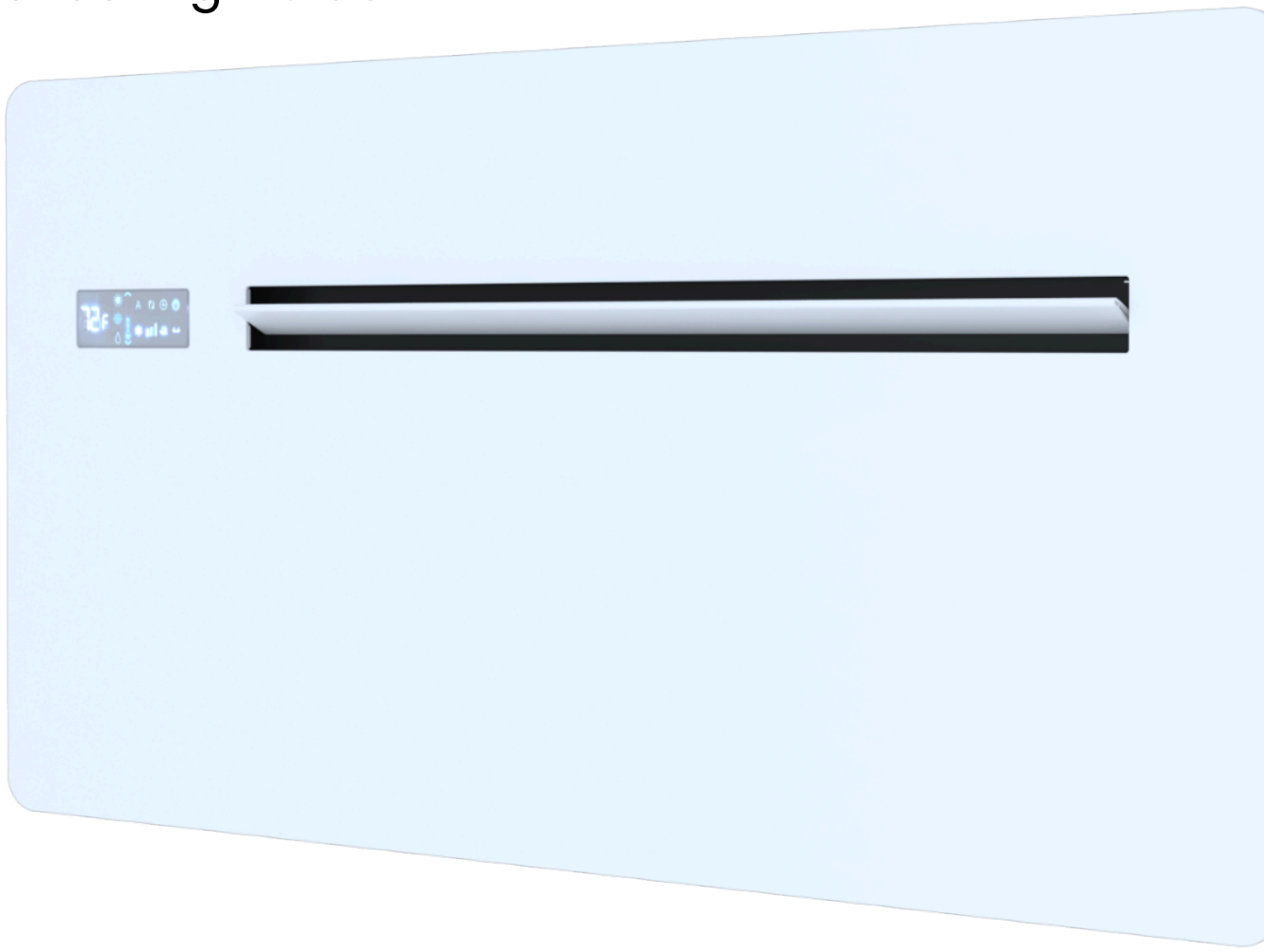
AIO® Wall Mounted and Wall Mounted Pro (Gen 1)

Maintenance and Troubleshooting Guide



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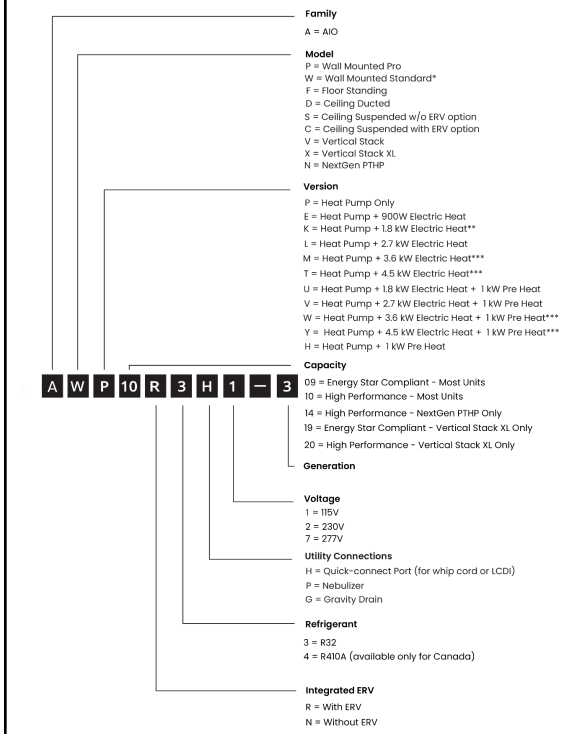
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ETL Listed. Control Number: 5032306. Conforms to: UL 60335-2-40:2022 Ed.4 | CSA C22.2#60335-2-40:2022 Ed.4 | UL 60335-1:2016 Ed.6 | CSA C22.2#60335-1:2016 Ed.2

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® nomenclature



* 8" Vents : Just generation (e.g. = 3)

6" Vents : Generation + SP (e.g. = 3SP)

** Field convertible to 900W

*** AIO® Vertical Stack XL **Only**

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ABOUT THIS MANUAL

Warnings, Cautions, and Attentions are included throughout this manual. It is important to read each carefully and follow their stated instructions.

⚠ WARNING

- Read this entire manual carefully prior to servicing the unit.
- Only Licensed HVAC Contractors may Service this Unit.
- **Failure to do so can result in death, serious injury, and/or property damage.**

⚠ WARNING

Used to advise of a situation or potential situation which, if not avoided, may result in death, serious injury, and/or property damage.



Used to advise of a situation or potential situation which, if not avoided, may result in less than optimum performance of the unit.

⚠ WARNING

If the unit needs to be lifted, use a minimum of two people. Failure to do so can result in injury to the back or other body part.

WARNINGS

Note: This manual is shipped with the AIO® Wall Mounted unit and is the property of the customer. This manual should be given to the professional service provider contracted to maintain and service the unit. If the customer retains a different service provider, this manual must be transferred to the new service provider.

This manual details the proper steps required for safe maintenance of an AIO® Wall Mounted unit. By following these instructions, the risk of improper servicing, poor performance, and damage to the equipment can be greatly reduced.

Read the entire maintenance manual prior to servicing the unit. Pay careful attention to all safety warnings and notices.

It is the service provider's responsibility to properly maintain the unit. Maintenance procedures must be performed in conformance with all applicable local and/or national codes.

While servicing the unit, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

It is your responsibility to service the system safely. The precautions listed in this Maintenance manual are supplemental to accepted safe practices. If there is a direct conflict between accepted safe practices and this manual, the more stringent precaution takes precedence.

⚠ WARNING

- Disconnect all electrical power, including remote disconnects, before making any connections.
- Discharge all motor start-run capacitors before working on the unit.
- Verify with a voltmeter that all capacitors have been discharged before servicing.
- Follow OSHA-compliant lock-out/tag-out procedures.
- All electrical connections and wiring must be installed by a qualified electrician and conform to the National Electric Code as well as all local codes that have jurisdiction.
- Do not open access panels to the interior of the unit without first disconnecting the power and/or turning off the breaker.
- Do not modify or tamper with the unit. Such interventions can create dangerous situations.
- **Failure to follow these warnings can result in death, serious injury, and/or property damage.**

⚠ WARNING

- The AIO® Wall Mounted unit contains a refrigeration system that is under high pressure. Do not puncture, heat, expose to flame, or incinerate.
- The unit contains refrigerant and refrigerant oil under high pressure. Before working on the unit, the refrigerant should be recovered to relieve the pressure.
- The refrigerant type used in this unit is specified on the nameplate.
- Use only manufacturer-approved refrigerants and additives in the unit.
- Use of non-approved refrigerants and/or additives in the unit may damage the unit and void the warranty.

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

1. INSPECTING AND CLEANING THE FILTERS

Cleaning the filters of an indoor AC unit is essential for maintaining efficient operation, extending the unit's life, and improving indoor air quality.

In extreme cases, clogged filters may create a fire hazard and potentially void the warranty.

1.1 Frequency

- **Inspection:** The AIO® Wall Mounted filters must be checked every month, especially during periods of high usage, and cleaned as needed. In environments with high dust or contaminants, cleaning will need to be more frequent.
- **Seasonal Cleaning:** At a minimum, filters should be cleaned at the beginning and end of each cooling or heating season.
- **Replacement Considerations**
  - **Inspect for Damage:** During cleaning, check for wear and tear on the filters. If filters are torn, damaged, or show signs of heavy buildup that cannot be cleaned, they should be replaced.
  - **Regular Replacement:** Some filters are designed to be replaced rather than cleaned. Follow the manufacturer's recommendation for replacement intervals, if applicable.

1.2 Cleaning the Filters

To clean the filters:

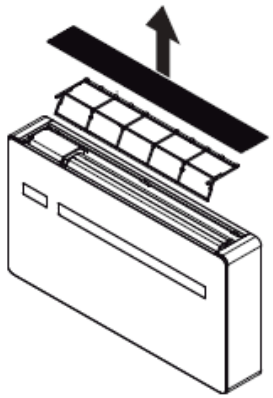
1. **Turn off the power**
   - De-energize the Unit: Before accessing the filters, always switch off the power to the unit to ensure safety and prevent accidental activation. Unplug the power cord, or turn off the breaker and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Remove the Filters**
   - **Access the Filters:** Lift the return air grille on the top by pulling it toward yourself and lifting it.

Figure 2. Accessing the Filters



   - **Handle Carefully:** Remove the filters carefully to avoid damaging them or releasing accumulated dust into the air.

Figure 3. Removing the Filters

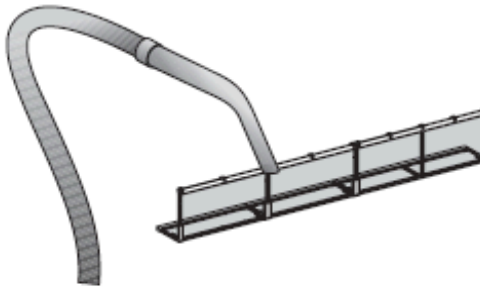


3. **Clean the Filters**

   Clean the filters using one of the following methods:

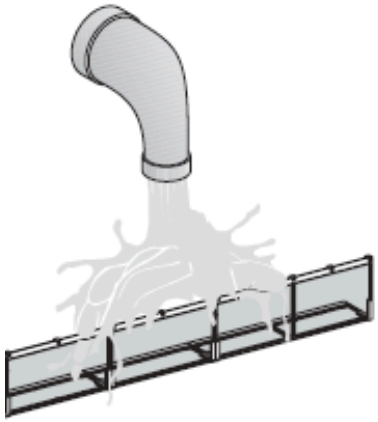
   - **Vacuum Cleaning:** Use a vacuum cleaner with a soft brush attachment to remove dust and debris from the filter. This is the quickest method for light cleaning.

Figure 4. Vacuum Cleaner



- **Water Rinse:** For more thorough cleaning, rinse the filters under lukewarm running water. Ensure that the water flows opposite the direction of airflow through the filter. Avoid using hot water or harsh chemicals.

Figure 5. Rinse the Filters



- **Mild Detergent:** If the filters are heavily soiled, they can be soaked in a mixture of water and mild detergent. Gently scrub with a soft brush, if necessary.Rinse the filters with clean water to remove any soap residue.

4. **Dry the Filters**
   - Remove excess water from the filters.
   - **Do Not Use Heat:** Avoid using hair dryers, heaters, or direct sunlight to dry the filters, because this can damage the filter material.
5. **Reinstallation**
   - **Ensure Proper Fit:** Reinstall the filters into the unit, making sure that they fit securely.
   - **Check Seals:** Ensure that the filters and any gaskets are properly seated to prevent unfiltered air from bypassing the filter and entering the system.
6. **Replace the Grille**
   - Return the air grille to its place above the filter.
7. **Final Check**
   - **Turn the Unit On:** After reassembly, turn the unit back on and check for normal operation.

2. CLEANING THE COILS

Cleaning the coils prevents airflow issues and enhances overall system efficiency.

2.1 Frequency

The coils must be cleaned once every 18 months. In environments with high dust or contaminant levels, the coils will need to be cleaned more frequently.

2.2 Cleaning the Evaporator Coil

It is recommended that you clean the evaporator coil before you clean the condenser coil.

The coil above the louver is the evaporator coil. Scan the following QR code to view a video of cleaning the evaporator coil.

Figure 6. QR Code - Cleaning the Evaporator Coil

To clean the evaporator coil:

1. **Access the coils.**
   - For more information, see Accessing the Coils and Drainage Components.
2. **Remove the temperature sensor from the evaporator coil.**
   - Pull the temperature sensor holder straight out from the condenser coil.
   - **DO NOT USE A SCREWDRIVER** to remove the temperature sensor.

- Take care not to bend the fins of the condenser coil while removing the temperature sensor.

3. **Spray the coil with a certified HVAC coil cleaner.**
   - It is recommended that you use *Viper Aerosol Coil Cleaner*, because it is non-toxic and will not damage the pump.
   - Use a generous amount of spray.
4. **Clean the coil using a non-metallic HVAC coil cleaning brush or paintbrush.**

Do **NOT** use a metal brush, because it will damage the coils and fins.

- Use the brush on the front of the entire coil assembly.
- Make sure to brush behind the drain hose and the connection to the evaporator pan.

5. **Rinse the coil.**
   - Use a small amount of room temperature water.
   - Pour water from a container onto the coil.

Do **NOT** spray water onto the coil.

- For stubborn dirt, you can brush the coil while you rinse.

2.3 Cleaning the Condenser Coil

The coil towards the bottom of the unit is the condenser coil. Scan the following QR code to view a video of cleaning the condenser coil.

Figure 7. QR Code - Cleaning the Condenser Coil

To clean the condenser coil and its associated components:

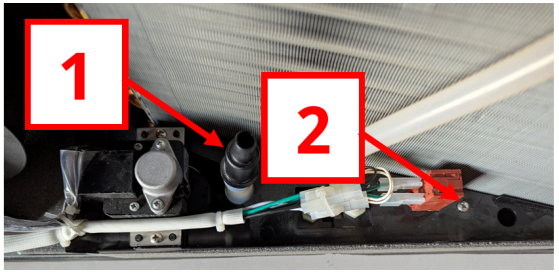
1. **Access the coils.**
   - For more information, see Accessing the Coils and Drainage Components.
2. **Remove the temperature sensor from the condenser coil.**
   - Pull the sensor holder straight out from the condenser coil.

DO NOT USE A SCREWDRIVER to remove the temperature sensor.

- Take care not to bend the fins of the condenser coil while removing the temperature sensor.

3. **Disconnect the clear condensate drain hose from the right side of the condenser drain pan.**
   - Hold the upper part of the drain hose in one hand.
   - Pull the top half of the drain hose up using the other hand.
     The drain hose will come free from the evaporator pan coupling.
4. **Disconnect and remove the condenser drain pan cover from the unit.**
   - Unscrew the two drain pan cover screws (labeled in the following figure).

Figure 8. Unscrew the two drain pan cover crews



You may need to break the foam insulation seal to remove the drain pan cover.

- Remove the condenser pan cover from its place, and put it aside.

The condenser pan cover remains connected to the unit. Make sure not to damage any of the connections to the condenser pan.

5. **Spray the coil with a certified HVAC coil cleaner.**
   - It is recommended that you use *Viper Aerosol Coil Cleaner*, because it is non-toxic and will not damage the pump.
   - Use a generous amount of spray.**Clean the coil using a non-metallic HVAC coil cleaning brush or paintbrush.**

Do **NOT** use a metal brush, because it will damage the coils and fins.

- Use the brush on the front of the entire coil assembly.
- Make sure to brush behind the drain hose and the connection to the evaporator pan.

6. **Rinse the coil.**
   - Use a small amount of room temperature water.
   - Pour water from a container onto the coil.

Do **NOT** spray water onto the coil.

   - For stubborn dirt, you can brush while you rinse.
7. **Use the brush to clean the pump insert (on the bottom left of the unit) and the floor of the unit.**
8. **Rinse the pump insert and the floor of the unit.**
9. **Position the evaporator pan in the unit.**
10. **Reattach the evaporator pan to the unit using the screws removed in step 5.**
11. **Reconnect the drain hose to the evaporator pan.**
    - Attach the clear drain hose to the evaporator pan.
    - Ensure that the connection is secure.
12. **Reattach the temperature sensor to the coil.**
    - Clip the temperature sensor onto the condenser coil.

The placement of the sensor on the coil is not critical.

13. **Replace the covers.**
    - For more information, see Replacing the Covers.

3. CLEANING THE DRAINAGE COMPONENTS

To ensure optimal performance and prevent the buildup of zooglea, clean the following components at least once every six months, or more frequently if environmental conditions require it:

- Upper drain pan
- Lower drain pan
- Upper condensate collection box (located beneath the upper drain pan)
- Condensate pump (located above the lower drain pan)

Use a coil-safe drain line cleaner, such as Valterra PowerMax, to perform the cleaning safely and effectively.

Cleaning the drainage components ensures proper draining of the unit. Failure to clean the drain components may result in the unit flooding and operating improperly.

3.1 Frequency

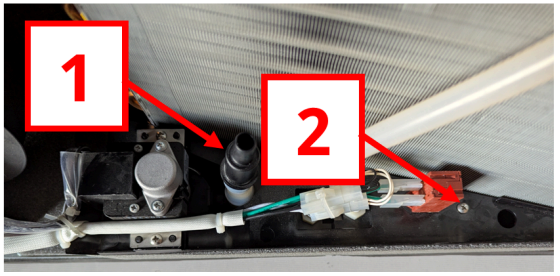
The drainage components must be cleaned every six months.

3.2 Cleaning the Drainage Components

To clean the drainage components:

1. **Disconnect the clear condensate drain hose from the right side of the condenser drain pan.**
   - Hold the upper part of the drain hose in one hand.
   - Pull the top half of the drain hose up using the other hand.
     The drain hose will come free from the condenser pan coupling.
2. **Disconnect and remove the condenser drain pan cover from the unit.**
   - Unscrew the two drain pan cover screws (labeled in the following figure.)

Figure 9. Unscrew the two drain pan cover crews



You may need to break the foam insulation seal to remove the drain pan cover.

   - Remove the condenser pan cover from its place, and put it aside.

The condenser pan cover remains connected to the unit. Make sure not to damage any of the connections to the condenser pan.

3. **Use the brush to clean the pump insert (on the bottom left of the unit) and the floor of the unit.**
4. **Rinse the pump insert and the floor of the unit.**
5. **Vacuum the drain hose.**
   - Attach a vacuum cleaner to the clear drain hose.
   - Suction out any debris or blockages.
6. **Position the evaporator pan cover in the unit.**
7. **Reattach the evaporator pan cover to the unit using the screws removed in step 5.**
8. **Flush the evaporator pan.**
   - Pour fresh water into the lower section of the evaporator pan. Use a vacuum cleaner to

suction out the water.

- Repeat the process, if necessary, until the water vacuumed out is clear.

9. Reconnect the drain hose to the evaporator pan.

- Attach the clear drain hose to the evaporator pan.
- Ensure that the connection is secure.

10. Refill the trap.

- Pour one cup of water into the evaporator pan to refill the siphon (trap), located in the compressor compartment. This ensures that the trap functions properly by maintaining a water seal.

11. Check seals.

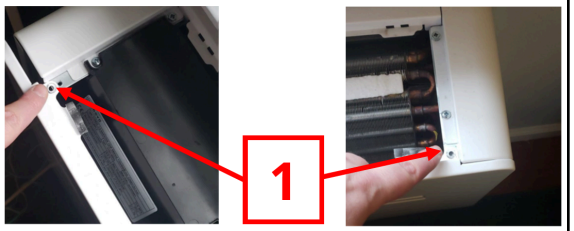
- Ensure that the drain pan cover is seated properly.

4. ACCESSING THE COILS AND DRAINAGE COMPONENTS

To access the coils for cleaning:

1. **Turn off the power**
   - De-energize the Unit: Before accessing the filters, always switch off the power to the unit to ensure safety and prevent accidental activation . Unplug the power cord, or turn off the breaker and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Remove the front panel.**
   - Lift the grille off of the unit and set it aside.
   - Unscrew the front two screws on the top of the unit (labeled in the following figure).

Figure 10. Unscrew the two screws on the top of the unit

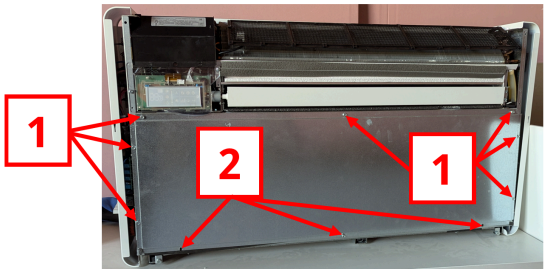


   - Gently pull the top panel forward and set aside.
3. **Open the bottom access panel.**
   - Use an electric screwdriver to unscrew the screws (labeled 1 in the figure below) that hold the bottom access panel in place.
   - Use an electric screwdriver to loosen the screws (labeled **2** in the figure below) that support the bottom access panel.



Do **NOT** remove the bottom screws (2) from the unit.

Figure 11. Screws from the unit



   - Lift the bottom access panel and set aside.

5. REPLACING THE COVERS

To replace the covers on the unit:

1. **Reattach the metal bottom access panel.**
    - Slot the bottom access panel on the three loosened screws.
    - Secure the bottom metal access panel in place with the other seven screws.
    - Tighten all of the screws.
2. **Reattach the front panel of the unit.**
    - Position the front panel in place.
    - Secure the front panel with the screws

6. TROUBLESHOOTING

The following sections provide troubleshooting information and include a list of error codes and their mitigations.

6.1 Error Codes

The following provides a list of error codes, their causes, and the unit operations that can continue despite the error.

Code	Description
E1	The Room Temperature (RT) sensor or the MCU Board is faulty. This sensor only monitors the antifreeze function on the indoor coil. The unit can still function in Cooling, Heating, and Dehumidification modes.
E2	The Internal Pressure Temperature (IPT) sensor or the MCU Board is faulty. The unit cannot operate in any mode.
E3	The Outside Temperature (OT) sensor or the MCU Board is faulty. The unit cannot operate in any mode.
E4	The Outdoor Pressure Temperature (OPT) sensor or the MCU Board is faulty. The unit can still function in Cooling, Heating, and Dehumidification modes. Defrosting is performed at fixed times.
E5	The internal fan motor is faulty. The unit cannot operate in any mode.
E6	The external (condenser) fan motor is faulty. The unit cannot operate in any mode.
E7	There is no communication with the display. The unit cannot operate in any mode.
E8	The compressor discharge probe failed. The unit cannot operate in any mode.
CP	The Contact Presence (CP) contact is open. The unit cannot operate in any mode.
OF	Condensate is not draining and the drain pan is full. The unit cannot operate in any mode.
E12	The driver communicates correctly with the controller, but the compressor does not function. The unit cannot operate in any mode.
CE	There is a communication error between the MCU Board and the display. The unit cannot operate in any mode.
E16	The 4-way valve is not connected to the MCU Board properly or the refrigerant circuit is empty. The unit cannot operate in any mode.
E17	The driver is not programmed correctly or the compressor that is installed in the unit is not compatible for the designated type. **Note:** This error is only meant for the production team. The unit cannot operate in any mode.
E19	An ohm value is out of range or there is an open contact. **Note**: This error is only meant for models with electric strip heating. The unit cannot operate in any mode.
E20	The (GT) second external exchanger (condenser) temperature probe is faulty. The unit cannot operate in any mode.
E22	The unit is attached to an incompatible power supply. For 230V units: The input power supply is not in compliance with the safety and use range: 230V ±10% (207V - 253V). For 115 VAC units: The input power supply is not in compliance with the safety and use range: 115V ±10% (104V - 126V). **Note:** This error code may appear when the unit is turned off, because the capacitor packs remain charged **for at least one minute**. In this case, the error code will disappear as soon as the capacitor packs discharge. The unit cannot operate in any mode.
E23	This code is not relevant for any models currently sold in the USA. **Note:** This error is only meant for models with ultra-violet lamps. The unit can operate normally
E24	There is a communication error between the MCU Board and the ERV Board. The unit cannot operate in any mode.

6.2 Troubleshooting

The following sections provide information on handling various errors and correcting the issues that caused the errors. Follow the mitigation instructions in the order provided.

6.2.1 E1 - Room Temperature Sensor Error

To troubleshoot an **E1** error code:

1. **Check that the RT sensor connector is correctly connected to CN18.**
   - If the RT sensor connector is correctly connected to CN18, continue with step 2.
   - If the RT sensor connector is not inserted correctly to CN18:
     - Insert the RT sensor connector into CN18.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 2.
2. **Check that the RT sensor is intact and does not show any signs of skinning or breakage.**
   - If the RT sensor is intact, continue with step 3.
   - If the RT sensor is not intact:
     - Replace the RT sensor.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 3.
3. **Disconnect the RT sensor, and check the Ohmic value with a multimeter.**
   - If the Ohmic value is between 5.25 kΩ and 6.75 kΩ at room temperature, continue with step 4.
   - If the Ohmic value is not between 5.25 kΩ and 6.75 kΩ at room temperature:
     - Replace the RT sensor.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 4.
4. **Disconnect the RT sensor and use a multimeter to check if there is a short circuit between the poles on the RT sensor.**
   - If there is no short circuit between the poles of the RT sensor, continue with step 5.

- If there is a short circuit between the poles of the RT sensor:
    - Replace the RT sensor.
    - Turn on the power to the unit.
    - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 5.

5. **Switch the RT sensor connectors and turn on the power to the unit. Check if error code E4 appears in place of error code E1.**
    - If error code **E1** still appears, continue with step 6.
    - If error code **E4** appears:
        - Replace the RT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 6.
6. **Replace the MCU Board.**

6.2.2 E2 - IPT Sensor Error

To troubleshoot an **E2** error code:

1. **Check that the IPT sensor connector is correctly connected to CN18.**
    - If the IPT sensor connector is correctly connected to CN18, continue with step 2.
    - If the IPT sensor connector is not inserted correctly to CN18:
        - Insert the IPT sensor connector into CN18.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 2.
2. **Check that the IPT sensor is intact and does not show any signs of skinning or breakage.**
    - If the IPT sensor is intact, continue with step 3.
    - If the IPT sensor is not intact:
        - Replace the IPT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 3.
3. **Disconnect the IPT sensor, and check the Ohmic value with a multimeter.**
    - If the Ohmic value is between 5.25 kΩ and 6.75 kΩ at room temperature, continue with step 4.
    - If the Ohmic value is not between 5.25 kΩ and 6.75 kΩ at room temperature:
        - Replace the IPT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 4.
4. **Disconnect the IPT sensor and use a multimeter to check if there is a short circuit between the poles on the IPT sensor.**
    - If there is no short circuit between the poles of the IPT sensor, continue with step 5.
    - If there is a short circuit between the poles of the IPT sensor:
        - Replace the IPT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 5.
5. **Switch the IPT sensor connectors and turn on the power to the unit. Check if error code E4 appears in place of error code E2.**
    - If error code **E2** still appears, continue with step 6.
    - If error code **E4** appears:
        - Replace the IPT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 6.
6. **Replace the MCU Board.**

6.2.3 E3 - OT Sensor Error

To troubleshoot an **E3** error code:

1. **Check that the OT sensor connector is correctly connected to CN17.**
    - If the OT sensor connector is correctly connected to CN17, continue with step 2.
    - If the OT sensor connector is not inserted correctly to CN17:
        - Insert the OT sensor connector into CN17.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 2.
2. **Check that the OT sensor is intact and does not show any signs of skinning or breakage.**
    - If the OT sensor is intact, continue with step 3.
    - If the OT sensor is not intact:
        - Replace the OT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 3.
3. **Disconnect the OT sensor, and check the Ohmic value with a multimeter.**
    - If the Ohmic value is between 5.25 kΩ and 6.75 kΩ at room temperature, continue with step 4.
    - If the Ohmic value is not between 5.25 kΩ and 6.75 kΩ at room temperature:
        - Replace the OT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 4.
4. **Disconnect the OT sensor and use a multimeter to check if there is a short circuit between the poles on the OT sensor.**
    - If there is no short circuit between the poles of the OT sensor, continue with step 5.
    - If there is a short circuit between the poles of the OT sensor:
        - Replace the OT sensor.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 5.
5. **Switch the OT sensor connectors and turn on the power to the unit. Check if error code E1 appears in place of error code E3.**
    - If error code **E3** still appears, continue with step 6.

- If error code **E1** appears:
  - Replace the OT sensor.
  - Turn on the power to the unit.
  - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 6.

6. Replace the MCU Board.

6.2.4 E4 - OPT Sensor Error

To troubleshoot an **E4** error code:

1. **Check that the OPT sensor connector is correctly connected to CN17.**
   - If the RT sensor connector is correctly connected to CN17, continue with step 2.
   - If the OPT sensor connector is not inserted correctly to CN17:
     - Insert the OPT sensor connector into CN17.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 2.
2. **Check that the OPT sensor is intact and does not show any signs of skinning or breakage.**
   - If the OPT sensor is intact, continue with step 3.
   - If the OPT sensor is not intact:
     - Replace the OPT sensor.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 3.
3. **Disconnect the OPT sensor, and check the Ohmic value with a multimeter.**
   - If the Ohmic value is between 5.25 kΩ and 6.75 kΩ at room temperature, continue with step 4.
   - If the Ohmic value is not between 5.25 kΩ and 6.75 kΩ at room temperature:
     - Replace the OPT sensor.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 4.
4. **Disconnect the OPT sensor and use a multimeter to check if there is a short circuit between the poles on the OPT sensor.**
   - If there is no short circuit between the poles of the OPT sensor, continue with step 5.
   - If there is a short circuit between the poles of the OPT sensor:
     - Replace the OPT sensor.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 5.
5. **Switch the OPT sensor connectors and turn on the power to the unit. Check if error code E2 appears in place of error code E4.**
   - If error code **E4** still appears, continue with step 6.
   - If error code **E2** appears:
     - Replace the OPT sensor.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 6.
6. **Replace the MCU Board.**

6.2.5 E5 - Faulty Internal Fan Motor

To troubleshoot an **E5** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check that the ECM fan motor cable is connected correctly to the CN7 contact.**
   - If the ECM fan motor cable is connected correctly to the CN7 contact, continue with step 3.
   - If the ECM fan motor cable is not connected correctly to the CN7 contact:
     - Connect the fan motor cable to the CN7 contact.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 3.
3. **Check if the fan turns freely.**
   Carefully insert a screwdriver into the front vent and test the upper fan to see if it turns freely.
   - If the fan turns freely, continue with step 4.
   - If the fan does not turn freely:
     - Disassemble the internal coil to access the fan and remove the item that is

preventing the fan from spinning freely.
    - Turn on the power to the unit.
    - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 4.

4. **Check if the air filter is clean.**
    - If the air filter is clean, continue with step 5.
    - If the air filter is not clean:
        - Clean the air filter.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 5.
5. **Check that the wiring of the internal fan motor (FAN-IN) is intact and does not show any signs of skinning or breakage.**
    - If the wiring of the internal fan motor is intact, continue with step 6.
    - If the wiring of the internal fan motor is not intact:
        - Replace the fan motor.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 6.
6. **Check that the signal control dip switch (L) is pointed down (0-6V).**
    - If the signal control dip switch is pointed down, continue with step 7.
    - If the signal control dip switch is pointed up:
        - Move the signal control dip switch to the correct position.
        - Turn on the power to the unit.
        - Check that the error no longer appears.
        - If the error still appears, continue with step 7.
7. **Turn the unit on and check that the internal fan works with the unit in Fan Only mode and Maximum Power.**
    - If the internal fan works, continue with step 8.
    - If the internal fan does not work:
        - Turn off the power to the unit.
        - Replace the internal fan.
8. **Turn the power off, and replace the upper fan motor. Turn the power on and check if the error still persists.**
    - If the error persists, continue with step 9.
9. **Replace the MCU Board.**

6.2.6 E6 - Faulty External (Condenser) Fan Motor

To troubleshoot an E6 error code:

1. **Turn off the power.**

   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check that the external fan motor cable is connected correctly to the CN9 contact.**
    - If the external fan motor cable is connected correctly to the CN9 contact, continue with step 3.
    - If the external fan motor cable is not connected correctly to the CN9 contact:
        - Connect the fan motor cable to the CN9 contact.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 3.
3. **Check if the fan turns freely.**
    - Test the external fan to see if it turns freely.
    - If the fan turns freely, continue with step 4.
    - If the fan does not turn freely:
        - Access the fan and remove the item that is preventing the fan from spinning freely.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 4.
4. **Check that the wiring of the External fan motor (FAN-O) is intact and does not show any signs of skinning or breakage.**
    - If the wiring of the external fan motor is intact, continue with step 5.
    - If the wiring of the internal fan motor is not intact:
        - Replace the fan motor.
        - Turn on the power to the unit.
        - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 5.
5. **Check that the signal control dip switch (L) is pointed down (0-6V).**
    - If the signal control dip switch is pointed down, continue with step 6.
    - If the signal control dip switch is pointed up:
        - Move the signal control dip switch to the correct position.
        - Turn on the power to the unit.
        - Check that the error no longer appears. If it does , continue with step 6.
6. **Turn the unit on and check that the external fan works with the unit in Fan Only mode and Maximum Power.**
    - If the external fan works, continue with step 7.
    - If the external fan does not work:
        - Turn off the power to the unit.
        - Replace the external fan.
        - Turn the power to the unit on and check if the error persists.
          If it does , continue with step 8.
7. **With the unit in Fan Only mode and Maximum Power:**
    - Hold the + and A keys simultaneously for 10 seconds to access the Commissioning menu.
    - Check if the value of the FO parameter is less than 3.
      If the value of FO is less than 3, replace the fan motor.
8. **Turn the power off, and replace the upper fan motor. Turn the power on and check if the error still persists.**
    - If the error persists, continue with step 9.
9. **Replace the MCU Board.**

6.2.7 E7 - Communication Error with Display

To troubleshoot an **E7** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Remove the MCU Board and inspect it.**
   - If there are no burn marks on the MCU board, continue with step 3.
   - If there are burn marks on the MCU board, replace the MCU Board.
3. **Ensure that the 2 stake-on connectors are correctly connected to J20.**
   - If the stake-on connectors are correctly connected, continue with step 4.
   - If the stake-on connectors are not correctly connected:
     - Connect the stake-on connectors properly.
     - Turn on the power and see if the error persists.If the error persists, turn off the power, remove the MCU Board, and continue with step 4.
4. **Ensure that the 2 stake-on connectors show no signs of oxidation (rust).**
   - If the stake-on connectors show no signs of oxidation, replace the MCU Board.
   - If the stake-on connectors show signs of oxidation:
     - Clean the connectors.
     - Connect them to **J20**.
     - Continue with step 5.
5. **Turn on the power.**
   - If the error persists, replace the MCU Board.

6.2.8 E8 - Compressor Discharge Probe Error

To troubleshoot an **E8** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check that the compressor discharge probe is correctly connected to CN17.**
   - If the compressor discharge probe is correctly connected to J16, continue with step 3.
   - If the compressor discharge probe is not inserted correctly to J16:
     - Insert the compressor discharge probe into J16.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 3.
3. **Check that the compressor discharge probe is intact and does not show any signs of skinning or breakage.**
   - If the compressor discharge probe is intact, continue with step 4.
   - If the compressor discharge probe is not intact:
     - Replace the compressor discharge probe.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 4.
4. **Disconnect the compressor discharge probe and use a multimeter to check if there is a short circuit between the poles on the compressor discharge probe.**
   - If there is no short circuit between the poles of the compressor discharge probe, continue with step 5.
   - If there is a short circuit between the poles of the compressor discharge probe:
     - Replace the compressor discharge probe.
     - Turn on the power to the unit.
     - Check that the error no longer appears. If the error still appears, turn off the power and continue with step 5.
5. **Replace the MCU Board.**

6.2.9 OF - Open Float Error

The unit includes a tray for collecting condensate, produced both in heating and cooling modes.

In heating mode, the condensate must be conveyed to a suitable place, providing an external drain. If the unit is intended for use only in cooling and/or dehumidification, it is not necessary to provide a condensate drain, because the device has a system for the self-disposal of the condensate produced.

Operating Mode - Heating

When operating in Heating mode, the condensate must flow freely through the drainpipe.

In case of an **E10/OF** error, check that there are no bends or obstructions in the drainpipe that may prevent water from draining.

- If there are no bends or obstructions in the drainpipe that may prevent the water from draining, continue with the troubleshooting procedure below.
- If there are bends or obstructions in the drainpipe that may prevent the water from draining:
  a. Straighten the drainpipe and/or remove any obstructions.
  b. Let the water drain from the tray.
  c. Power the unit on. If the error persists, continue with the troubleshooting procedure below.

Operating Mode - Cooling/Dehumidification

When operating in Cooling and Dehumidifying modes in extreme working conditions (high temperatures and high humidity), if the condensation drain has not been set up, the machine may not be able to dispose of the condensate produced. This will result in the unit displaying an **E10/OF** error.

This alarm is not an error. Rather, it is signaling that the condensate water has reached the maximum level of the collection pan. In this situation, bleed the collection pan manually:

1. **Place a tray under the condensate drainpipe.**
2. **Drain the water using the cap on the condensate drainpipe.**

If the **E10/OF** alarm persists, continue with the troubleshooting procedure below.

Overflow Error Troubleshooting

If the **E10/OF** error persists even when the condensate collection tray is empty:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the

AIO® Wall Mounted to cool down.

2. **Check if the floats are blocked.**
   - If the floats are not blocked, continue with step 3.
   - If the floats are blocked:
     - Unblock the floats.
     - Power the unit on. If the E10/OF error persists, continue with step 3.
3. **Manually activate the floats. Check if the input values (ALARM) meet the following criteria:**
   - When neither float is activated, the input voltage is 2.5 VDC.
   - When the LEVEL float is activated, the input voltage is 5 VDC.
   - When the ALARM float is activated, the input voltage is 0 VDC.

     Use a multimeter to measure the voltage.
   - If the voltage meets the specified criteria, replace the MCU Board.
   - If the voltage does not meet the specified criteria, replace the floats.

6.2.10 CP - Contact Presence Error

To troubleshoot a CP error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check if the CP contact (DOOR) on the MCU Board is open.**
   - If the CP contact on the MCU Board is open, close the CP contact.
   - If the CP contact on the MCU Board is closed, replace the MCU Board.

6.2.11 E12 - Compressor Fault

To troubleshoot an **E12** error code:

1. **Check the input power.**
   Check that the input power supply (EXTERNAL) complies with the safety and use range.

   For 230V units, ensure that the input power is 230V ±10% (207V - 253V).
   For 115V units, ensure that the input power is 115V ±10% (104V - 126V).
   - If the input power is in the safety and user range, continue with step 2.
   - If the input power is not in the safety range:
     - Connect the unit to a power supply with the correct input power voltage.
     - Power the unit on. If the **E12** error persists, continue with step 2.
2. **Check if the compressor starts when the unit is turned on.**
   - If the compressor starts, continue with step 3.
   - If the compressor does not start, continue with step 3 and then step 6.
3. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
4. **Ensure that the 3 stake-on connectors of the compressor are correctly connected to the U, V, and W connectors on the MCU Board.**
   - If the stake-on connectors are correctly connected, continue with step 6.
   - If the stake-on connectors are not correctly connected:
     - Connect the stake-on connectors properly.
     - Turn on the power and see if the error persists.
       If the error persists, turn off the power, remove the MCU Board, and continue with step 5.
5. **Ensure that the 3 stake-on connectors of the compressor (U, V, and W) show no signs of oxidation (rust).**
   - If the stake-on connectors show no signs of oxidation, replace the MCU Board.
   - If the stake-on connectors show signs of oxidation:
     - Clean the connectors.
     - Connect them to the **U**, **V**, and **W** connectors on the MCU Board.
     - Continue with step 6.
6. **If the compressor starts up with the electronics and emits a metallic and/or mechanical rushing noise, check that the 3 phases are connected to the U, V, and W connectors on the MCU Board in the correct order.**
   - If the **u**, **v**, and **w** connectors are connected in the correct order, replace the compressor.
   - If the **u**, **v**, and **w** connectors are not connected in the correct order:
     - Connect the **u**, **v**, and **w** connectors in the correct order.
     - Power on the unit.
     - Check if the **E12** error persists.
7. **Disconnect the 3 stake-on connectors of the compressor (U, V, and W) from the compressor head. Use a multimeter to check the Ohm values between the three phases. The value should be between 4-6 Ohms and be identical.**
   - If the values are not in the 4-6 ohm range, replace the compressor.
   - If the values are in the 4-6 ohm range, replace the MCU Board.

6.2.12 CE - Communication Error

To troubleshoot a **CE** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check that the Display connection cable is connected correctly to the connector (I).**
   - If it is connected correctly, replace the display board and the cable.
   - If it is not connected correctly:
     - Correct the connection.
     - Power the unit on.If the **CE** error persists, replace the MCU Board.

6.2.13 E16 - 4-way Valve Management Error/Lack of Refrigerant Charge

To troubleshoot an **E16** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check that the connection cable of the 4-way valve is connected correctly to the connector**

(Q).

- If it is connected correctly, continue with step 3.
- If it is not connected correctly:
  - Correct the connection.
  - Power the unit on.If the **E16** error persists, continue with step 3.

3. **Turn on the power and set the unit to Heating mode. Verify that the 4-way valve is correctly powered (120V/240V).**
   - If the 4-way valve is correctly powered, continue with step 4.
   - If the 4-way valve is not correctly powered, replace the MCU Board.
4. **In Heating mode, try to physically disconnect the coil of the 4-way valve from the valve body.**
   - If there is magnetic traction when removing the coil from the seat, continue with step 5.
   - If there is no magnetic traction when removing the coil from the seat, replace the 4-way valve coil.
5. **In Heating mode, when you remove the coil from the seat, do you hear the sound of gas moving?**
   - If you hear the sound of gas moving, verify proper operation in Heating and Cooling modes. If the error persists, continue with step 6.
   - If you do not hear the sound of gas moving, continue with step 6.
6. **Replace the unit.**

6.2.14 E17 - Compressor Incompatibility

To troubleshoot an **E17** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Turn on the power.**
   If the error persists, replace the unit.

6.2.15 E19 - Resistance Safety Temperature Error

To troubleshoot an **E19** error code:

1. **Check that the unit is a model with electric strip heating.**
   - If the unit is a model with electric strip heating, continue with step 2.
   - If the unit is not a model with electric strip heating, from the setup menu, ensure that **HT** is set to **NO**.
2. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
3. **Check that the safety probe connector is connected correctly to the connector (LEVEL)(D).**
   - If it is connected correctly, continue with step 4.
   - If it is not connected correctly:
     - Correct the connection.
     - Power the unit on.If the E19 error persists, continue with step 4.
4. **Check that the safety probe connector is intact and does not show any signs of skinning or breakage.**
   - If the safety probe connector is intact, continue with step 5.
   - If the safety probe connector is not intact:
     - Replace the safety probe connector.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 5.
5. **Disconnect the safety probe connector and use a multimeter to check if there is a short circuit between the poles on the safety probe connector.**
   - If there is no short circuit between the poles of the safety probe connector, continue with step 6.
   - If there is a short circuit between the poles of the safety probe connector:
     - Replace the safety probe.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 6.
6. **Replace the MCU Board.**

6.2.16 E20 - GT Sensor Error

To troubleshoot an **E20** error code:

1. **Check that the Condenser Temperature (GT) probe connector is correctly connected to J32.**
   - If the Condenser Temperature (GT) probe connector is correctly connected to J32, continue with step 2.
   - If the Condenser Temperature (GT) probe connector is not inserted correctly to J32:
     - Insert the Condenser Temperature (GT) probe connector into J32.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 2.
2. **Check that the Condenser Temperature (GT) probe is intact and does not show any signs of skinning or breakage.**
   - If the Condenser Temperature (GT) probe is intact, continue with step 3.
   - If the Condenser Temperature (GT) probe is not intact:
     - Replace the Condenser Temperature (GT) probe.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 3.
3. **Disconnect the Condenser Temperature (GT) probe, and check the Ohmic value with a multimeter.**
   - If the Ohmic value is between 5.25 kΩ and 6.75 kΩ at room temperature, continue with step 4.
   - If the Ohmic value is not between 5.25 kΩ and 6.75 kΩ at room temperature:
     - Replace the Condenser Temperature (GT) probe.
     - Turn on the power to the unit.
     - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 4.
4. **Disconnect the Condenser Temperature (GT) probe and use a multimeter to check if there is a**

short circuit between the poles on the Condenser Temperature (GT) probe.

- If there is no short circuit between the poles of the Condenser Temperature (GT) probe, continue with step 5.
- If there is a short circuit between the poles of the Condenser Temperature (GT) probe:
  - Replace the Condenser Temperature (GT) probe.
  - Turn on the power to the unit.
  - Check that the error no longer appears.If the error still appears, turn off the power and continue with step 5.

5. **Replace the MCU Board.**

6.2.17 E22 - Incompatible Electrical Supply Fault

To troubleshoot an **E22** error code:

1. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
2. **Check the input power.**
   Check that the input power supply (EXTERNAL) complies with the safety and use range.
   For 230V units, ensure that the input power is 230V ±10% (207V - 253V).
   For 115 VAC units, ensure that the input power is 115V ±10% (104V - 126V).
   - If the input power is in the safety and user range, continue with step 3.
   - If the input power is not in the safety range:
     - Connect the unit to a power supply with the correct input power voltage.
     - Power the unit on. If the **E22** error persists, continue with step 3.
3. **Check that the MCU Board power supply (POWER) is compliant with the power supply input to the filter board (P13).**
   - If the MCU Board power supply is compliant with the power supply input to the filter board, continue with step 4.
   - If the MCU Board power supply is not compliant with the power supply input to the filter board, replace the MCU Board.
4. **Turn on the power to the unit. Wait at least 5 minutes. If the E22 error code persists, replace the MCU Board.**

6.2.18 E23 - UV Lamp Fault

To troubleshoot an **E23** error code:

1. **Replace the MCU Board.**

6.2.19 E24 - Communication Fault with the ERV Board

To troubleshoot an **E24** error code:

1. **Check if the unit includes the ERV kit, model HREV00IC0xx.**
   - If the unit includes the ERV kit, continue with step 2.
   - If the unit does not include the ERV kit, from the setup menu, ensure that **HR** is set to **NO**.
2. **Turn off the power.**
   De-energize the Unit: Unplug the power cord or turn off the breaker, and wait five minutes for the AIO® Wall Mounted to cool down.
3. **Use a multimeter to verify that there is no short circuit in the serial communication between the MCU Board and the ERV Board**.
   - If there is no short circuit between the MCU Board and the ERV Board, continue with step 4.
   - If there is a short circuit between the MCU Board and the ERV Board, replace the ERV Board.
4. **Use a multimeter to verify that the polarity in the serial communication between the MCU Board and the ERV Board respects the polarity shown in the wiring diagram.**
   - If the polarity is not as shown in the wiring diagram, continue with step 5.
   - If the polarity is the same as in the wiring diagram, replace the ERV Board.
5. **Correct the polarity of the connection between the ERV board and the MCU Board.**
6. **Turn the power to the unit on.**
   - If the **E24** error code persists, replace the MCU Board.

7. TROUBLESHOOTING OTHER ISSUES

The following sections provide information about troubleshooting issues that do not cause error codes to be displayed on the unit.

7.1 The Unit is Noisy

If the unit is noisy, it is important to determine from which part the noise is coming from . This will help mitigate the issue that is causing the noise.

- **The noise is coming from the front left side of the unit** - Check for any foreign materials in the external fan.
- **The noise is coming from the front right side of the unit** - Check the distance between the tubes and the internal metal and heavy rubber parts.
- **The noise is coming from the back of the unit** - Check that the lower anti-lift bracket is properly connected to the wall.
- **The noise is coming from the louver -**
  - If the noise is a creaking sound, check that the bearing on the right part of the fan is properly assembled.
  - If the noise is a rubbing sound, check the following:
    - The screw is assembled correctly.
    - The possible presence of foreign material in the pipes at the back of the unit.
    - The possible presence of pressure on the pipes at the back of the unit.

7.2 The Unit is Leaking Water

If the unit is leaking water, it is important to determine the source of the leak. This will help mitigate the issue that is causing the leak.

Note: If the unit shows an **OF** error, follow the troubleshooting steps for the error code.

- **The leak is coming from the top left side of the unit** - Check that the installation of the unit was performed correctly and that the unit is level.
  If the problem persists:
  - Check that there is no dirt or occlusion inside the two upper drain trays.
  - Check that both upper drain trays are pitched towards the drain hole on the right side of the unit.
- **The leak is coming from the bottom of the unit in the center** - Check that the condensate drain is:
  - Sloped properly
  - Undamaged
  - Not plugged up

  If the problem persists, check the integrity of the lower condensate tray.
- **The leak is coming from the top right side of the unit** - Open the unit and check that the water flows correctly by gently pouring water on the internal exchanger.

7.3 The Louver does not Close Correctly

If the louver does not close correctly, check for foreign material which may be preventing the louver from closing. If there is, - remove it.

7.4 The Louver Opens in the Wrong Direction

If the louver opens in the wrong direction, check that the louver bracket is installed properly.

7.5 The Louver does not Move

If the louver does not move, replace the step motor.

8. FUNCTIONALITY

8.1 Overview

There are many complex algorithms to ensure that AIO® operates properly. An understanding of how the AIO® functions will help you determine if it is working correctly.

The following functions are covered in this section:

- Auto mode
- Power failure restart
- Cooling/heating changeover
- Cooling mode
- Heating mode
- Reverse cycle defrosting
- Electric resistance heat

8.2 Auto mode

Depending on the setpoint selected, AIO® automatically selects the operating mode (cooling or heating) 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.

Auto-Selecting Initial Mode
Depending on the setpoint selected, AIO® automatically selects the operating mode (cooling or heating) and the fan speed based on the room temperature, as follows. Note: If AIO® is actively in heating or cooling mode, it will wait until the compressor has stopped and then wait an additional 20 minutes 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

Auto-Selecting Initial Fan Speed
The initial fan speed is determined can be seen on the following table, and will readjust 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

8.3 Power failure restart

Depending on the setpoint selected, AIO® automatically selects the operating mode (cooling or heating) 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 decides the operating mode.

Timer
If the timer function is active when there is a power failure, the blackout time will not be taken into consideration.

Restarting delay
If the compressor was active before the blackout, it will start 180 seconds after power returns.

8.4 Cooling/Heating Changeover

AIO® 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, the cycle is reversed, and the inside receives hot air while cold air is exhausted outside. When switching from cooling to heating, or vice versa, the system changes, and there is a delay until the heat or cool starts working.

Compressor Delay
When switching the AIO® between modes or turning on and off, the compressor will wait 180 seconds until it is activated.

4-Way Valve
If the heating mode is switched to cooling, ventilation 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 will wait 120 seconds after the compressor has stopped until it is powered (reversing cycle), to enable heating.

8.5 Cooling mode

Cooling mode can be set from 61°F (16.1°C) to 83°F (28.3°C).

Operations
When in cooling mode, the compressor stays active the entire time and varies the speed to match the required cooling load. The supply air louver will remain open the entire time.

Shutdown
When the unit is turned off, the following steps will occur

1. The supply air louver will close.
2. The condenser fan will remain on until the condenser chamber has cooled down. This can range from 60 to 500 seconds.

8.6 Heating mode

In heating mode you can select a setpoint between 61°F (16.1°C) and 88°F (31.1°C).

Heat Mode Initial Start-Up
In heating mode in order to avoid cold air entering the room, AIO® starts up according to the steps below:

1. The supply air louver stays closed.
2. The compressor runs for 120 -500 seconds.
3. The internal temperature of the heat exchanger exceeds 86°F (30°C).
4. The supply air louver opens.
5. The supply air fan is activated according to the temperature of the coil, regardless of the selected fan speed. Once the temperature is stabilized, the fan speed will be based on the selected fan speed.

Heat Mode Operating
In heating mode, the supply air louver will close when the HPAC is not actively supplying hot air to the room, and reopen when hot air is needed.

1. When the room temperature is ≥ the set point +1.8°F (0.6°C), the compressor will stop (if it has been on for at least 3 minutes).
2. The condenser exhaust fan will remain active for an additional 30 seconds, and the supply air fan will continue to remain active until either the temperature detected by the evaporation probe falls below 86°F (30°C) or 30 seconds has passed, whichever occurs first.
3. In order 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). 5 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 supply air louver remaining closed.

Heat Mode Stopping
After AIO® has been turned off, the unit will go through the following steps:

1. The compressor will turn off.
2. The supply air fan works at minimum speed to dispose of residual heat until either the temperature detected from the OPT probe falls below 77°F (25°C), or 30 seconds of time has passed, whichever occurs first.
3. The supply air louver closes.
4. The external condenser fan will remain on for up to 120 seconds.

8.7 Reverse cycle defrost

During heating, AIO® periodically defrosts the outdoor heat exchanger coil based on the temperature reading of the ambient temperature probe (on the outdoor heat exchanger coil) and of the condensation probe (on the outdoor heat exchanger coil).

Scenario A To 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 is ≤ 21°F (-6.1°C) for 5 minutes.
2. The outside temperature is ≥ 21°F (-6°C) and ≤ 41°F (5°C), and the condensation temperature ≤ TeS for 5 minutes with TeS = X (outside temperature 18°F (-7.8°C) and X = 0.8 when the outdoor temperature < 32°F (0°C) and X = 0.6 when ≥ 32°F (0°C).
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 To 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 of 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 4-way valve is reversed.
5. The compressor restarts.
6. The compressor runs with a fixed speed and fixed EEV position, and the external coil.

Scenarios To End Reverse Cycle Defrost
The minimum duration of the reverse cycle defrosting is 120 seconds, after which any of the following three conditions for ending the defrost cycle are met:

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 of End Reverse Cycle Defrost

1. The compressor stops.
2. The 4-way valve goes in heating.
3. The compressor starts.
4. The condenser exhaust fan starts.
5. The internal coil temperature is checked, and when the temperature is ok, the supply air fan starts.
6. The supply air louver is opened.

8.8 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, in order to bring the room to the desired temperature as quickly as possible.

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

Resistance Heat Activation
The resistance heat strip will only activate when all of the following conditions are met :

1. The compressor has been running for 30 seconds.
2. The room temperature is ≤ 75°F (23.9°C).
3. The indoor heat exchanger is ≤ 111°F (43.9°C).
4. The room is < 3.6°F (-15.8°C) below the setpoint.

Resistance Heat Deactivation
The resistance heat strip will deactivate when any of the conditions are met :

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.

8.9 Condensate Disbursement System

The condensate disbursement system enables the AIO® to work more efficiently in cooling mode by throwing 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 4 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 mister. The mister, in turn, drips the condensate onto the heat exchanger. The safety float, which makes sure the drain pan does not overflow.

This system is only active in the cooling and dehumidifying modes.

The condensate disbursement system can be disabled, at which point the condensate will drain to the connected external drain pipe. To disable the condensate disbursement system, follow the instructions in Section 8.10.

Pump Operation
The pump operates continuously at varying speeds based on the float level. If there are more than 300 seconds of operations at maximum speed, 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 disbursement 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 will stop, and the condenser exhaust fan will work together with the condensate drain pump to evaporate the condensate until the condensate falls below the level of the float. An OF alarm will appear on the display.

8.10 Deactivating the Condensate Disbursement System

There is a thermo-actuator mounted on the lower drain of the AIO Wall Mounted unit, which can be set to be left open in cooling instead of closed, enabling the condensate to flow down the external drain instead of using the pump and disbursement system.

To deactivate the pump and condensate disbursement system, follow the steps below:

1. If the AIO Wall Mounted unit is not actively working (either in auto, heat, cool, dehumidify, or fan only), press the power button to turn the AIO Wall Mounted on, so that the display is active.
2. Press and hold the ❄ button until either **ds** or **En** appears on the display.
3. When the cooling mode button is pressed again, it will cycle between the various options, **ds** or **En**, each time it is pressed. Repeatedly press the ❄ button until **ds** appears on the display.
4. When **ds** appears on the display, do not press any more buttons. Wait several seconds for the system to memorize the change. When ready, the display will return to the default display by itself.

To re-enable the pump and condensate disbursement system, follow the steps below:

1. If the AIO Wall Mounted unit is not actively working (either in auto, heat, cool, dehumidify, or fan only), press the power button to turn the AIO Wall Mounted unit on, so that the display is active.
2. Press and hold the ❄ button until either **ds** or **En** appears on the display.
3. When the button is pressed again, it will cycle between the various options, **ds** or **En**, each time it is pressed. Repeatedly press the button until **En** appears on the display.
4. When **En** appears on the display, do not press any more buttons. Wait several seconds for the system to memorize the change. When ready, the display will return to the default display by itself.

Explanation of Codes:

ds = Pump is disabled

En = Pump is enabled

9. WARRANTY TERMS AND CONDITIONS

9.1 Ten Year Limited Warranty

This limited warranty is valid only in the Continental United States and only for the AIO® series heat pump which was purchased and installed in its original installation location. This warranty is only valid when the AIO® series heat pump air conditioner meets all of the following conditions:

- The device was installed by an INNOVA-certified installer.
- The installation was certified by an INNOVA technician prior to use.
- The AIO® unit is operated and maintained in accordance with the printed instructions in the user guide and in compliance with applicable local installation and building codes and good trade practices.
- A professional service provider ensures that the units are properly maintained.
- The customer or a professional service provider ensures that the filters are kept clean.
- Every installation project must be inspected before turning on the units. There are no exceptions. Self-certification photos of at least 5% or a minimum of 5 installations - whichever is greater - must be sent to INNOVA at selfcertify@Innova.co

Note: The warranty is only activated after review and approval of the self-certification and issuance of a certification.

9.2 What this On-site Warranty Covers

INNOVA, Inc. ("INNOVA") warrants your AIO® series heat pump air conditioner ("AIO®") against failure due to defects in materials or workmanship under normal use, beginning on the date of certification by the INNOVA technician for the warranty periods specified in the following sections:

9.2.1 Full Two-Year Warranty
For a period of two years from the date of certification by an INNOVA technician, INNOVA will replace any part of the AIO® which fails due to a defect in materials or workmanship. During this two-year warranty, INNOVA will provide, free of charge on-site, labor and related services and costs to replace the defective part. If you are located in an area where we do not have an INNOVA technician, we will ship you a replacement unit and arrange to pick up the defective unit at our cost.

Note: The replacement unit must be installed by an INNOVA certified installer. Controllers carry a two-year warranty.

9.2.2 Limited Two-Year Warranty on Parts
The limited two-year warranty on parts takes effect immediately following the expiration of the full two-year warranty period. This extended warranty ensures that the AIO® remains protected against defects in materials and workmanship for an additional two years, provided that the system has been installed, operated, and maintained according to the manufacturer's guidelines.

Note: The metal casing and the filter are not covered by this limited parts warranty.

During this period, any part covered by this warranty that fails due to a manufacturing defect will be repaired or replaced at no cost. Labor and other associated costs are not covered by this warranty.

9.2.3 Limited Ten-Year on Compressor
For the period of ten years from the date of certification by an INNOVA certified technician, INNOVA will replace the compressor or controller should it fail due to a defect in materials or workmanship.

During this limited ten-year compressor warranty, INNOVA will provide a replacement compressor or controller. Labor and other associated costs are not covered by this warranty.

9.2.4 Optional Extended Five, Ten, or Fifteen Year Comprehensive Warranty
A comprehensive extended warranty is available for five, ten, or fifteen years from the date of certification by an INNOVA technician. During this extended warranty, INNOVA will replace any part of the AIO® which fails due to a defect in materials or workmanship.

During this extended warranty period, INNOVA will provide, free of charge onsite labor and related services of repair and replacement If you are located in an area where we do not have INNOVA technicians, we will ship you a replacement unit at our cost and arrange to pick up the defective unit at our cost.

Note: The replacement unit must be installed by an INNOVA certified installer.

Extended warranties must be purchased directly from INNOVA within 90 days of installation.

Extended warranties do not cover wall controllers.

9.3 Exclusions and Limitations

The above noted warranties shall not cover:

- Installation of AIO®, setup of user controls, or adjustments to user controls.
- Labor costs after the second year.
- Replacement of fuses or circuit breakers, wiring, or plumbing connections.
- Damage to an AIO® unit where there is a corrosive atmosphere containing any damaging chemical such as chlorine or fluorine.
- Cleaning or replacing air filters.
- Removing AIO® from inaccessible locations.
- Correcting improper installations.
- Any AIO® not installed pursuant to applicable regional efficiency standards issued by the Department of Energy or other local rules and ordinances.
- Failure of AIO® due to acts of God, natural disasters, power failures, interruptions, brownouts or power spikes, or due to incorrect inadequate electrical service or failure of internet services or home networks.
- Any AIO® unit with an altered, missing, or defaced serial number.
- Damages or personal injury caused directly or indirectly by failure or malfunction of AIO® as a result of any cause, including natural disasters, accidents, misuse, improper wiring, or installation.
- Any consequential damages that result from the

replacement of cooling or heating equipment.

- Any cost to replace, refill, or dispose of refrigerant, including the cost of the refrigerant.

Failure to meet any of the following conditions will void the warranty:

- Services and repairs performed by an INNOVA technician.
- The unit is appropriate for heating/cooling the space in which it was installed, based on the published specifications of the unit.
- A declaration that the filter was inspected and/or cleaned every two months.
- Documentation that the coils were cleaned by a professional service provider every 18 months.
- Low-voltage thermostat wires have not been spliced.
- Use of a solid copper C-Wire.

All warranty work must be submitted to INNOVA through a tech ticket. Labor costs associated with unit replacements are not covered under the warranty. Additionally, all warranty work must be pre approved by INNOVA through a submitted tech ticket. Repairs by a third party will only be approved if INNOVA has approved the hourly rate in advance.

9.4 Warranty Disclaimer

THE ABOVE-REFERENCED WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING AND WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT ANY IMPLIED WARRANTY IS REQUIRED BY LAW, IT IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD(S) ABOVE. NEITHER INNOVA NOR ITS DISTRIBUTOR SHALL BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PRODUCTIVE DAMAGES OF ANY NATURE, INCLUDING AND WITHOUT LIMITATION, LOST REVENUES OR PROFITS, OR ANY OTHER DAMAGE WHETHER BASED IN CONTRACT, TORT, OR OTHERWISE FOR A PARTICULAR USE OR PURPOSE. NO ONE IS AUTHORIZED TO CHANGE THIS WARRANTY CERTIFICATE OR TO CREATE FOR US ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH THIS AIO® UNIT. NO OTHER WARRANTY, EXPRESSED OR IMPLIED, IS APPLICABLE TO THIS PRODUCT.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations as to how long an implied warranty lasts, so some of the exclusions and/or limitations listed above may not apply to you. This warranty gives you, the original purchaser, specific legal rights; you may also have other rights that vary from state to state. This warranty does not cover any additional responsibilities or obligations of INNOVA that are not expressly stated, herein nor does it apply to any accessory that is not a part of the AIO® unit, as included in the package by INNOVA.

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

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AIO® Wall Mounted and Wall Mounted Pro (Gen 1)
Maintenance and Troubleshooting Manual