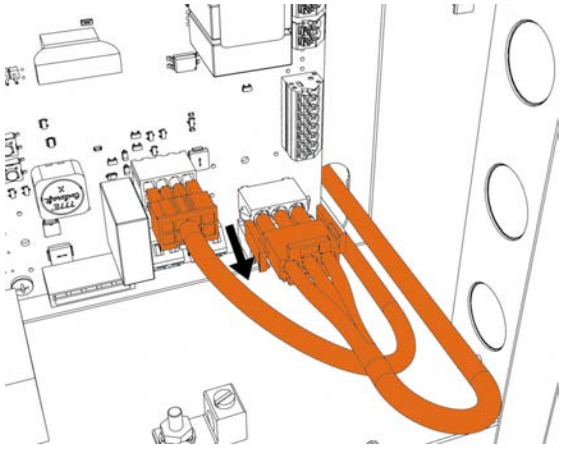
2. Remove the three electrical cover screws, set aside, and remove cover.



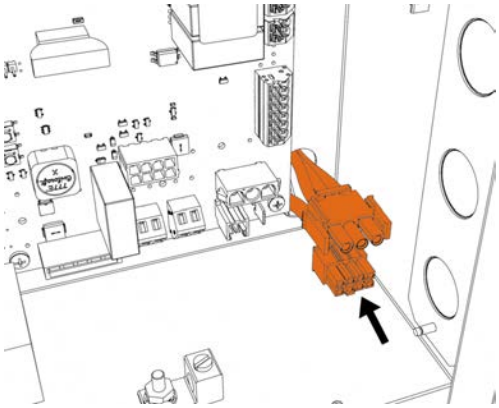
3. Remove and set aside the two-piece grommet securing the fan cables.



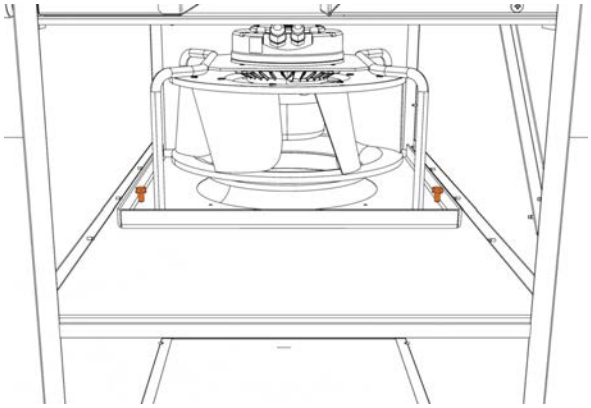
4. Detach fan cable connectors from board.



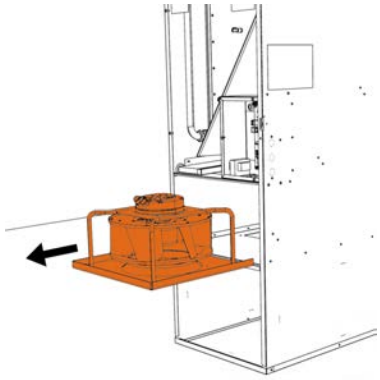
5. Thread the fan cables through the grommet hole.



6. Remove the two bolts securing the fan at the front corners.



7. Tilt up the front edge of the fan, and slide out.



8. Reinstall components in the reverse order. When reinstalling fan, ensure plate slides into lances at rear of unit.

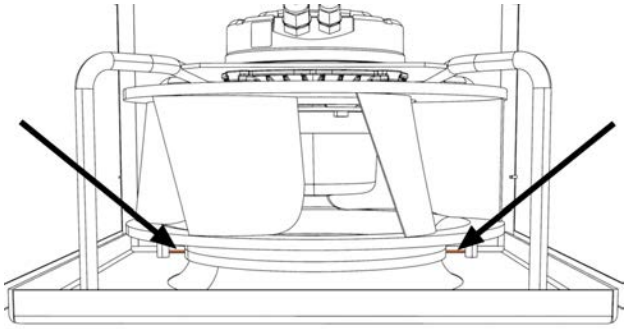
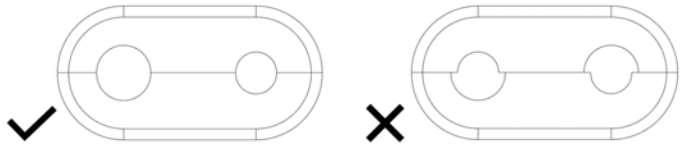


Figure 38 *(Sequence) Replacing the fan.*

Note

When you install the replacement fan assembly:
- Ensure that the fan cables are routed towards the front right of the unit.
- Reinsert the split fan grommet correctly. Note large and small holes in the images below

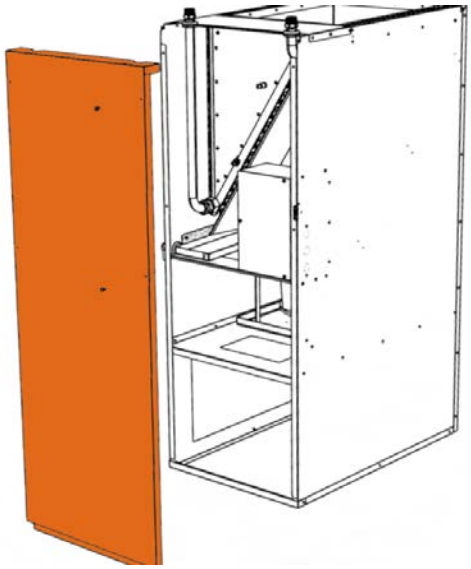


6.3.3 Replacing the heating coil in the air handler

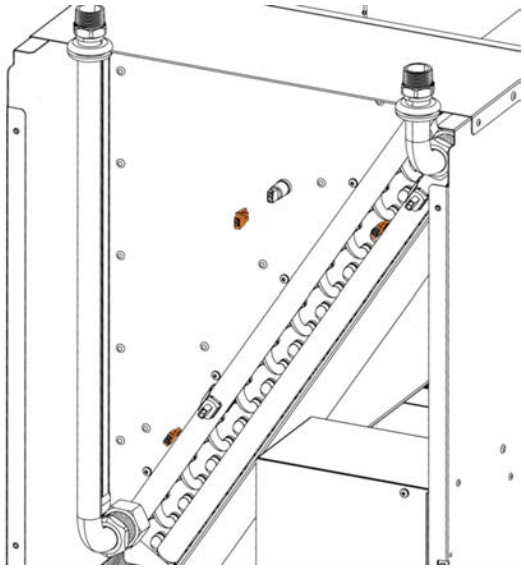
Warning

Before performing the following procedure:
- Turn off the electric power.
- Close off the isolation valves for the water lines to the water heater, and drain.
- Disconnect the water lines from the coil.

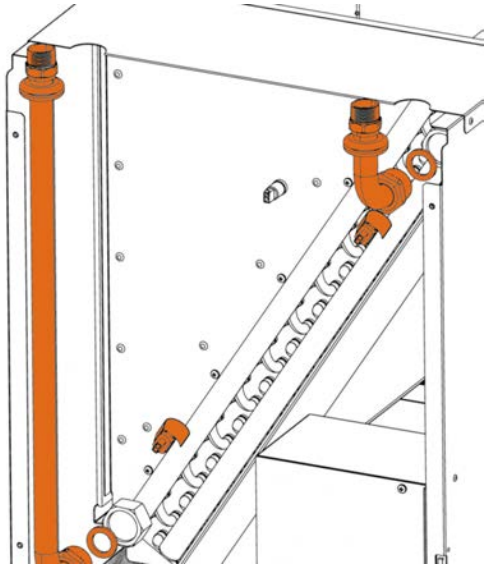
1. Remove the two front screws, set aside, and remove the door.



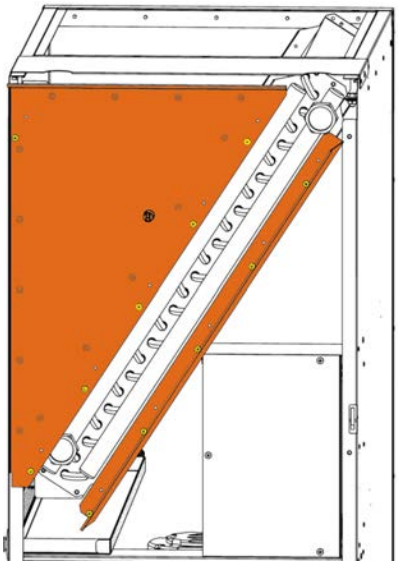
2. Remove the air temperature probe and unclip from the coil the two temperature sensors.



3. Unscrew the inlet and outlet drop-pipes from the coil. Disconnect the drop-pipes from the system piping. Remove inlet and outlet pipe gaskets.

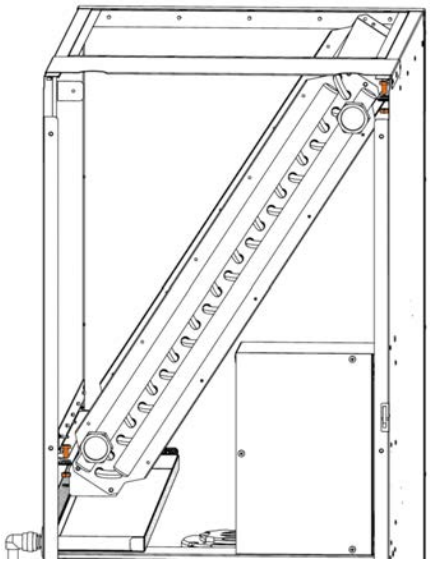


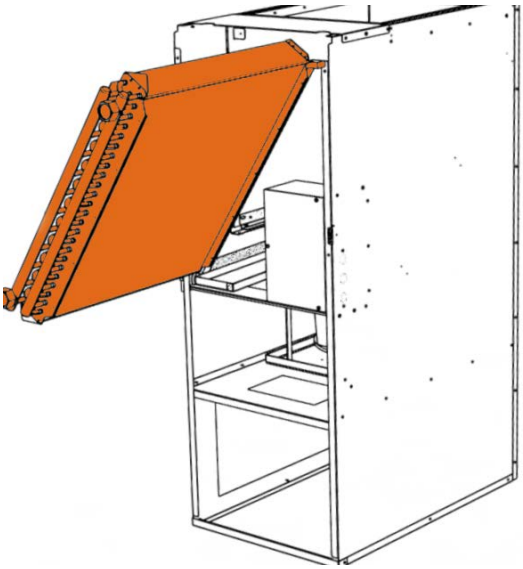
4. Remove the six screws and securing the baffle/triangular piece. Remove the five screws securing the ramp.



5. Remove the two nuts and bolts at the top and bottom of the coil.

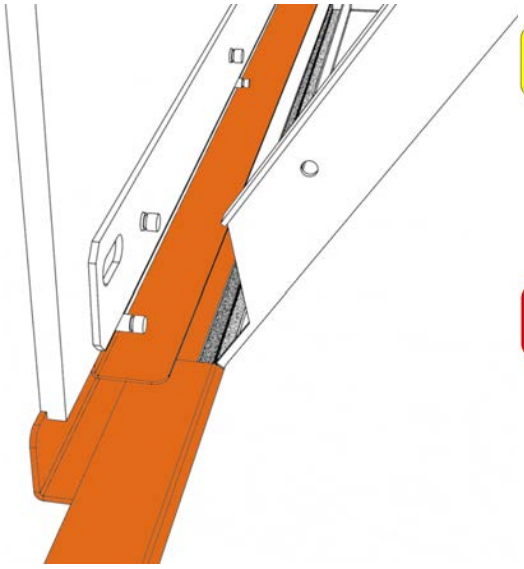
6. Slide out the water coil.





7. Slide in the new coil, ensuring it sits between the supporting bracket and the upper bracket.

8. Reassemble the rest of the parts in reverse order. Note the inlet temperature sensor (RED) is clipped onto the coil's top/left manifold, and the outlet sensor (BLUE) onto the bottom/right manifold.



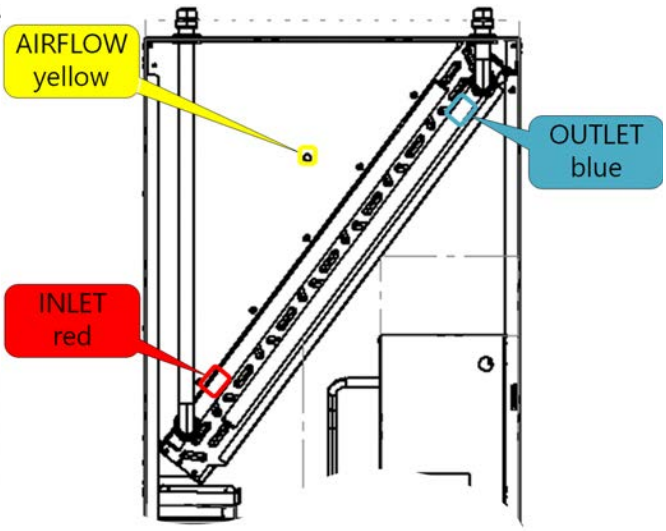


Figure 39 *(Sequence) Replacing the coil.*

6.3.4 Replacing the control board

After you replace the control board in the appliance, you will need to program some settings using the app.

To replace the control board:

1. Unplug all the connectors from the control board.
2. Remove the four screws securing the control board to the appliance, and set them aside for the replacement board.
3. Place the replacement board on a flat surface, and using a scoring knife, score a straight line between the main board and the humidity probe strip. The strip should snap off by hand, without force.

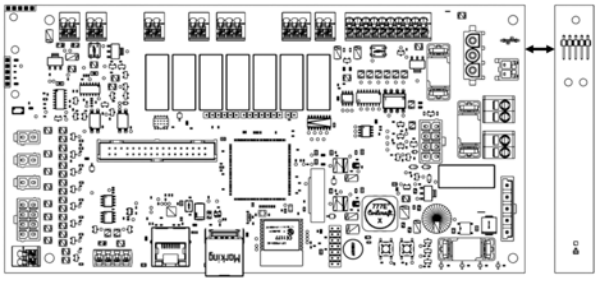


Figure 40 *Separating the humidity probe strip from the main replacement board*

4. Insert the humidity probe strip into the board's 5-pin connector (see below), and secure the strip with a plastic zip tie.

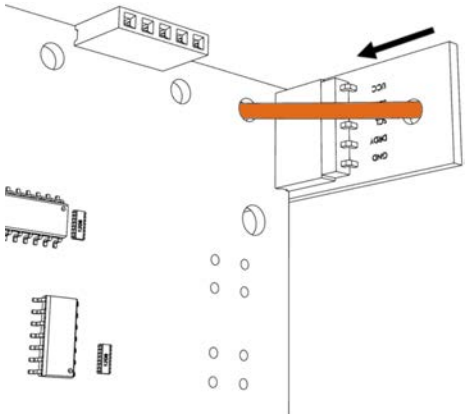


Figure 41 *Inserting the humidity sensor strip and securing with a cable tie*

5. Guide the humidity sensor through the heat exchanger gasket and insert the sensor and board into place. Secure the replacement board with the four screws.

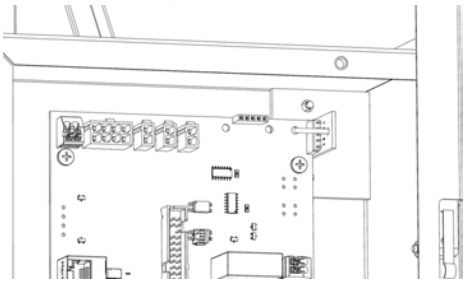
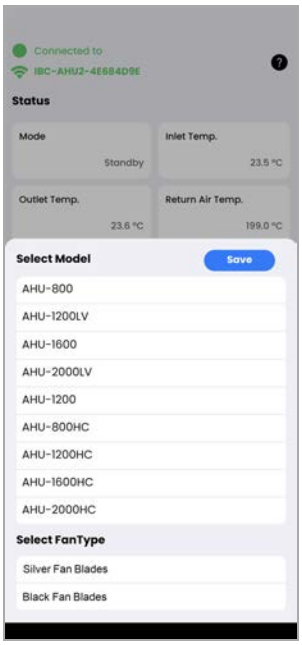


Figure 42 *Putting the replacement board into place*

6. Plug in all connectors (temperature sensors from the coil, connector for the transformer, connector for fan power, connector for fan control, connector to the door switch, and the ground wire connector).

   Now you must use the air handler app to program the model name, mode, and change default settings (if desired).

7. To set the model, mode, and to configure settings:
   a. Open the app on your phone.
      i. Open the app on your phone.



   b. Go to **Configure AHUHC**.

c. From the **Model** dropdown, select the correct **AHUHC** model.
d. Select the **Fan Type** by colour, **Black Fan Blades** or **Silver Fan Blades** (metallic).
e. Select **SAVE**.

   After saving, the controller will restart.

f. Close the app, and then open it again.

For information on setting the cooling and heating mode and other settings, see *Programming the air handler on page 62*.

Caution

Always replace the controller cover before resuming normal operation: failure to replace cover will likely lead to water damage not covered by warranty.

6.4 Temperature sensors

The resistance of the temperature sensors varies inversely with temperature. You need to measure the temperature of the sensed environment compared with the value from the measurement of the resistance (obtained by connecting a good quality test meter capable of measuring up to 100 kΩ at the controller end of the sensor lead).

To obtain a resistance reading, remove power to the boiler. Remove the wire leads by disconnecting their respective Molex connectors from the sensor(s) in question. Place multi-meter probes into the sensor's female Molex connector socket. Do not apply voltage to the sensor - damage may result.

Temp. °F/°C	Resist. Ω – Ohm	Temp. °F/°C	Resist. Ω – Ohm
0 / -18	85,362	100 / 38	5,828
5 / -15	72,918	105 / 41	5,210
10 / -12	62,465	110 / 43	4,665
15 / -9	53,658	115 / 46	4,184
20 / -7	42,218	120 / 49	3,760
25 / -4	39,913	125 / 52	3,383
30 / -1	34,558	130 / 54	3,050
35 / 2	29,996	135 / 57	2,754
40 / 4	26,099	140 / 60	2,490
45 / 7	22,763	145 / 63	2,255
50 / 10	19,900	150 / 66	2,045
55 / 13	17,436	155 / 68	1,857
60 / 16	15,311	160 / 71	1,689
65 / 18	13,474	165 / 74	1,538
70 / 21	11,883	170 / 77	1,403
75 / 24	10,501	175 / 79	1,281
80 / 27	9,299	180 / 82	1,172
85 / 29	8,250	185 / 85	1,073
90 / 32	7,334	190 / 88	983
95 / 35	6,532	195 / 91	903

Table 17 *10K Ω Temperature sensor resistance values*

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7.0 Troubleshooting

This section includes a table of warning and error messages that may appear on the appliance as well faults that may appear on the air handling appliance app. A problem that does not prevent the operation of the air handler is declared as a "warning". A problem that prevents the appliance from operating is declared as an "error" and the appliance is shut down.

7.1 Using the app to troubleshoot the Air Handler

When connected to the appliance, the app will display real-time warnings, error messages, and faults.

To view currently active warnings, error messages, or faults:

1. Ensure your air handler is connected to the app. See *Programming the air handler on page 62*.
2. If a warning, error, or fault is active, the **Faults** tab will become selectable.
3. Tap **Faults** and compare active codes with *Troubleshooting on page 79* for troubleshooting information.

7.2 Warning / fault codes

Fault Code/Error Message	Description	Possible Fix
Inlet Temperature Sensor Outlet Temperature Sensor Aux Air In Temperature Sensor Air Out Temperature Sensor Cool Air Temperature Sensor A/C Temperature Sensor Dehumidifier Temperature Sensor Outdoor Temperature Sensor Air In Temperature Sensor (Probe)	Sensor not connected or faulty.	Check the sensor. For resistance reading, see *10K Ω Temperature sensor resistance values on page 77*.
Humidistat	Probe not connected or device is faulty.	Visually check the probe
Door Open / No Fan Signal	Service door is open or fan fault.	• Check door • Check if door switch is faulty: depress and check for continuity with a multimeter. • Check if harness is disconnected. • Check if fan is turning.
No Fan RPM	No rotation of the fan is detected. **WARNING** Do not touch fan when unit is powered and fan harness connected.	• Inspect the fan harness for signs of damage. • Inspect the fan for any obstructions. • Disconnect harness from fan and check harness for 120VAC.

Fault Code/Error Message	Description	Possible Fix
A/C Freeze	Freezing detected in the A/C coil.	The coil needs to defrost. Refer to the manual for the air conditioner for details on how to prevent freezing.
Dehumidifier Freeze	Freezing detected in the dehumidifier appliance.	The coil needs to defrost. Refer to the manual for the dehumidifier for details on how to prevent freezing.
Thermostat Fault	Simultaneous heating and cooling calls detected	• Check thermostat wiring • Test t-stat wires that should be inactive by disconnecting them from the control board. • Set thermostat to off/inactive and use a multimeter to measure voltage from Y to C and W to C: no voltage should be present.
RTOS Fault	Software fault	Contact Technical Support for software upgrade.

Table 18 *Warnings and error messages shown on the air handler unit app*

7.3 Measuring voltage on air handler boards

The control voltage transformer is not bonded to the air handler cabinet. When measuring the voltage supplied to the individual control circuit, you must reference the common post of the circuit. If you measure to ground or to another common terminal, misleading readings of approximately 14V will occur.

To test for nominal 24V, reference the adjacent COM connection. For example, to test voltage at Compressor S1 terminal, measure for VAC between Compressor COM and Compressor S1 and do *not* reference the Thermostat COM terminal.

7.4 Pump not energized

If the pump is not energizing:

- In the app, go to **Advanced Settings**, and check that **Pump Enabled** is set to "on".
- In the app, go to **Basic Settings**, and check that **Heat Mode** is not set to "Heat Pump": During Stage 1 Heat Pump heating, the air handler pump is not energized by design, to avoid interfering with circulation through the heat pump. Air Handler pump is energized at Stage 2 call for heat.
- Check the air handler board for blown pump fuse—the only fuse rated for 10A. See *Fuses on page 34*.

7.5 Troubleshooting the app

7.5.1 Unstable WiFi connection

If the app is unable to maintain a connection to the air handler WiFi, the app footer will show an "X" icon above WiFi. It is likely the device is attempting to perform uploads in the background. To prevent cell phone data and WiFi conflict:

1. Remove the air handler WiFi connection from the device.
2. Go to the device's **WiFi Setting**.
3. Press and hold the IBC-AHU2-xxxxx entry.
4. Tap **Forget Network**.
5. Place the device in "Airplane Mode".
6. Reconnect the device to the air handler WiFi by selecting the "IBC-AHU2-xxxxx" from the list of access points. Ensure that the WiFi reconnect option is disabled.
7. Start the app again.

Note

While your device is connected to the air handler WiFi, you will not have internet access.

7.5.2 WiFi Password

The WiFi password for all air handlers is '1234567890'.

7.5.3 App unable to find air handler on the network

The app needs to detect the air handler on the WiFi network via its network ID (SSID - Service Set Identifier). Check that the location access for the app is enabled in the device's 'App Settings' menu, set to 'Allow only while using the app'. Other permissions may be required depending on the device and the operating system used.

7.6 Using built-in diagnostics

If required by Technical Support, information on settings, faults, and errors can be exported onto a USB stick as part of the appliance's built-in diagnostic feature.

To view diagnostics:

1. Insert a USB stick into the controller, wait approximately 10 seconds, and then remove the USB stick.

The controller generates a text file that contains all the settings and any faults or warnings that are present on the appliance.

2. To view the text file, insert the USB stick into any computer, and open the generated text file with “Wordpad” or a similar program.

   The file name will be: “AHUxxxxx.TXT”, where “xxxxx” is the serial number of the controller.

```
UnitID=IBC-AHCU-150
HeatMode=2
CoolMode=2
PumpEnabled=1
Tankless=0
FanOnlyMin=20
FanMin1=50
FanMin2=80
Humidifier=0
DeHumidifier=0
FreezeGuard=1
OpenTherm=0
Zones=1
CompressorDelay=240
DesignMin=-15
DesignMa=35
FanOffDelay=60
```

8.0 Wiring diagram

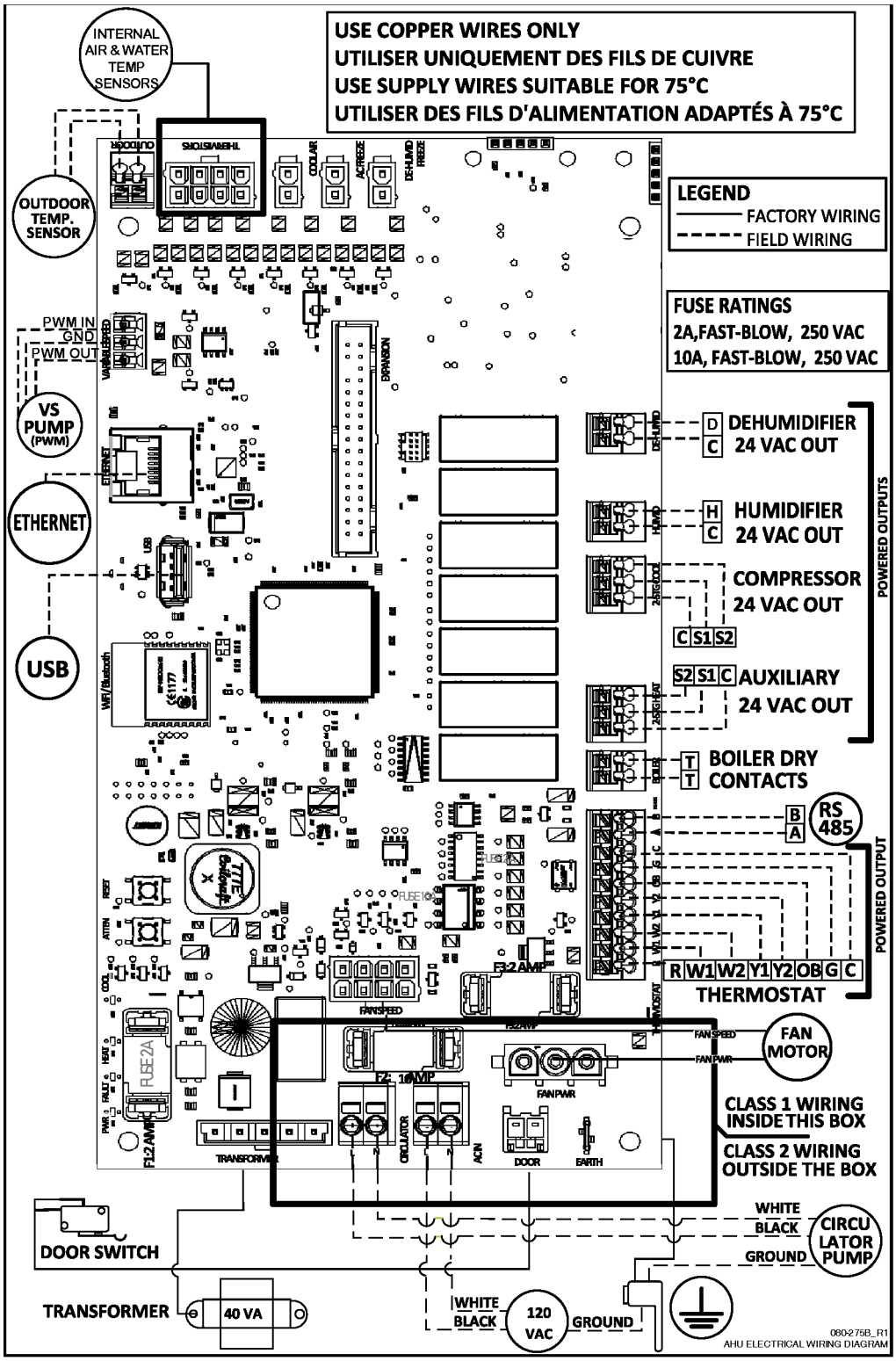

Figure 43 : *Air handler wiring diagram*

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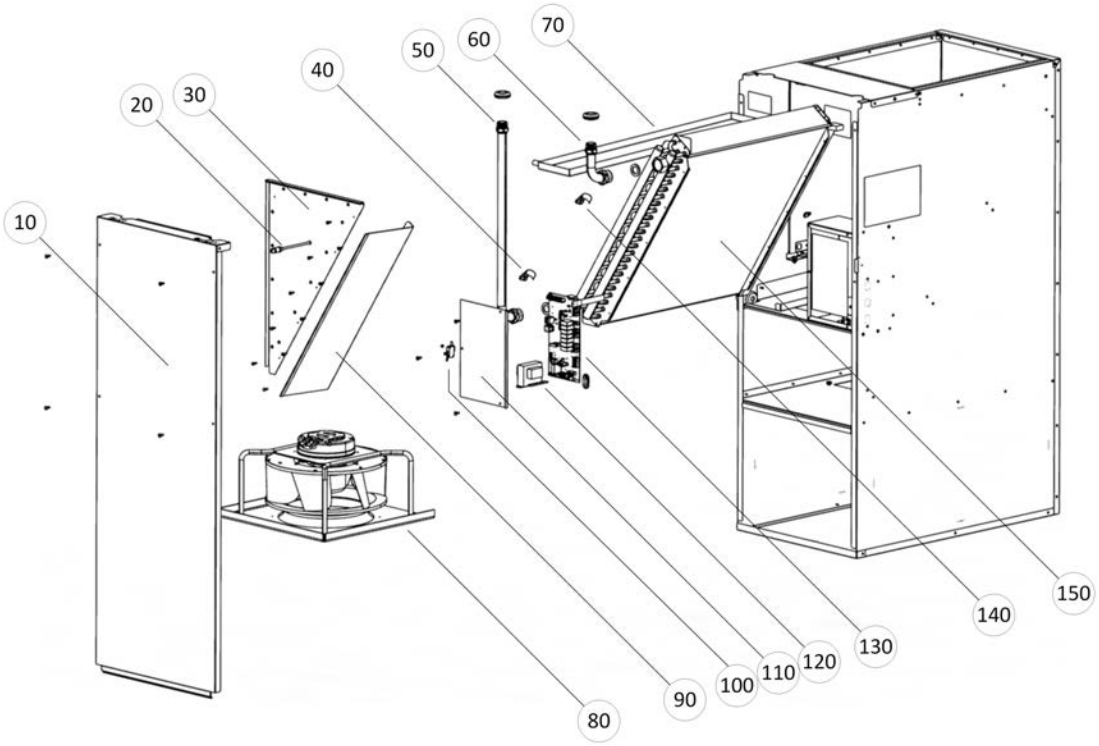
9.0 Air handling appliance - parts diagram



Item Number	P-Kit Number	Description
10	P-1029	Door assembly - AHU 1200 HC
	P-1030	Door assembly - AHU 2000 HC
20	P-1012	Supply air temperature sensor and grommet
30	P-1037	Coil baffle- AHU 1200 HC
	P-1038	Coil baffle- AHU 2000 HC
40	P-1011	Inlet water temperature sensor
50	P-1034	Inlet - in Pipe Kit AHU 1200 HC
	P-1035	Inlet - in Pipe Kit AHU 2000 HC
60	P-1034	Outlet - in Pipe Kit AHU 1200 HC
	P-1035	Outlet - in Pipe Kit AHU 2000 HC
70	P-1036	Condensate tray
80	P-1042	AHU Fan Replacement Kit Medium (for AHU 1200 HC)
	P-1043	AHU Fan Replacement Kit Large (for AHU 2000 HC)
90	P-1040	Condensate ramp kit - AHU 1200 HC
	P-1041	Condensate ramp kit - AHU 2000 HC
100	P-1008	Door switch, SPST-NO. 15A 125V

Item Number	P-Kit Number	Description
110	P-1039	Wiring box cover
120	P-1005	Transformer 40VA 120V
130	P-1001B	Controller
140	P-1011	Outlet water temperature sensor
150	P-1032	Coil - AHU 1200 HC
	P-1033	Coil - AHU 2000 HC
not shown	P-1031	Hardware kit: Coil hex bolts, hex nut, washer x 2 Fan plate hex bolts, washer x 2 Door screws x 4 fan harness grommet
not shown	P-1002	Ground lug replacement
not shown	P-1009	Sensor wiring harness
not shown	P-1013	Fuses (for control board)

NOTES

For Tech Support, call toll-free **1-844-432-8422**. For Technical Information online, scan:

CAN **IBC Technologies Inc.**
A 8015 North Fraser Way
Burnaby, BC Canada V5J 5M8
T 604-877-0277
F 604-877-0295

USA **IBC Technologies USA Inc**
A 121 Walter A Gaines Way
Lawnside, NJ 08045 USA
T 856-877-0544
F 856-735-5584

Toll Free: 1-844-HEAT-IBC / 1-844-432-8422
www.ibcboiler.com

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