AIO™ Vertical Stack

User Guide

innova

AHRI CERTIFIED
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Unitary Small HP
AHRI Standard 210/240

ETL LISTED
Intertek

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ENERGY STAR

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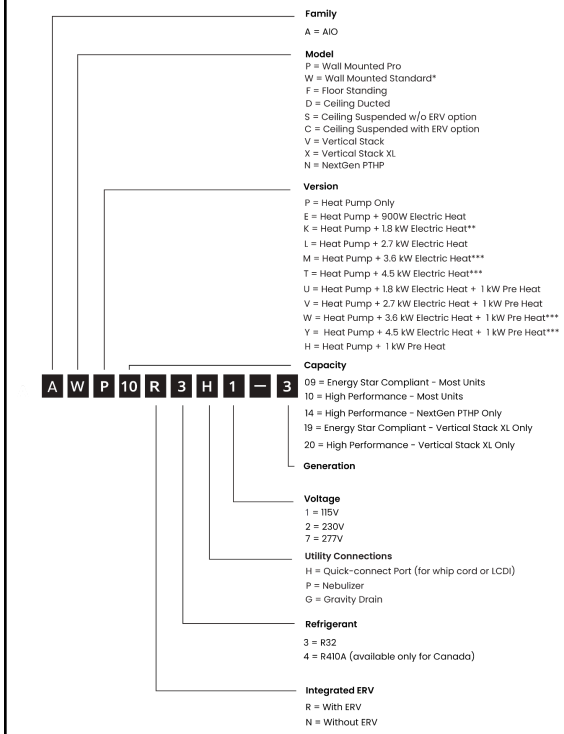
ETL Listed. Control Number: 5032306. Conforms to: UL 60335-2-40:2022 Ed.4 | CSA C22.2#60335-2-40:2022 Ed.4 | UL 60335-1:2016 Ed.6 | CSA C22.2#60335-1:2016 Ed.2

MODEL NUMBER NOMENCLATURE

The code identifies the family, model, version, size, voltage, accessories, refrigerant type, and ERV option. See the diagram below for details.

Figure 1. AIO™ Model Number Nomenclature



* 8" Vents : Just generation (e.g. = 3)
6" Vents : Generation + SP (e.g. = 3SP)
** Field convertible to 900W
*** AIO™ Vertical Stack XL **Only**

CONTENTS

1. SAFETY

This guide provides many important safety messages for your unit. Read and adhere to all safety messages. For your safety, follow all the information in this guide to minimize the risk of fire, explosion, electrical shock, or to prevent property damage, personal injury, or death.

- Read the guide thoroughly before operating the unit.

⚠WARNING

Failure to read the guide can result in damage to the unit, damage to property, personal injury, or death.

- Save this guide.
- Incorrect operation due to lack of knowledge or ignoring the instructions will cause harm or damage, or even death.

- Do not use the unit until it is inspected and certified by an INNOVA technician.
- Using your unit before certification will void the warranty.
- All safety messages will inform of the potential hazard, how to reduce the chance of injury, and what may happen if the instructions are not followed.
- Be sure to follow the instructions.

⚠WARNING

- In the event of a refrigerant leak, remove the unit from an occupied room and store it in a well-ventilated, unoccupied space.
- Do not pierce or burn the unit.
- Always keep the unit in an upright position to avoid any risk of leakage.
- Do not operate the unit where explosive gases are present or where humidity and temperature levels exceed the maximum allowed in the specifications. Doing this may cause an explosion and a fire. Ventilate the room well when using the unit together with a stove or similar appliances.

⚠CAUTION

- The LCDI device is not intended for use as a switch. Do not use the TEST and RESET buttons to turn the unit on and off.
- If the LCDI device fails to trip when tested or if the power supply cord is damaged, it must be replaced with a new LCDI power supply cord obtained from INNOVA. Do not repair the cord.

⚠WARNING

- Only qualified professionals should install and service this equipment. Improper installation or modifications by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the installation manual and labels attached to the equipment.
- It is the installer's responsibility to install the equipment correctly. Installation must be performed in conformance with all applicable local and national codes.

⚠WARNING

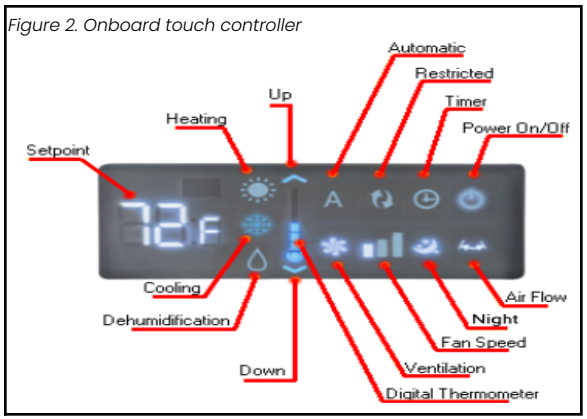
- Do not sit on, lean on, or place anything on top of the unit, especially liquids. This may trigger a short-circuit, damage the unit, and/or expose the user to the risk of electrocution.
- The unit is not intended for use by children. Adult supervision is required if children are present.
- Do not insert hands or other objects through the air inlets when the unit is in operation. Electrical and moving parts could cause shock and injury.
- Do not place the power supply cord near a heat source. This may cause a fire and/or electric shock.
- Do not touch the power supply cord or the unit with wet hands or use it in a damp environment, as it may cause a fire or electrical shock. To avoid damage or electrical shock, unplug the unit by holding the end of the power plug.
- Do not operate or stop the unit by inserting or pulling out the power plug. It may cause an electric shock and damage the unit.
- Do not alter the power supply cord or power plug. Do not use an extension cord.
- Do not place objects on the power supply cord. Protect the power supply cord from being pinched or damaged. There is the danger of fire or electric shock.

⚠WARNING

Failure to follow warnings can result in property damage, injury, and/or death.

2. BASIC OPERATIONS

Figure 2. Onboard touch controller



2.1 Operational modes

The onboard touch controller enables you to access five operational modes for precise thermal regulation of the conditioned space and for controlling thermal comfort.

Cooling mode ❄
Enables you to cool the space according to the set temperature, and dehumidifies and filters the air.

Heating mode ☀
Enables you to heat the space according to the set temperature, and filters the air.

Auto mode A
Enables you to set a target temperature. The unit automatically cools or heats the space as needed to maintain that temperature. This function also dehumidifies and filters the air.

Dehumidify mode 💧
Removes humidity (moisture) from the space and filters the air, providing a slight cooling effect.

This mode is useful during the spring and fall when the temperature is pleasant, but excess humidity may cause discomfort. This mode ignores both room temperature and fan speed settings. The fan operates only at low speed. It is normal for the unit to work intermittently.

Fan-only mode ✻
Circulates and filters the air without affecting the temperature.

2.2 Power On/Off ⏻

Power the unit on or off (standby) by pressing the Power button ⏻. The control system of the unit is equipped with memory, so settings are retained when the unit is turned off or in the event of power loss.

⚠CAUTION

Use the power button to activate or deactivate the unit for short time periods only. For long periods of inactivity, the unit must be shut off and unplugged from the grounded three-prong electrical power outlet or disconnected from the main power breaker.

2.3 Selecting fan speed

In Fan-only, Cooling, Heating, or Auto mode, press the **Fan Speed** (✻) button repeatedly to cycle through the available fan settings:

- **Low:** One bar appears.
- **Medium:** Two bars appear.
- **High:** Three bars remain steadily lit.
- **Boost:** Three bars flash.
- **Auto:** The bars repeatedly illuminate in sequence from one to three.

2.4 Timer

Use the timer to set a time when the unit commences or terminates operation.

1. While the unit is operating, press the ⏲ button.
2. Use the ⌃ ⌄ keys to set the number of hours from the current time that you want the unit to turn on or off.
3. Press the ⏲ button again to confirm your choice.

Once your selection is confirmed, the display temporarily shows the temperature, mode, and fan speed that will be working when the timer activates. The timer button remains lit.

- To reset the timer, set the digits to 00.

2.5 Night mode

The human body temperature naturally falls during sleep. While the unit is in Cooling or Heating mode, activating Night mode adjusts the room temperature to match the changes in body temperature. It also operates at a lower noise level and saves energy. This mode may be activated before you go to sleep.

Night mode is only available in Heating or Cooling mode. Night mode cannot be activated in Dehumidification, Auto, or Fan-only modes. The temperature automatically adjusts as follows:

- In Heating mode, the temperature setting decreases by 2°F (1.1°C) after one hour and by another 2°F (1.1°C) after two hours.
- In Cooling mode, the temperature setting increases by 2°F (1.1°C) after one hour and by another 2°F (1.1°C) after two hours.
- After the two adjustments, the temperature setting remains unchanged.
- After six hours, the unit automatically enters standby mode.

To activate Night mode:

1. When the unit is operating, press the Night mode button. The button remains lit.
2. Use the keys to set the number of hours for the unit to run.

To deactivate Night mode:

- Pressing the button again disables the Night function.

2.6 Air louvers

The unit is equipped with an air supply louver that can remain in a fixed position or oscillate. When in oscillating mode, the louver sweeps up and down to provide better airflow. When the oscillating mode is cancelled, the louver remains at the position it was in when the louver button was pressed.

1. To oscillate the louver, press the button. The button will remain lit.
2. To disable the oscillating function, press the button again when the louver is in the desired position.

2.7 Touch-Screen Display Key Lock mode

In Lock mode, the user cannot perform any actions from the touch-screen control panel. This is a useful safety feature to prevent children from playing with the controls. This mode also inhibits actions sent from the wireless remote control and is maintained even in the event of a power failure.

When Lock mode is active, the button constantly flashes, confirming that the display key is locked.

Toggle the lock

1. If the unit is not actively working (either in Auto, Heat, Cool, Dehumidify, or Fan-only mode), press to activate the display.
2. Press and hold for five seconds to change the lock state.
3. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default state.

2.8 Tuya app for control via your mobile device

Available for Android, iOS, and PC, the Tuya app provides seamless remote management of your unit via your mobile device over the internet. Users can toggle between all operating modes, adjust fan speeds, and easily fine-tune temperature settings. For automated comfort, the app features a comprehensive seven-day programmable timer. Additionally, you can group multiple units for synchronized control or share access with multiple users to simplify climate management.

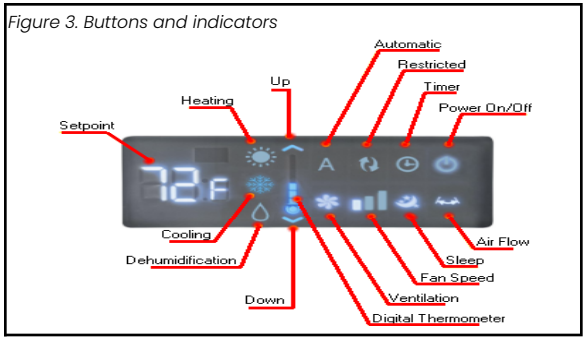
For more information, refer to:

AIO Wi-Fi Module (2.4 + 5 GHz) and Smart Life Ap...

3. SPECIAL PROGRAMMING

The AIO™ Vertical Stack is a sophisticated system that can be modified to suit specific scenarios. Special programming is achieved by pressing specific icons on the touch controller. Follow the instructions in this section to make changes to the system.

Figure 3. Buttons and indicators



3.1 Condensate drainage system

A thermo-actuator is mounted on the lower drain of the unit. In Cooling mode, you can set this to remain open, allowing the condensate to flow down the external drain instead. Otherwise, when closed, the pump channels the water onto the hot condenser coils to help cool them down. Follow the steps below to deactivate or reactivate the pump and drainage system. Explanation of Codes:

dS = Pump is disabled

En = Pump is enabled.

Deactivate or reactivate the pump and drainage system

1. If the unit is not actively working (either in Auto, Heating, Cooling, Dehumidify, or Fan-only mode), press to activate the display.
2. Press and hold until either dS or En appears on the display.
3. To cycle between dS and En, press .
4. When the desired mode, dS or En, appears on the display, do not press any more buttons. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default.

3.2 LED display brightness

The unit is equipped with a display brightness dimmer that enables the LED display to dim when the room is darkened. This is helpful for bedrooms, where the bright display can be disturbing when sleeping. If the display brightness sensor is disabled, the display retains maximum brightness at all times. Explanation of Codes:

dS = Display brightness sensor is disabled

En = Display brightness sensor is enabled.

Deactivate or reactivate the display brightness sensor

1. If the unit is not actively working (either in Auto, Heating, Cooling, Dehumidify, or Fan-only mode), press ⏻ to activate the display.
2. Press and hold 🌙 until either dS or En appears on the display.
3. To cycle between dS and En press 🌙.
4. When the desired mode, dS or En, appears on the display, do not press any more buttons. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default.

3.3 Heating-only and Cooling-only modes

You can lock the unit in Heating-only or Cooling-only mode. Explanation of Codes:

HC = Heating and Cooling mode

Co = Cooling-only mode

Ho = Heating-only mode

Activate Heating-only or Cooling-only mode

1. If the unit is not actively working (either in Auto, Heating, Cooling, Dehumidify, or Fan-only mode), press ⏻ to activate the display.
2. Press and hold A until either Ho, Co, or HC appears on the display.
3. To cycle between Ho, Co, and HC, press A.
4. When the desired mode, HC, Ho, or Co, appears on the display, do not press any more buttons. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default.

Reactivate Heating and Cooling mode

1. If the unit is not actively working (either in Auto, Heating, Cooling, Dehumidify, or Fan-only mode), press ⏻ to activate the display.
2. Press and hold A until either Ho, Co, or HC appears on the display.
3. Press A repeatedly till HC appears on the display. Do not press any more buttons. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default.

3.4 Resistance heating

The resistance heating (for models that have a resistance heat strip) can be activated and deactivated. Explanation of Codes:

Fh = Heat pump only

rE = Heat pump and resistance heat strip

Activate or deactivate resistance heating

1. If the unit is not actively working (either in Auto, Heating, Cooling, Dehumidify, or Fan-only mode), press ⏻ to activate the display.
2. Press and hold ☀ until either Fh or rE appears on the display.
3. To cycle between Fh and rE press ☀.
4. When the desired mode, Fh, Fo, or rE, appears on the display, do not press any more buttons. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default.

3.5 Fahrenheit or Celsius display

You can change between Fahrenheit and Celsius units on the display. Explanation of Codes:

°C = Celsius

°F = Fahrenheit

1. If the unit is not actively working (either in Auto, Heating, Cooling, Dehumidify, or Fan-only mode), press ⏻ to activate the display.
2. Press and hold ⮟ the temperature control until the display changes the currently displayed units to the alternative units.
3. Do not press any more buttons. Wait ten seconds for the system to record the change. When ready, the display automatically returns to its default.

4. FUNCTIONALITY

Understanding how the unit functions will help determine if the unit is functioning correctly. Many complex algorithms ensure that the unit operates properly.

4.1 Auto mode

Depending on the setpoint selected, the unit automatically selects the Heating or Cooling mode and the fan speed based on the room temperature as follows.

First, the supply air fan runs for 20 seconds at low speed to measure the room temperature and then decide the operating mode.

If the unit is actively in Heating or Cooling mode, it waits for 20 minutes after the compressor has stopped before moving to the new mode.

Current room temp	Mode selected
< 3.6°F (2°C) of Setpoint	Heat
> 3.6°F (2°C) of Setpoint	Cool

The initial fan speed is determined based on the following table, and is adjusted accordingly during operations.

Current room temp	Mode selected
≤ 1.8°F (1°C) of Setpoint	Min
> 1.8°F (1°C) to ≤ 5.4°F (3°C) of Setpoint	Medium
> 5.4°F (3°C) of Setpoint	Max

- To activate Auto mode, press and hold A for five seconds.
- To deactivate Auto mode, press and hold ❄ for Cooling or ☀ for Heating.

4.2 Power failure restart

Timer
If the timer function is active when a power failure occurs, the timer resumes from its original setting when power is restored; the blackout time is not taken into consideration.

Restarting delay
If the compressor was active before the blackout, it resumes operation 180 seconds after power is restored.

4.3 Cooling-Heating mode changeover

The AIO™ Vertical Stack is a heat pump that can cool and heat. Heating is achieved by reversing the cycle. In simple terms, in Cooling mode, the heat pump produces cool air inside and exhausts hot air outside. In Heating mode, the cycle is reversed; the inside receives hot air, and cold air is exhausted outside. When switching from Cooling to Heating mode, or vice versa, there is a delay until the heating or cooling commences.

Compressor delay
When switching the unit between modes or turning it on and off, the compressor waits 180 seconds until activation.

4-way valve
If the Heating mode is switched to Cooling, Fan-only, or Dehumidification, the 4-way valve is deactivated (set to cooling cycle) 120 seconds after the compressor is switched off.

If the Heating mode is switched back on, the 4-way valve waits 120 seconds after the compressor has stopped before powering on (reversing cycle) to enable heating.

4.4 Cooling mode

The unit cools and dehumidifies the room. You can select a setpoint between 61°F (16°C) and 83°F (28°C).

1. If the unit is off, press the Power ⏻ button once to turn it on. (Pressing the button again turns the unit off.)
2. To activate cooling mode, press and hold ❄ for five seconds. The ❄ button remains lit.
3. Use the ^ up and v down arrow buttons to set the desired temperature between 61°F (16°C) and 87°F (31°C).

Set the fan speed by pressing the ✻ button until the desired speed is displayed. For instructions on fan speed, refer to Selecting fan speed.

Cooling mode operation
When in cooling mode, the compressor remains active and varies its speed to match the required cooling load. The air supply louver remains open the entire time.

Cooling mode termination
When the unit is turned off, the following occurs:

1. The air supply louver closes.
2. The condenser fan remains on until the condenser chamber cools down. This can range from 60 to 500 seconds.

4.5 Heating mode

At startup, it can take up to three minutes for the unit to start supplying warm air.

The unit heats the room. You can select a setpoint between 61°F (16.1°C) and 88°F (31.1°C). The fan operates only when the unit is actively heating.

1. If the unit is off, press the Power ⏻ button once to turn it on. (Pressing the button again turns the unit off.)
2. Press and hold ☀ for five seconds. The ☀ button remains lit.
3. Use the ^ up and v down arrows to set the desired temperature between 61°F (16.1°C) and 87°F (31.1°C).

Set the fan speed by repeatedly pressing the ✻ button until the desired speed is displayed. For instructions on fan speed, refer to Selecting fan speed.

Heating Mode Initial Start-Up
In Heating mode, the unit starts up as follows to prevent cold air from entering the room.

1. The air supply louver remains closed.
2. The compressor runs for two to eight minutes.
3. When the internal temperature of the heat exchanger exceeds 86°F (30°C), the air supply louver opens.
4. The supply air fan is activated according to the coil temperature, regardless of the selected fan speed. Once the temperature is stabilized, control of the fan velocity reverts to the user-selected setpoint.

Heating mode operation
In Heating mode, the air supply louver remains closed when the unit is not actively supplying hot air to the room and opens when hot air is supplied.

1. When the room temperature exceeds the set point by 1.8°F (1°C), the compressor stops (if it has been actively running for at least three minutes).
2. The condenser exhaust fan remains active for an additional 30 seconds, and the air supply fan continues to run until either the temperature detected by the evaporation probe falls below 86°F (30°C) or 30 seconds have elapsed, whichever occurs first.
3. To balance the pressure when the compressor is not working, 120 seconds after the compressor has stopped, the 4-way valve is deactivated (set to cooling cycle). Five seconds before the compressor restarts, the 4-way valve is powered (reversing cycle) to enable heating.
4. The supply air fan performs a "sniffing" function for 30 seconds every 90 seconds with the air supply louver remaining closed.

Heating mode termination
After the unit has been turned off, it performs the following steps:

1. The compressor turns off.
2. The supply air fan runs at minimum speed to dispose of the residual heat until either the temperature detected by the OPT probe falls below 77°F (25°C) or 30 seconds have elapsed, whichever occurs first.
3. The air supply louver closes.
4. The external condenser fan remains on for up to 120 seconds.

4.6 Fan-only mode

The unit does not cool, heat, or dehumidify in this mode.

The fan circulates the air in the room. The fan speed can be adjusted to Low, Medium, or High speed.

1. If the unit is off, press the ⏻ button once to turn it on. (Pressing the button again turns the unit off.)
2. To activate fan-only mode, press and hold ✻ for five seconds. The ✻ button remains lit.
3. Set the fan speed by pressing the ✻ button until the desired speed is displayed. For instructions on fan speed, refer to Selecting fan speed.

4.7 Dehumidify mode

In dehumidification mode, the unit removes excess moisture from the air.

- To activate dehumidification mode, press and hold 💧 for five seconds.
- To deactivate dehumidification mode, press and hold 💧 again for five seconds.

4.8 Reverse cycle defrost

In Heating mode, the unit periodically defrosts the outdoor heat exchanger coil based on the ambient temperature probe (on the outdoor heat exchanger coil) and the condensation probe (on the outdoor heat exchanger coil).

Scenario A: Start reverse cycle defrost:
The compressor is active for 10 minutes, and the total operating time is greater than 25 minutes, and any of the following three conditions apply:

1. The outside temperature is ≥ 41°F (5°C) and ≤ 59°F (15°C) and the condensation temperature ≤ 21°F (-6.1°C) for 5 minutes.
2. The outside temperature is ≥ 21°F (-6.1°C) and ≤ 41°F (5°C), and the coil temperature remains below the calculated TeS (Target Evaporation Setpoint) for a continuous five-minute period.
3. The compressor has worked continuously for 3 hours without defrosting, and the condensation temperature remains < 36°F (2.2°C) for 90 seconds.

Scenario B: Start reverse cycle defrost:
The compressor is active for 10 minutes, and the total operating time is greater than 60 minutes, and any of the following two conditions apply:

1. If the outdoor temperature is ≤ 21°F (-6.1°C) and the condensation temperature is ≤ 59°F (15°C) for 5 minutes.
2. If the compressor has worked continuously for 3 hours without defrosting, and the condensation temperature remains < 36°F (2.2°C) for 90 seconds.

Steps to initiate reverse cycle defrost:

1. The compressor stops.
2. Both the supply air fan and the condenser exhaust fan stop.
3. The supply air louver closes.
4. The four-way valve is reversed.
5. The compressor restarts.
6. The compressor runs with a fixed speed and fixed EEV position, and the external coil temperature is monitored to determine when to exit the defrost cycle.

Scenarios to end reverse cycle defrost:
The minimum duration of the reverse cycle defrosting is 120 seconds, after which the conditions for ending the defrost cycle are that any of the following three conditions apply:

1. The condensation temperature remains > 59°F (15°C) for more than 60 seconds
2. The condensation temperature remains > 68°F (20°C) for more than 10 seconds
3. The cycle reaches the maximum allowed time of 8 minutes

Steps to end reverse cycle defrost:

1. The compressor stops.
2. The four-way reversing valve shifts to the heating cycle configuration, redirecting hot discharge gas to the indoor heat exchanger.
3. The compressor starts.
4. The condenser exhaust fan starts.
5. The internal coil temperature is checked. When the temperature is ok, the supply air fan starts.
6. The supply air louver is opened.

4.9 Resistance heating

In models with resistance heat strips, the heat pump works in sync (or is replaced) by a resistance heat strip, which automatically activates when the heat pump's output is insufficient, or upon startup, to bring the room to the desired temperature as quickly as possible.

After the resistance heat strip switches off, the supply air fan remains active for 90 seconds to dissipate the residual heat.

Resistance heat activation
The resistance heat strip is activated only when all of the following conditions are met:

- The compressor has been running for 30 seconds
- Room temperature is ≤ 75°F (23.9°C)
- The indoor heat exchanger is ≤ 111°F (43.9°C)
- The room is < 3.6°F (2°C) below the setpoint

Resistance heat deactivation
The resistance heat strip will deactivate when any of the conditions apply

1. The room reaches either the setpoint or ≥ 77°F (25°C)
2. The indoor heat exchanger reaches ≥ 117°F (47.2°C)
3. The EC motor of the supply air fan stops

4.10 Condensate drainage system

The condensate drainage system enables the unit to run more efficiently in Cooling mode by spraying the condensate on the heat exchanger, lowering the temperature of the heat exchanger. The vapor is then exhausted through the external vent, alleviating the need for a drain.

This system consists of four components: The drain pan valve, which keeps the condensate in the drain pan so it can be distributed. The pump, which brings the condensate up to the misters. The mister, which drips the condensate onto the heat exchanger. The safety float, which ensures the drain pan does not overflow.

This system is only active in cooling and dehumidifying modes.

The condensate drainage system can be disabled, and the condensate will drain to the connected external drain pipe. To disable the condensate drainage system, refer to the relevant section in Condensate Drainage System.

Pump operation
The pump operates continuously at varying speeds based on the float level. If the pump operates continuously at maximum speed for more than 300 seconds, the compressor speed is reduced to the minimum frequency, and the condenser exhaust fan speed is increased to remove excess condensation.

Safety float control
When the condensate drainage system is active, the drain pan safety float ensures that the drain pan will not overflow. If the pan is close to the top, the compressor stops, and the condenser exhaust fan works with the condensate drain pump to evaporate the condensate until the condensate level falls. The OF error code appears on the display.

5. MAINTENANCE

This unit is engineered to provide maximum performance with minimal maintenance. By following the simple care instructions in this manual and keeping the unit clean, you will ensure many years of reliable, trouble-free service.

⚠ WARNING

- Disconnect all power to the unit before servicing to avoid electric shock or damage to the unit. Unplug the power supply cord from the wall outlet and disconnect the circuit breaker or fuse.
- When the unit is in the OFF position, there is still voltage to the electrical controls. Remove the power supply cord from the wall power outlet or disconnect the circuit breaker or fuses before servicing to avoid electric shock or damage.

Due to the importance of these maintenance tasks, INNOVA recommends establishing a maintenance service contract with a qualified HVAC professional. Regular professional maintenance will help ensure the unit operates efficiently, extend its lifespan, and prevent faults.

Always follow these steps before performing any maintenance or cleaning operations:

1. Turn the unit off by tapping ⏻.
2. Unplug the unit from the three-prong electrical power outlet.
3. Wait one hour for the unit to cool down.

⚠WARNING

- Clean the system components as recommended by the manufacturer.
- Perform defrosting as recommended by the manufacturer. Do not try to accelerate the process.
- Do not piece or burn. Be aware that refrigerants may be odorless.

Energy-saving suggestions

This unit is engineered for maximum efficiency, powered by a state-of-the-art inverter compressor that adapts to your cooling needs. To maintain peak performance and minimize energy consumption, observe the following recommendations:

- Read and follow the installation instructions.
- Always keep the filters clean (see the Maintenance and Cleaning chapter).
- Have the unit professionally inspected and cleaned by an authorized technician annually, or every other year, depending on use.
- Keep the doors and windows of the rooms closed while the unit is operating (unless operating with a stove top).
- Proper insulation helps the unit maintain the desired inside temperature.
- Do not let direct sunlight enter the room (use curtains or lower the blinds) while the unit is operating, creating shade wherever possible.
- Consider installing window tinting; it can greatly reduce the amount of heat entering a room, thereby reducing the cooling load.
- Do not block the supply and return airflow grilles of the unit. This results in non-optimal performance and may also cause damage, voiding the warranty.
- Keep window coverings away from the unit to ensure free airflow.

5.1 Cleaning the filters

To maintain optimal performance, clean the filters at least once a month. Clogged and dusty filters reduce the cooling and heating capability, restrict airflow, and can lead to extensive damage. In extreme cases, clogged filters may create a fire hazard and will void the warranty. Keeping the filters clean saves energy and reduces the risk of component failure.

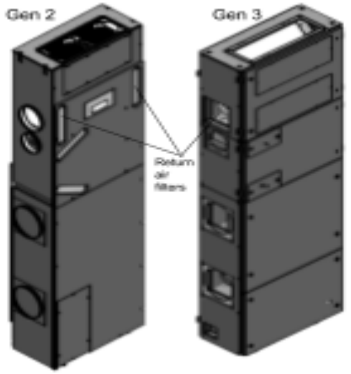
⚠WARNING

- Always disconnect power before accessing filters.
- Use appropriate PPE when handling dirty filters.
- Ensure the unit is stable and secure before opening panels.
- Do not operate the unit with filters removed.
- Ensure the floor area is dry to prevent slipping during maintenance.
- Use gloves when handling used filters.

Washing the return air filters

1. Turn off the unit, unplug the power cord, or turn off the breaker and wait one hour for the unit to cool down.
2. Slide out the return air filters (MERV 3).
3. Open the ERV filter panels and extract the ERV filters (MERV 13).

Figure 4. Accessing the return air filters



4. Remove dust from the filters using a vacuum cleaner or by washing them in running water. You can use a mild soap if necessary, but detergents or solvents will cause damage.
5. Leave the filters to dry in the shade. Exposure to the sun or washing with water hotter than 104ºF (40ºC) can cause the filters to shrink.
6. Replace the cleaned filters, taking care to position them correctly.

Replacing the ERV air filters

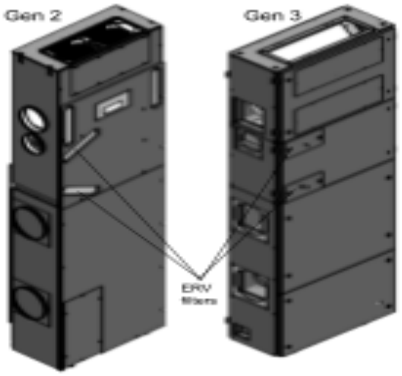
The ERV fresh air and stale air filters are not washable and must be replaced when dirty. Their life span depends on usage and environmental factors. INNOVA recommends replacing them every three months (or sooner if they are visibly clogged).

⚠CAUTION

When disposing of the old filters, ensure they are disposed of in accordance with local regulations.

1. Turn off the unit, unplug the power cord, or turn off the breaker and wait one hour for the unit to cool down.
2. Pull and slide the used filters out of the unit.

Figure 5. Accessing the ERV filters



3. Remove dust from the filters using a vacuum cleaner or a low-pressure compressor.

⚠CAUTION

Do not wash ERV (MERV 13) filters.

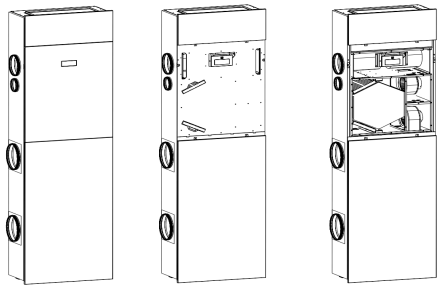
4. Push and slide new, clean MERV 13 filters back into the unit.

5.2 Cleaning recovery core

Check the state of the ERV recovery core at each cleaning or filter change and proceed with cleaning if deemed appropriate. This operation must be performed only by qualified personnel or an installer.

1. Turn off the unit, unplug the power cord, or turn off the breaker and wait one hour for the unit to cool down.
2. Open the central front cover.
3. Disassemble the central panel.

Figure 6. Accessing the recovery core



4. Remove the ERV recovery core.
5. Clean the core very gently using a vacuum cleaner or a low-pressure compressor to prevent dirt from entering the heat exchanger. Clean in the opposite direction to that of the airflow.
6. Replace the ERV recovery core.
7. Close the cover by locking it in place and locking and inserting its screws.

Do not touch the fins of the core. Handle the ERV core by its structural frame or closed perimeter panels.

5.3 Cleaning the cabinet

To maintain optimal performance, use a damp cloth to clean the cabinet as necessary. Dusty grilles and louvers can restrict airflow and cause damage.

The use of detergents, solvents, or aggressive chemical agents is prohibited. These substances can compromise the integrity of the coil's anti-corrosive coating and result in premature system failure.

1. Turn off the unit, unplug the power cord, or turn off the breaker, and wait one hour for the unit to cool down.
2. Gently wipe down the cabinet using a slightly damp cloth
3. Gently wipe down the return air grille using a slightly damp cloth
4. Gently wipe down the supply air louver using a slightly damp cloth.

⚠WARNING

- When the unit is in the OFF position, there is still voltage to the electrical controls. Remove the power supply cord from the wall power outlet or disconnect the circuit breaker or fuses before servicing to avoid electric shock or damage.
- Do not insert hands or other objects through the air inlet when the unit is in operation.

5.4 Cleaning the exterior louvers

Inspect the exterior grilles, louvers, and vent pipes periodically (annually or semi-annually) and clean as required. Under extreme conditions, more frequent cleaning may be necessary.

Do not use wax, solvents, or hydrocarbon-based cleaners such as acetone to clean the louvers. Use a slightly damp (not wet) cloth when cleaning the louvers.

1. Turn off the unit, unplug the power cord, or turn off the breaker and wait one hour for the unit to cool down.
2. Clean the louvers with a damp cloth.
3. Check the vent pipes and clean if needed.

⚠WARNING

- When the unit is in the OFF position, there is still voltage to the electrical controls. Remove the power supply cord from the wall power outlet or disconnect the circuit breaker or fuses before servicing to avoid electric shock or damage.
- Do not insert hands or other objects through the air inlet when the unit is in operation.

5.5 Cleaning the coils

The unit's indoor and outdoor coils and base pan should be inspected periodically (annually or semiannually, depending on the installation environment) and cleaned as necessary. Under extreme conditions, more frequent and/or professional cleaning may be required.

Do not attempt to clean dirty coils yourself unless you have experience, or you may damage the coils.

In extreme cases, dirty coils may create a fire hazard and will void the warranty.

1. Turn off the unit, unplug the power cord, or turn off the breaker and wait one hour for the unit to cool down.
2. Remove the covers from the unit to inspect the coils and base pan.

⚠CAUTION

Two people are required when removing the Vertical Stack covers.

3. Clean off all debris (lint, dirt, leaves, paper, etc.).
4. Clean the coils and base pan with a soft brush and compressed air or vacuum. If using a pressure washer, take care not to bend the aluminum fins and to keep all electrical components dry. Do not use a caustic coil

cleaning agent on coils or the base pan. Use a biodegradable cleaning agent and degreaser. The use of harsh cleaning materials may lead to deterioration of the aluminum fins or the coil end plates.

5. Use a sweeping up-and-down motion in the direction of the vertical aluminum fin. When pressure-cleaning coils, it is extremely important to ensure that none of the unit's electrical and/or electronic parts get wet. Be sure to cover all electrical components to protect them from water or spray.
6. Replace the front and rear covers after the coils and pan have been cleaned.

⚠CAUTION

Do not attempt to clean dirty coils unless you have experience, or you may damage the coils.

⚠WARNING

- Do not use water to clean inside the unit. Exposure to water can damage the insulation, leading to an electric shock.
- It is extremely important to ensure that none of the electrical and/or electronic parts of the unit get wet. Be sure to cover all electrical components to protect them from water or spray. It may cause an electric shock and damage the unit.
- When the unit is in the OFF position, there is still voltage to the electrical controls. Remove the power supply cord from the wall power outlet or disconnect the circuit breaker or fuses before servicing to avoid electric shock or damage.

6. TROUBLESHOOTING

The following troubleshooting information is provided to assist qualified personnel in efficiently diagnosing system faults. Following these verified diagnostic sequences minimizes downtime and prevents the unnecessary replacement of functional components.

Do not use the unit until it is inspected and certified by an INNOVA technician. Using your unit before certification will void the warranty.

6.1 Normal occurrences

The following conditions are normal and do not indicate a malfunction.

Table 1. Normal occurrences

Issue	Normal Functionality
There is a whirring noise.	The indoor fan runs continuously when the unit is operating in the Cooling mode.
A 3-minute delay occurs at startup.	You may notice a few minutes' delay in starting if you try to restart the unit too soon after turning it off, or if you adjust the thermostat right after the compressor has shut off. This is due to a built-in restart protector for the compressor that causes a three-minute delay.
The unit is operating silently.	During the defrost cycle, both the indoor and outdoor fans stop, and the compressor operates in Cooling mode to remove frost from the outdoor coil. After defrosting, the unit restarts with electric heat to quickly warm the room to the desired comfort level.
The unit continues to work after you turn it off.	To protect the compressor and prevent short cycling, the unit is designed to continue running for a minimum of three minutes after the compressor starts, regardless of thermostat setting.

6.2 Common problems

In the event of a malfunction, refer to the following table. If the fault persists after performing the suggested checks, call the Customer Support Call Center for assistance.

Table 2: Common problems

Problem	Possible Causes	Solution(S)
The unit does not turn on.	No power	Check the power to the grounded three-prong electrical outlet. You can do this by plugging in a lamp to the same outlet. Repair the power outlet or use a different one.
	The fuse is blown, or the circuit breaker is tripped.	Verify the circuit breaker has not tripped. Replace the fuse if it is blown. Restore power before attempting a restart.
	The unit is unplugged.	Verify that the power cord is fully plugged into a grounded outlet. Restore power before attempting operation.
	The unit is waiting for the compressor overload protector to reset	To protect the compressor and prevent short cycling, the unit is designed to run for a minimum of three minutes after the compressor starts, irrespective of the thermostat setting.
	The current interrupter device is tripped.	Press the RESET button located on the power supply cord plug or the box near the power plug. If the RESET button does not stay engaged, discontinue use of the unit and contact a qualified service technician.
The unit does not cool or heat adequately.	Indoor airflow is restricted.	Make sure there are no curtains, blinds, or furniture blocking the front of the unit.
	The room may be hot or cold.	On initial activation, allow time for the environment to reach the desired temperature.

Problem	Possible Causes	Solution(S)
	The heating and cooling load in the room changed.	Try to reduce the heating and cooling load of the room: Cover large windows exposed to sunlight using curtains or blinds. Keep doors and windows closed. Do not turn on halogen lamps, ovens, steam irons, and hot plates, etc.
	The temperature control may not be set properly.	Turn the control to a lower or higher setting. NOTE: The temperature limiter may be limiting the temperature range.
	The indoor or outdoor heat exchanger is clogged.	Have a professional clean the indoor/outdoor heat exchangers.
	The fan is dirty.	Clean the filter at least every 30 days.
	The air filter is dirty.	Clean the filter at least every 30 days.
A burning odor occurs at the start of the heating operation.	There is dust on the surface of the heating element.	This can cause a burning odor at the beginning of the heating operation. The odor should quickly fade.

6.3 Error codes

The following table shows system error codes. In some cases, the system still functions when the code is displayed. In these cases, you must still contact a technician to correct the fault.

Table 3. Error codes

Error	Cause	Possible Solution	Will the unit work
E1	The room temperature RT sensor, which monitors the antifreeze function of the coil, is not working.	Disconnect the power, wait five minutes, and reconnect it.	Yes
E2	The IPT sensor is not reporting the state of refrigerant flow in the internal coil.	Disconnect the power, wait five minutes, and reconnect it.	Yes
E3	The outside temperature OT sensor is not reporting the temperature.	Disconnect the power, wait five minutes, and reconnect it.	Yes
E4	There is a fault in the external coil OPT sensor. Automatic defrosting does not work.	Disconnect the power, wait five minutes, and reconnect it.	Yes
E5	The internal fan motor is not working.	None, call for an authorized technician.	No
E6	The external fan motor is not working.	Disconnect the power, wait five minutes, and reconnect it.	No
E7	There is no communication between the display and the unit.	Disconnect the power, wait five minutes, and reconnect it.	No
E8	The temperature of the compressor discharge gas is not being monitored.	None, call for an authorized technician.	No
CP	The CP contact is open; the unit only works if the contact is closed.	Check that the sensors are connected.	No
OF	In Cooling or Dehumidification mode, if condensate reaches the maximum level, the float switch activates the water distribution system and fan to disperse excess water.	Disconnect the power, wait five minutes, and reconnect it.	No
	If the condensate drain line is blocked in Heating mode, the maximum level float switch will activate and may shut down the unit to prevent overflow.	Disconnect the power and check that the condensation pipe is not bent or obstructed, which would prevent the water from flowing out.	No

7. SERVICE AND ASSISTANCE

We want to ensure that you have the best experience possible with the unit. To accomplish this, we send an INNOVA technician to inspect each unit that is installed and certify the installation before it is certified for use.

After performing the inspection and certifying that the unit is installed correctly, the INNOVA technician will sign and validate your warranty. Do not use the unit until it is certified by an INNOVA technician, or the warranty will be voided. If your installer or dealer has not informed you of when an INNOVA technician is scheduled to inspect and certify your new unit(s), please contact us immediately so that we can arrange for an inspection and certification.

Before contacting the Customer Support Center for service-related issues, check the troubleshooting charts. This may help you find the answer to your problem, avoid unnecessary service calls, and save you the cost of a service call if the problem is not due to a defect in the unit. If you require further assistance, please call the Customer Support Center.

When calling, provide the unit's model and serial number, along with the date of certification. By providing us with this information, we will be able to assist you more quickly.

If you have checked the troubleshooting charts and still need assistance, besides dispatching a technician for service, here is a list of services we can also provide for you at our Customer Support Center. Call toll-free 1-800-381-4200.

- Specifications and features of the unit.
- Use and care information.
- Recommended maintenance procedures.
- Installation information.
- Referrals to authorized dealers.

Do not use the unit until it is inspected and certified by an INNOVA technician. Using your unit before certification will void the warranty.

7.1 Critical annual maintenance

Proper system maintenance requires cleaning the evaporator air filter and the condenser coil, located in the lower compartment near the compressor and the drain system.

Failure to complete this annual cleaning will void the warranty.

Follow these steps to ensure thorough cleaning and optimal performance:

1. **Remove Front Panel:** Detach the main front panel cover to access the internal components.
2. **Open Bottom Access Panel:** Use a drill or screwdriver to remove the screws and open the bottom metal access panel.
3. **Detach Drain Hose:** Disconnect the clear condensate drain hose from the right side of the drain pan.
4. **Vacuum the Drain Line:** Attach a vacuum cleaner to the clear hose to suction out any debris or blockages.
5. **Flush Drain Pan:** Pour fresh water into the lower section of the evaporator pan. Use the vacuum cleaner to suction out the water until it runs clear. Repeat the process if necessary until clean water is observed.
6. **Reconnect Drain Hose:** Reattach the clear drain hose to the evaporator pan. Ensure the connection is secure.
7. **Refill the Trap:** Pour one cup of water into the evaporator pan to refill the siphon (trap), located in the compressor compartment. This ensures proper function of the trap by maintaining a water seal.
8. **Check Seals During Reassembly:** While reassembling, inspect the gasket for integrity and ensure the cover is sealed properly, without any air leaks. If gaps are detected, apply additional gasket material or silicone to achieve an airtight seal.
9. **Reattach Metal Cover:** Secure the bottom metal access cover in place to prevent air leakage.
10. **Reattach Front Panel:** Finally, reattach the front panel cover, ensuring it is properly secured.

By following these steps, you ensure the condenser coil and associated components are maintained, preventing potential airflow issues and enhancing overall system efficiency.

7.2 Certification

Post-installation certification checklist

Appropriate Use:

- ☐ The AIO™ Vertical Stack unit's cooling/heating capacity is sufficient to cool/heat the room it is located in
- ☐ There is no furniture, plants, or window coverings blocking the interior vents.

Mounting:

- ☐ Wall bracket is securely hung—at least two screws are in cement or wood, and the other four screws are TOGGLER® brand, SNAPTOGGLE® Heavy-Duty Toggle Bolts, model number BB or BBS in ¼" (6.4 mm).
- ☐ The unit is mounted at 100% level on the vertical and horizontal axes.
- ☐ The unit is flush to the wall with no gaps between the wall and the back of the unit.
- ☐ The anti-lift bracket is fastened to wood or with TOGGLER® brand, SNAPTOGGLE® Heavy-Duty Toggle Bolts, model number BB or BBS in ¼" (6.4 mm).
- ☐ The tip sensor is clear.

External Vents

- ☐ The wall sleeve is sealed inside the wall with no gaps.
- ☐ The wall sleeve protrudes from the wall 1/8" (3.2 mm) into the EPDM material on the rear of the unit with a tight connection.
- ☐ Approved exterior grilles are installed.
- ☐ Exterior grilles are installed correctly.
- ☐ Exterior grilles are properly sealed.
- ☐ External vent holes are 100% aligned internally with the AIO™ Vertical Stack's vent holes.
- ☐ Walls or plants do not block the exterior vents.

Electrical

- ☐ The power receptacle is in good working condition, and the LCDI plug fits snugly if using an LCDI cord.
- ☐ The circuit breaker meets the required specifications.

Drainage (if using for heating)

- ☐ The condensate drain is connected and working.
- ☐ The external condensate drain is pitched in the correct direction.
- ☐ The external condensate drain's exterior wall puncture is properly sealed.

- The warranty is only valid if the certification is complete and signed by an INNOVA technician.
- The AIO™ below has been inspected and certified to comply with INNOVA's installation requirements.

AIO™ Info	
Serial Number	
Installation Address	
Dealer	
Invoice Date	

Certification Info	
Technician Name	
Technician ID Number	
Date	
Signature	

8. WARRANTY

8.1 Basic Coverage

- **Parts:** 5 years from delivery.
- **Compressor:** 10 years from delivery.
- **Labor:** 2 years from certification (only if at least 10 units are installed, the site is certified by INNOVA or self-certified, and spare stock equal to 3% of total units is maintained)
- **Controllers:** Covered under a 2-year warranty.

8.2 Optional Extended Coverage

- **Additional 2-Year Parts & Labor Warranty:** Extends the basic coverage to four years for labor and seven years for parts.
- **Extended 10-Year Parts Warranty:** Extends parts coverage to a total of 10 years.
- **Extended 5-Year Full Warranty:** Extends full parts and labor coverage to a total of five years.
- **Extended 10-Year Full Warranty:** Provides a 10-Year full warranty on parts, labor, and the compressor.
- **Extended 15-Year Full Warranty:** Provides a 15-Year full warranty on parts, labor, and the compressor.

8.3 Validation Requirements

- Installation must be certified by an INNOVA technician or self-certified within 30 days of commissioning.
- Installers must complete INNOVA training.
- The system must comply with local codes, use approved louvers, and be properly maintained (e.g., clean filters monthly and coils every 18 months).

For warranty service or claims, contact INNOVA Support at vip@innova.co or (212) 204-2700.

For detailed terms and conditions, click the link below:

AIO Warranty Terms and Conditions - 2026 - INN...

With over 20 years of experience in the climate comfort sector, we have a clear goal: growth through innovation. Our team is laser-focused on the conception, development, and production of innovative heating, ventilation, and air conditioning solutions. This mission has developed through bringing together technical skills, creativity, technology, design, Italian passion, and a global vision to achieve the best energy efficiency and performance.

innova.co | **USA:** 216-710-1000 **Canada:** 416-739-1000

MADE IN ITALY

Revised August 12, 2026

AIO™ Vertical Stack **User Guide**