# Important Notice

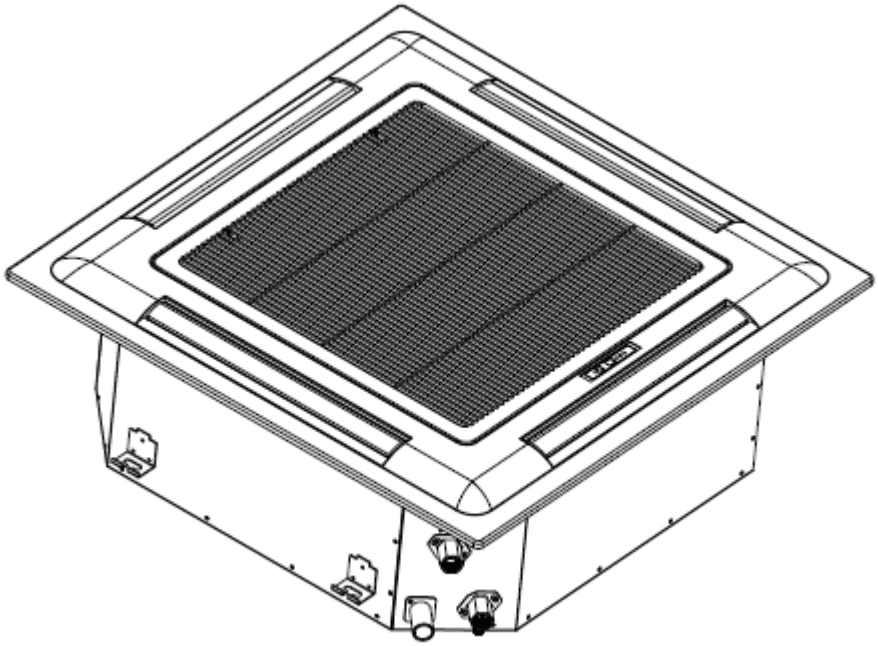
Make sure to visit the Chiltrix documents page at www.Chiltrix.com/documents/
And verify that you are using the most recent version of this manual.

We are constantly improving our manual as we add features/functions/ and based on feedback from customers.

High Wall/Cassette Version 1.0.9.2

# High Wall and Casset Fan Coil Installation and Operation Manual

Model Numbers: HW98, HW110, HW130, HW160, HW220, HW250



Model Numbers: CC68, CC100, CC120, CC160

HW/Cassette Version 1.0

# Table of Contents

# Safety Precautions

- If not strictly followed, it may lead to serious accidents such as personal injury or death.
- To prevent fire, explosion, or injury, these units should not be used when there may be flammable or corrosive liquids nearby. Combustible sprays shall not be used near air conditioners, otherwise fire may occur.
- Do not repair, dismantle, reinstall, or modify the air conditioner without authorization. Improper installation can lead to water leakage, electric shock, fire, etc. When repairing, reinstalling, or damaging the power cord, please call the service hotline. Ensure that only the specified power cord is used to connect the air conditioner. If the specified power cord is not used, it may cause electric shock, overheating, or fire,
- Do not let the air conditioning or heating blow directly to the body for a long time, and do not let the room temperature become too cold or too war,, otherwise it may cause discomfort or damage to health.
- Do not extend fingers, sticks, or other objects into the air inlet or outlet. Running fans may cause product malfunctions or damage, and even personal injury.
- Do not operate the indoor unit of the air conditioner, plug and unplug the power cord, or touch the outdoor unit of the air conditioner when your hands are wet, to avoid electric shock.
- Do not clean the air conditioner with water or pour water on it, as this may cause electric shock or fire.
- Do not place containers with water on the air conditioner, such as flower vases, as this may cause electric shock or fire. If the power cord is damaged, in order to avoid danger, it must be replaced by professionals from the manufacturer, its maintenance department, or similar departments.
- If the air conditioner cannot function properly, such as not cooling or heating, please call the service hotline. Do not use the air conditioner until the issue has been resolved.

If any abnormal phenomena are found (such as burnt smell, etc.), the power should be immediately turned off and service should be called to seek a solution. Continuing to use in this situation may cause damage, electric shock, and fire. Be sure to install a residual current grounding circuit breaker. Not installing a leakage grounding circuit breaker may cause electric shock or fire.

The power cord of the air conditioner must be connected to a socket with a grounding wire. Do not connect the grounding wire to gas pipelines, drainage pipelines, lightning rods, and telephone grounding wires. Poor grounding of the grounding wire can cause electric shock.

The chilled water in the unit can not go lower than 3°C, hot water can not higher than 70°C Make sure to use glycol to prevent freezing and cracking of any system regardless if it will be used in heating or cooling. If the unit is sitting up for a long period of time without being used, make sure to clean the filters before use.

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# Safety Precautions

•**Hire a Qualified Technician:** Mini-split installation, especially when dealing with refrigerant lines and electrical connections, is best handled by licensed and experienced HVAC technicians to ensure safety, efficiency, and compliance with local codes.

•**Obtain Necessary Permits:** Many areas require permits for any electrical, plumbing, or structural work that alters a home's systems. Check with your local building department for specific requirements before starting the project.

•**Disconnect Power:** Always turn off the power at the breaker panel before opening the cover, servicing the filter, or starting any work on the unit or wiring.

•**Use Correct Wire Gauges and Grounding:** Mini-split systems require specific wire gauges and proper grounding to ensure safe operation. Consult the manufacturer's instructions and local electrical codes for the appropriate wire size and grounding techniques.

•**Install a Disconnect Switch:** A disconnect switch allows you to quickly cut power in an emergency or for maintenance.

•**Consider a Surge Protector:** Electrical surges can damage the unit. Installing a whole house surge protector is a good way to protect your investment.

•**Secure Mounting:** Ensure the indoor and outdoor units are mounted securely to a stable surface according to the manufacturer's instructions to prevent accidents and noise.

•**Proper Clearance:** Maintain adequate clearance around both units for proper airflow and ease of maintenance, according to the manufacturer's specifications.

•**Avoid Obstructions:** Do not place the indoor unit in direct sunlight or near other heat sources, and avoid obstructions that could affect air distribution.

•**Plan the Drainage Route:** Ensure the drain line has a downward slope of at least 1/2 inch per foot towards the drain point, whether it's outside or to a nearby floor drain.

•**Install a Trap and Vent:** A proper drain setup should include a P-trap, which prevents backflow of gases, and a vent to ensure proper drainage.

•**Avoid Clogs:** Condensate drains can become clogged with dirt and debris, leading to water backup and potential damage. Regularly check and clean the drain line to prevent blockages.

•**Check for Leaks:** After installation, carefully check the unit and all water lines for leaks.

•**Understand and Follow Manufacturer's Instructions:** The installation manual provides model-specific instructions and safety guidelines that are critical to follow.

# Electrical Requirements

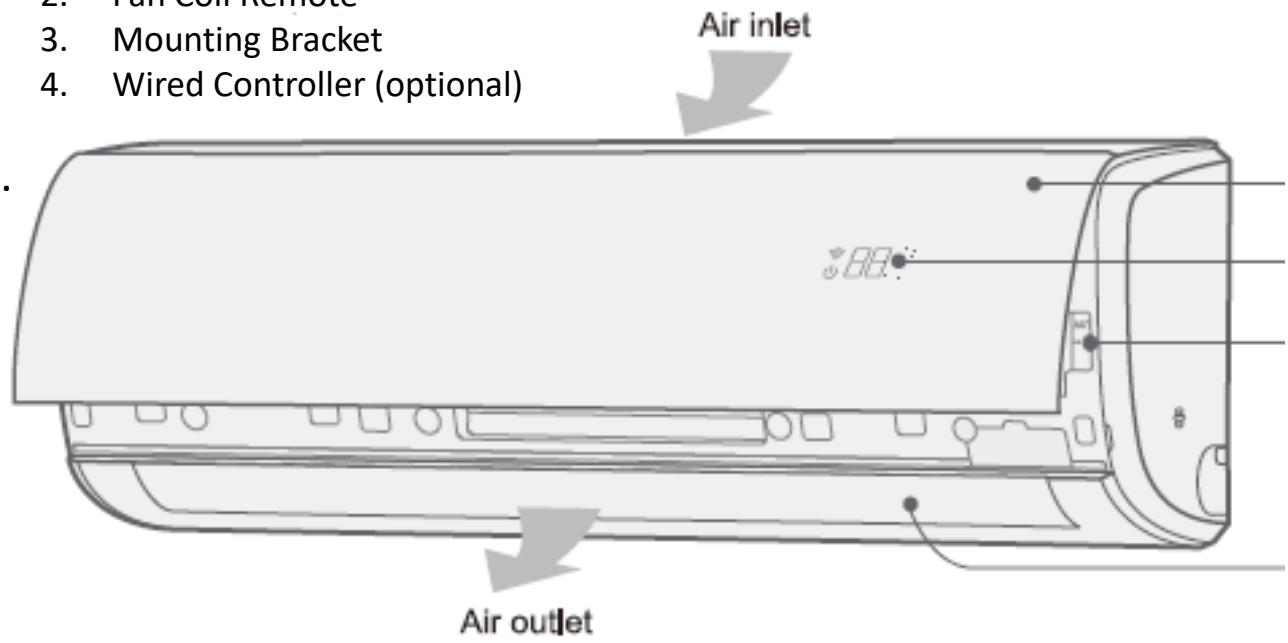
| Model | Voltage | Breaker Size |
|---|---|---|
| HW98, HW110, HW130, HW160, HW220, HW250 | 120Vac 50/60Hz | 10Amps |
| CC68, CC100, CC120, CC160 | 120 Vac 50/60Hz | 10Amps |

# High Wall Components/Box Contents

Contents:

1. Fan Coil Unit
2. Fan Coil Remote
3. Mounting Bracket
4. Wired Controller (optional)

1.

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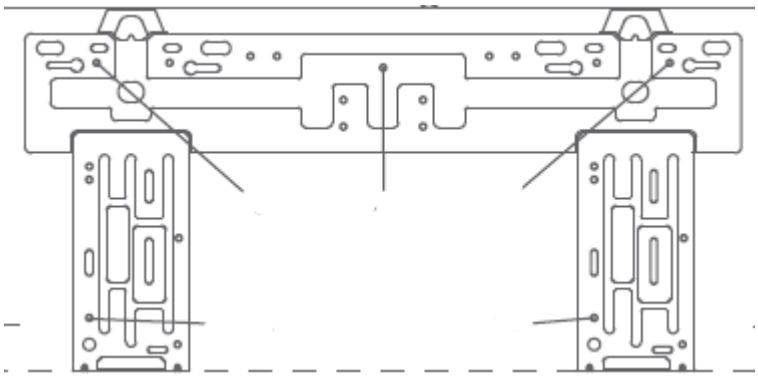

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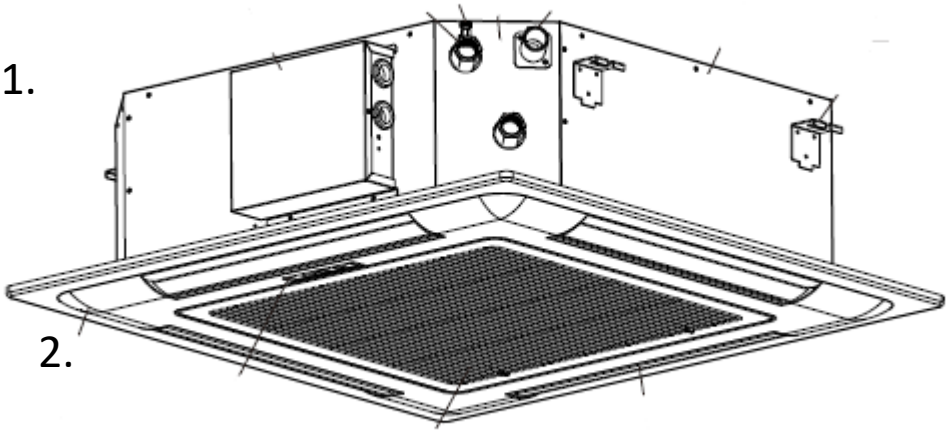
# Cassette Components/Box Contents

Contents:

1. Fan Coil Unit
2. Fan Coil Panel/Cover
3. Fan Coil Remote
4. Wired Controller (optional)

1.



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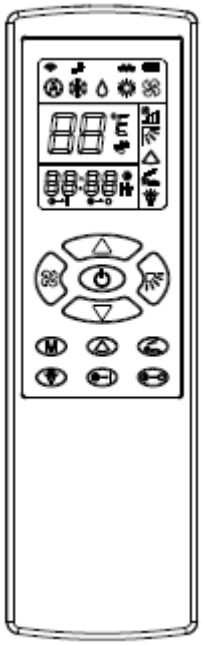


4.

# Installation High Wall

Installation must be carried out by qualified and trained personnel. Improper installation may lead to machine malfunctions, reduced lifespan, and even safety accidents. Installation must be carried out in accordance with effective national or local regulations.

**Installation diagram/Minimum Distance**

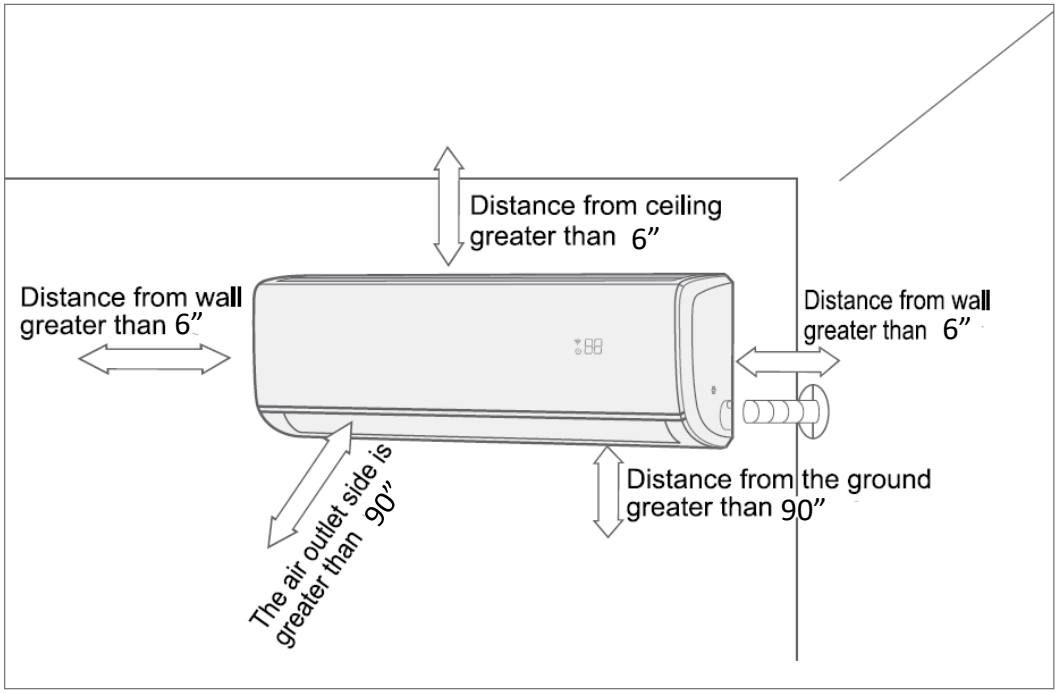
The installation of high wall fan coil units requires a certain amount of space to be reserved with walls or obstacles, which is to allow for proper air circulation and maintenance. The specific requirements are as follows:

Distance from wall greater than 6”

Distance from ceiling greater than 6”

The air outlet side is greater than 90”

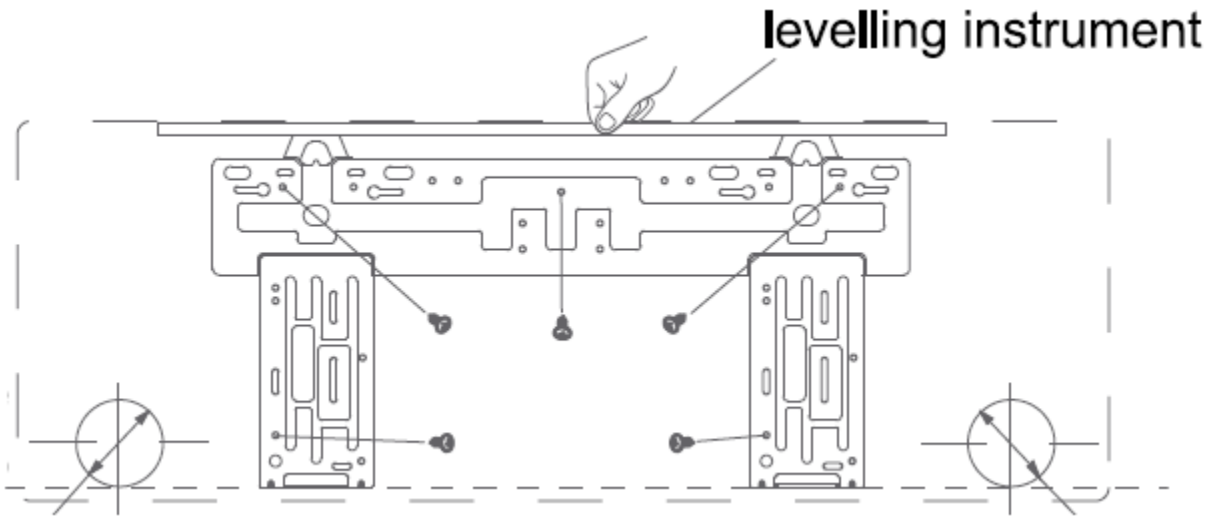
Distance from the ground greater than 90”




**Installation Procedure**

1. Find a suitable location for your fan coil. Make sure when installing the unit to position it level. (Indoor unit installation must be level, an unlevel installation is prone to water leakage)
2. As shown in the figure on the next page, drill screw holes into the stud and mount securely. There are multiple holes for different center to center. Use the correct mounting template for your specific unit in order to get the correct min distances. Mounting templates are located at the end of this document.
3. Electrical, water, and condensation lines will be on the left side of the unit if you are looking at the front of the unit. Shown in the mounting template at the end of this document.
4. All holes should be insulated and sealed from outside elements.
5. **ALL WATER LINES AND CONDENSATE LINES MUST BE INSULATED! Any uninsulated water line may be subject to condensation and may cause water intrusion where it is not wanted.**
6. Make sure the condensate drain has a slope to it in order for the condensate to drain out of the unit correctly. If there is not sufficient drainage, then the unit will NOT be covered under warranty.
7. After mounting, confirm if it is secure.

# Installation High Wall (continued)




Water/Electrical Connections

All water, electrical and condensate connections will attach to the unit in the middle of the unit. They will come out of the left of the unit as if you are looking at the wall. Or if you are looking at the back of the unit, then the connections will come out of the right side. Use the installation template to get a better understanding.

**Water Connections**

The connections on the back of the high wall fan coil unit are G3/4", these are NOT NPT fittings. These fittings require a gasket, do not use thread sealant on these threads.
Do not use tapered fittings on these threads.
Make sure to use a small amount of silicon grease or lubrication for the rubber washer to prevent tearing it when tightening.

The condensate tube is a 5/8" OD tube and a 17/32" ID tube. This can also be referred to as "Mini Split" condensate tube.

# Installation Cassette

Installation must be carried out by qualified and trained personnel. Improper installation may lead to machine malfunctions, reduced lifespan, and even safety accidents. Installation must be carried out in accordance with effective national or local regulations.

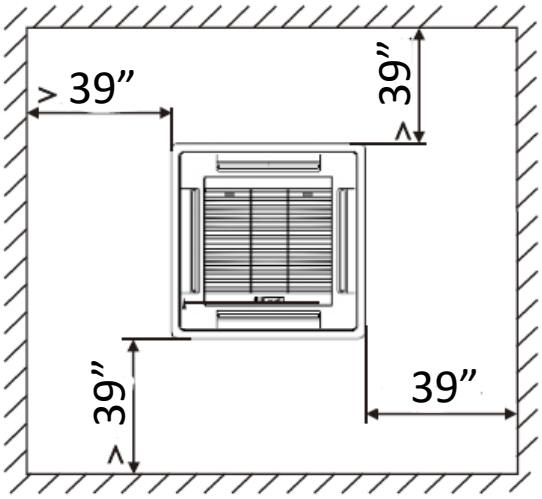
**Installation diagram/Minimum Distance**

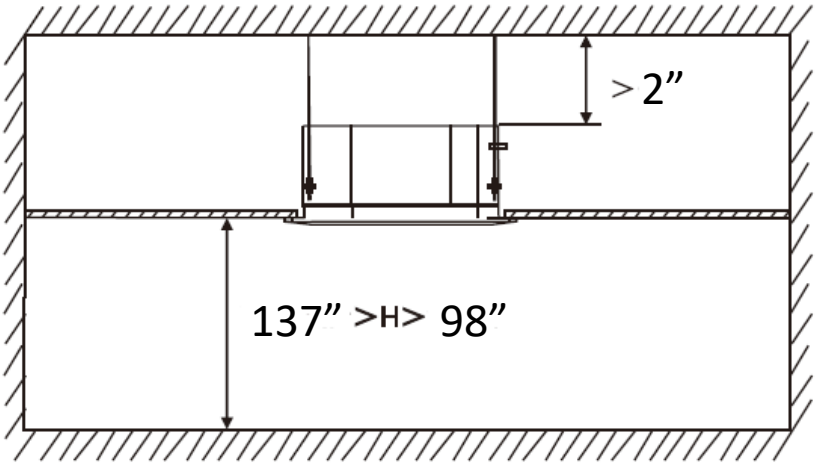
The installation of Cassette fan coil units requires a certain amount of space to be reserved with walls or obstacles, which is to allow for proper air circulation and maintenance. The specific requirements are as follows:

Distance from any wall greater than 39”

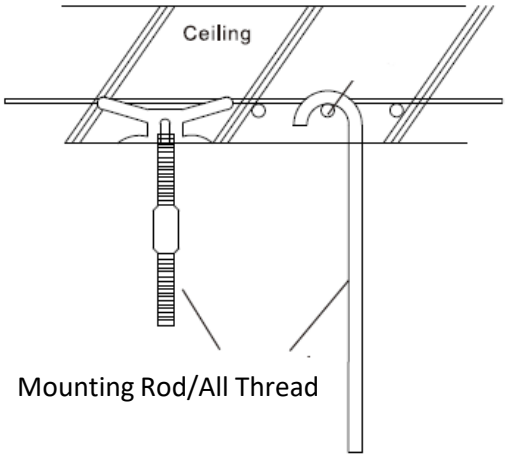
Distance from vertical obstruction greater than 2”

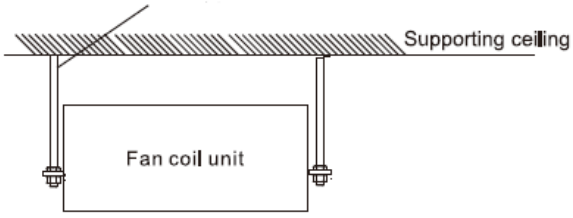
Distance from the ground greater than 98” but less than 137”




The unit should be mounted on a support that can handle 100lbs. Using a suitable bracket or all thread to suspend the unit into the ceiling. Below is a diagram of how the unit would be mounted/suspended.

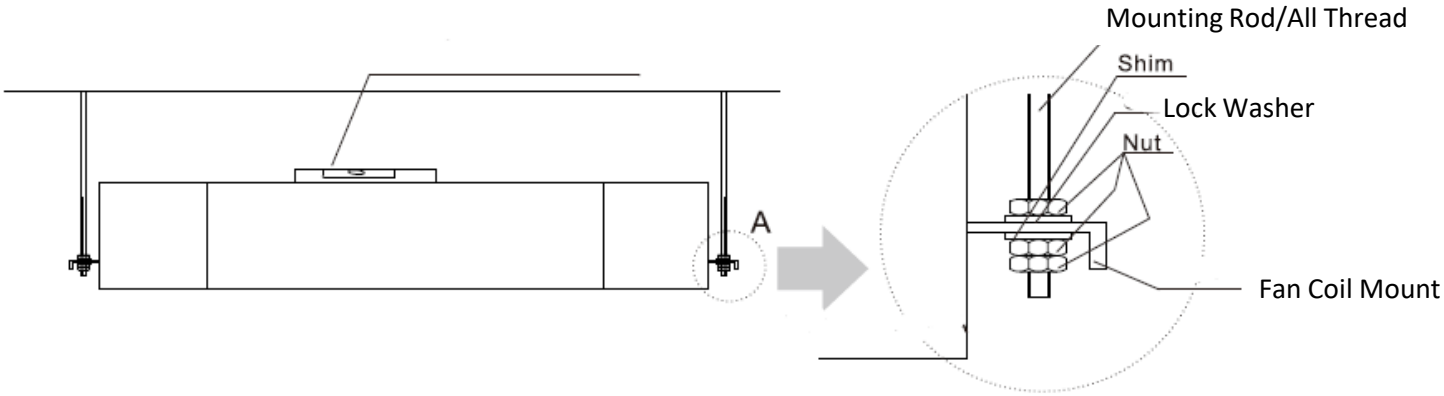


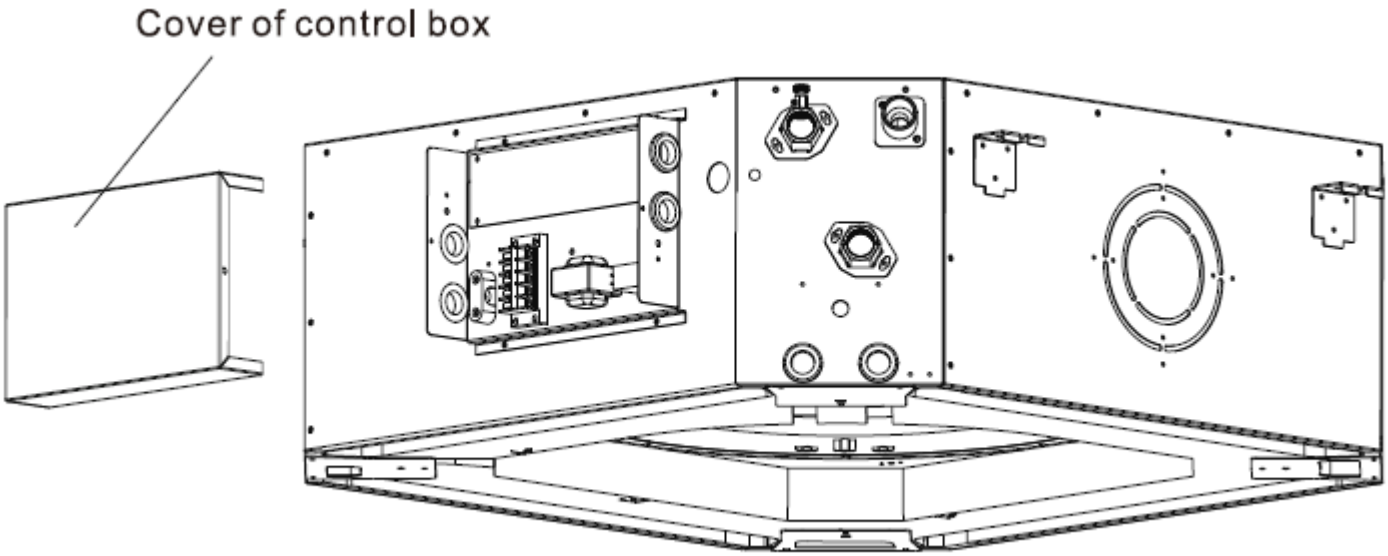




NOTE* Ceiling cassette units are normally installed in a drop ceiling. There are also options for installing ceiling cassette units into a standard residential ceiling with 10” or 12” joists with 24” or 16” centers as well. Please see https://www.chiltrix.com/high-wall-and-cassette-fan-coil-units/Cassette-Install-Supplement.pdf

# Installation Cassette (Continued)

Make sure to level the unit after initial installation. This is imperative for proper drainage of condensate. Install the nuts as pictured below to be able to level and adjust the unit after installation.

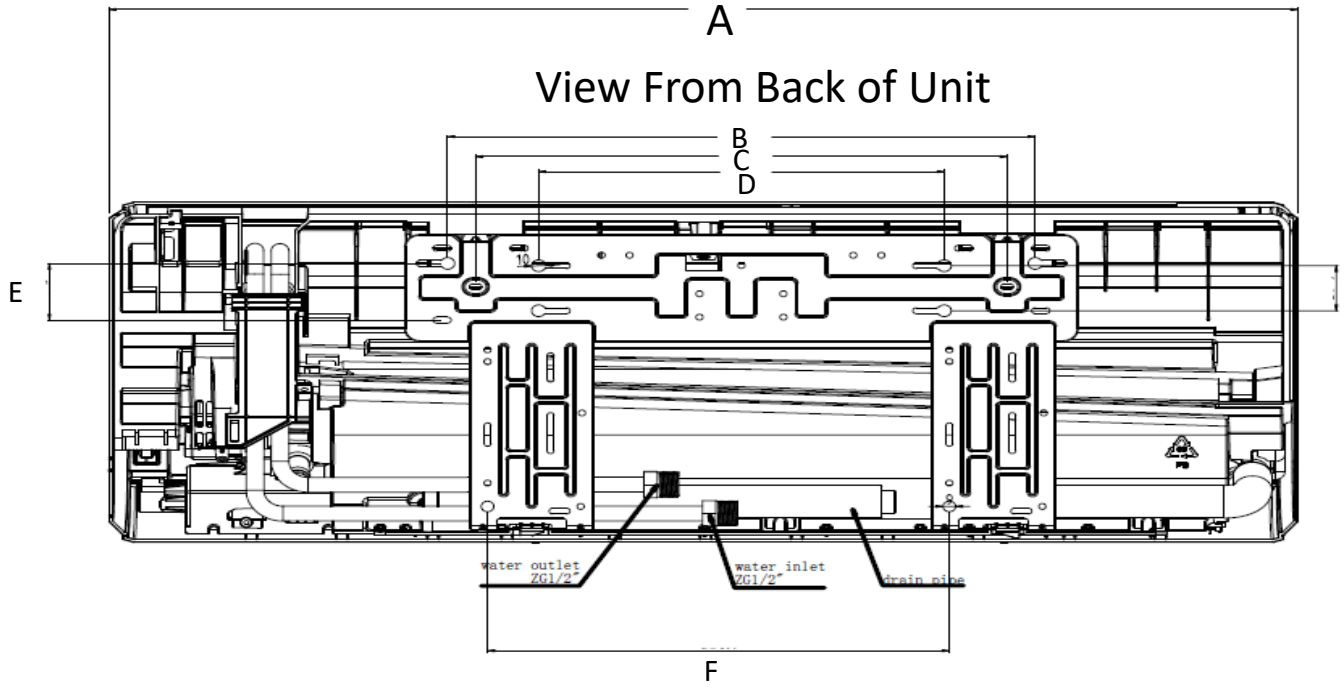


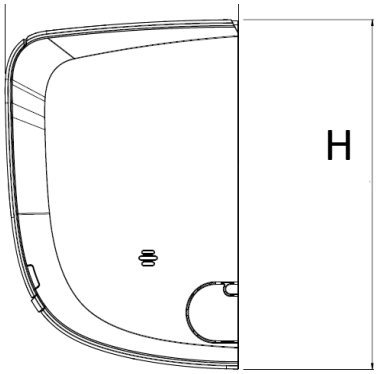



# High Wall Template/Dimensions

The High Wall Fan coil will use one of the following templates/dimensions in order to mount to the studs of the wall.

| Model | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| HW98 | 33.5” | 16.5” | 15.0” | 11.4” | 1.91” | 13” | 8” | 11.5” |
| HW110 | 33.5” | 16.5” | 15.0” | 11.4” | 1.91” | 13” | 8” | 11.5” |
| HW130 | 38.25” | NA | 18.78” | 15.5” | NA | 13.4” | 8.7” | 11.9” |
| HW160 | 38.25” | NA | 18.78” | 15.5” | NA | 13.4 | 8.7" | 11.9” |
| HW220 | 42.5” | 18.75” | 15.5” | 12.5” | NA | 22.6” | 9.8” | 12.9” |
| HW250 | 42.5” | 18.75 | 15.5” | 12.5” | NA | 22.6” | 9.8” | 12.9” |



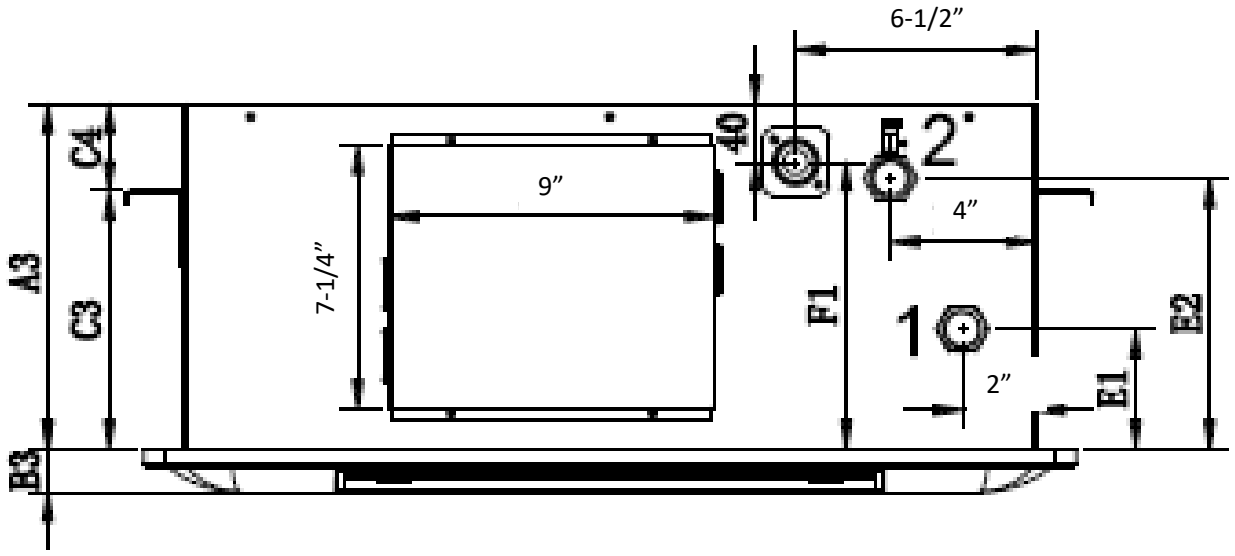



# Cassette Template

The Cassette Fan coil will use one of the following templates/dimensions in order to mount to the rafters/studs/mounting brackets in the celling.

| Model | A3 | B3 | C3 | C4 | E1 | E2 | F1 |
|---|---|---|---|---|---|---|---|
| CC68 | 9-1/2” | 1-1/8” | 7-1/4” | 2-1/8” | 3-3/8” | 7-1/2” | 7-7/8” |
| CC100* | 9-1/2” | 1-1/8” | 7-1/4” | 2-1/8” | 3-3/8” | 7-1/2” | 7-7/8” |
| CC120 | 9-1/2” | 1-1/8” | 7-1/4” | 2-1/8” | 3-3/8” | 7-1/2” | 7-7/8” |
| CC160* | 9-1/2” | 1-1/8” | 7-1/4” | 2-1/8” | 3-1/2” | 7-1/2” | 7-7/8” |

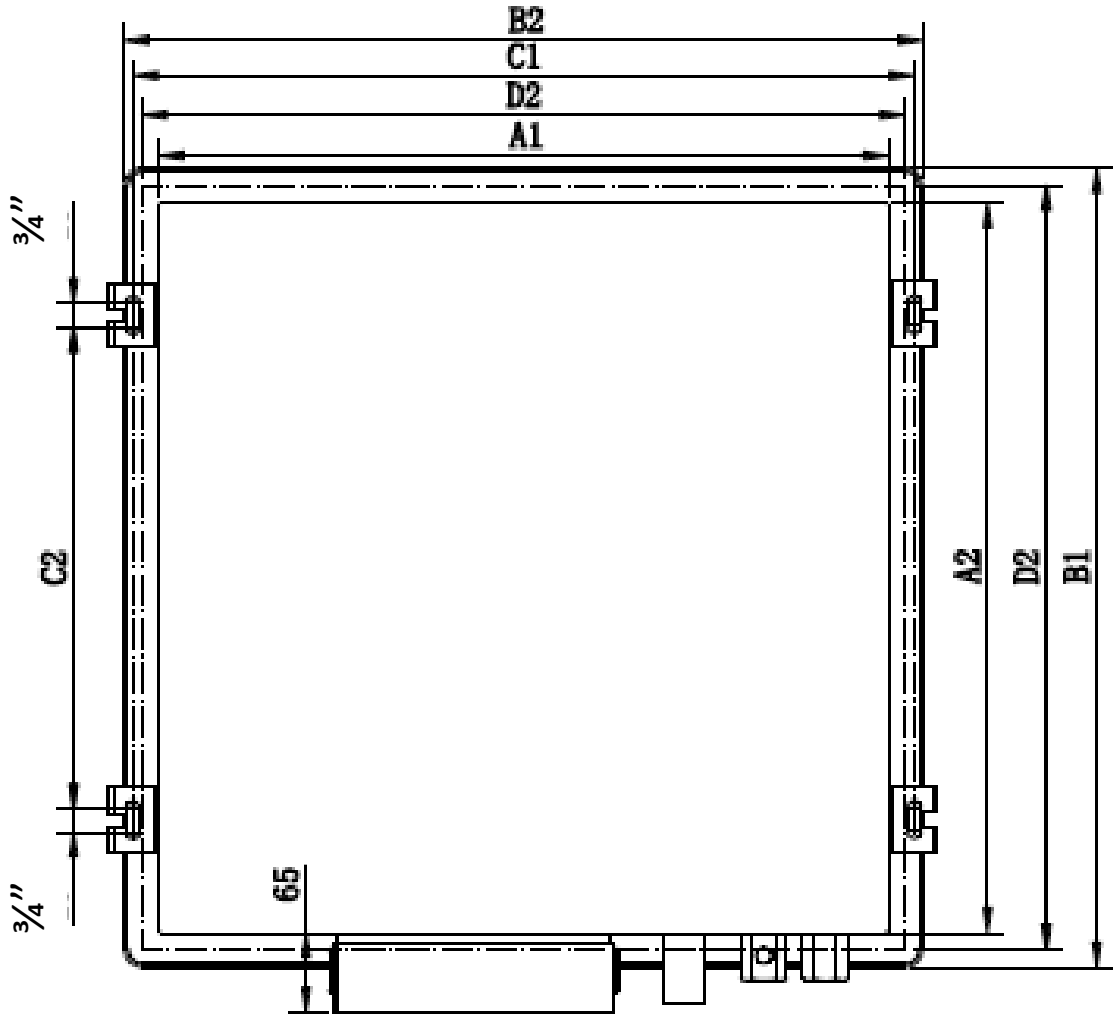
The condensate tube is 1” OD. It is a hard plastic that you can secure a hose/worm clamp onto to prevent the drain tube from sliding off.




*** The cc100 and the cc160 are not a stock item, they are both available as a special-order unit only. Please contact your sales rep to check the lead time.**

# Cassette Template (continued)

| Model | A1/A2 | B1/B2 | C1 | C2 | D1/D2 |
|---|---|---|---|---|---|
| CC68 | 23-1/4” | 25-5/8” | 25” | 15-5/8” | 24-3/8” |
| CC100* | 23-1/4” | 25-5/8” | 25” | 15-5/8” | 24-3/8” |
| CC120 | 23-1/4” | 25-5/8” | 25” | 15-5/8” | 24-3/8” |
| CC160* | 29-1/2” | 33-1/2” | 31-3/8” | 15-3/4” | 31-7/8” |

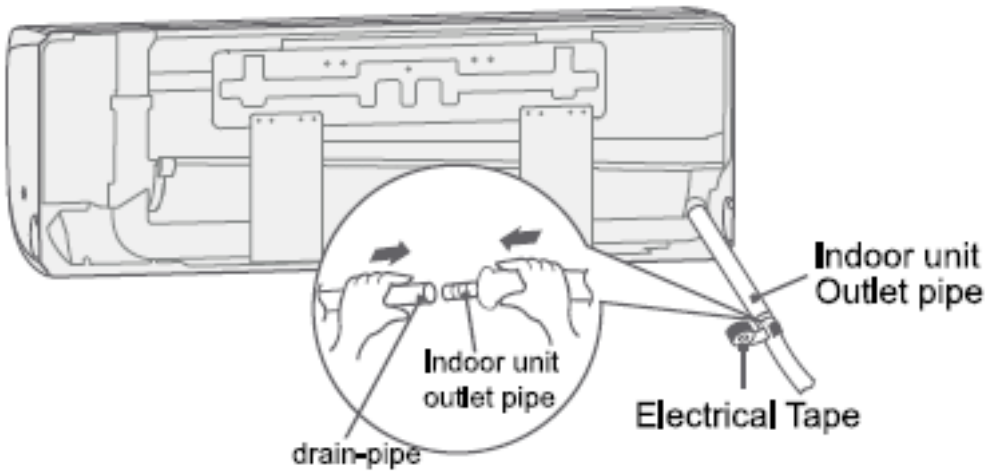


# High Wall Drainage/Condensate

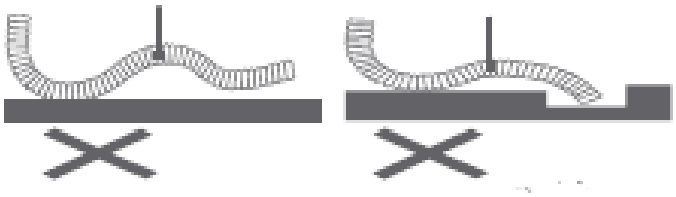
The High Wall unit does NOT have an internal condensate pump. It relies on gravity to drain any condensation it collects in the pan. When installing the condensate drain, make sure to have a slope of at least 1/2” per foot. When installing the drain line, make sure to fully insulate the condensate pipe. Make sure to have a smooth flow and do not add an unnecessary bends into the drain that may prevent gravity from draining the unit of condensate. Use electrical tape or another suitable joining practice to close the insulation.

If needed, there is room to install a small condensate pump behind the unit to pump the condensate out of the unit.

Note: the condensate pipe can be connected to either side of the fan coil unit.

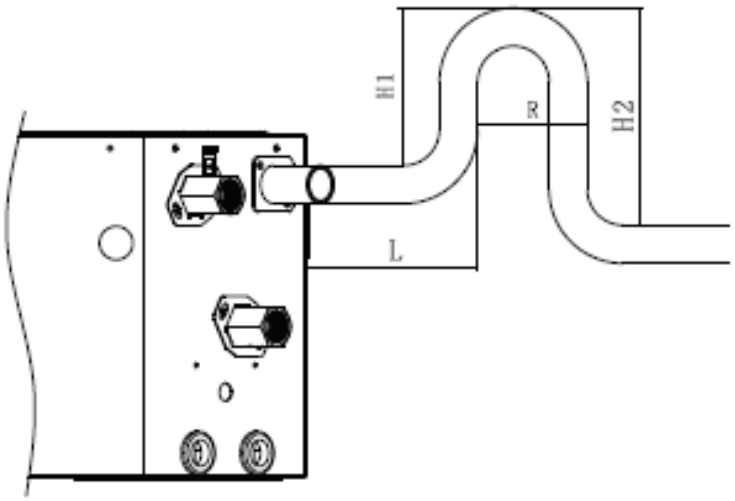



Do not bend the condensate hose as shown below.



# Cassette Drainage/Condensate

The Cassette Fan coil has an internal pump for condensate drain. When piping the drain for condensate, the unit should have a upside down “P trap” in order to prevent water from coming back into the unit. Make sure to fully insulate the condensation drain pipe. Use electrical tape or another suitable joining practice to close the insulation.

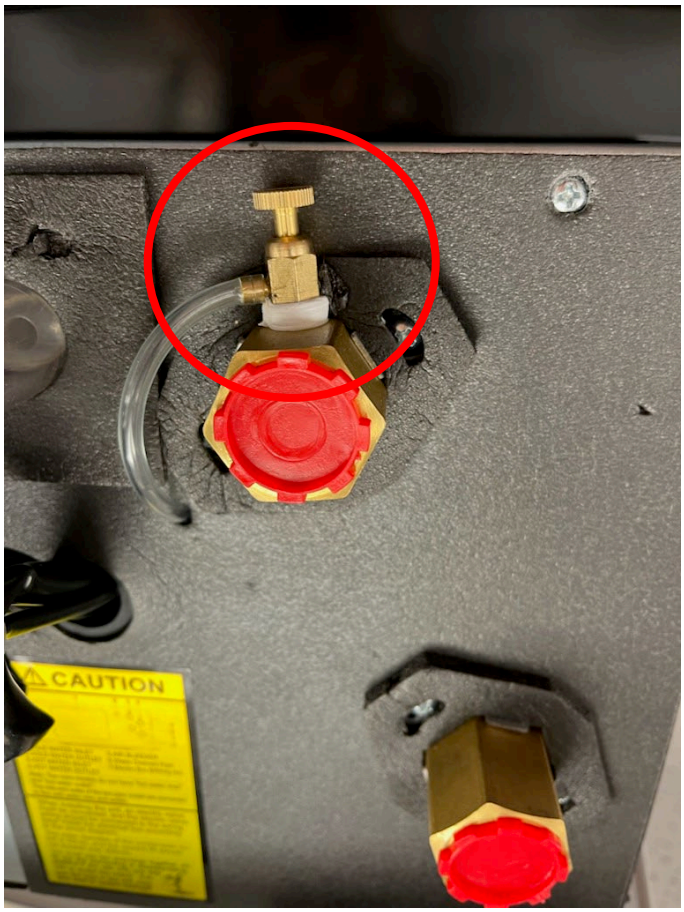



400≥H1≥150
300≥L≥100
200≥R≥100
H2≥100

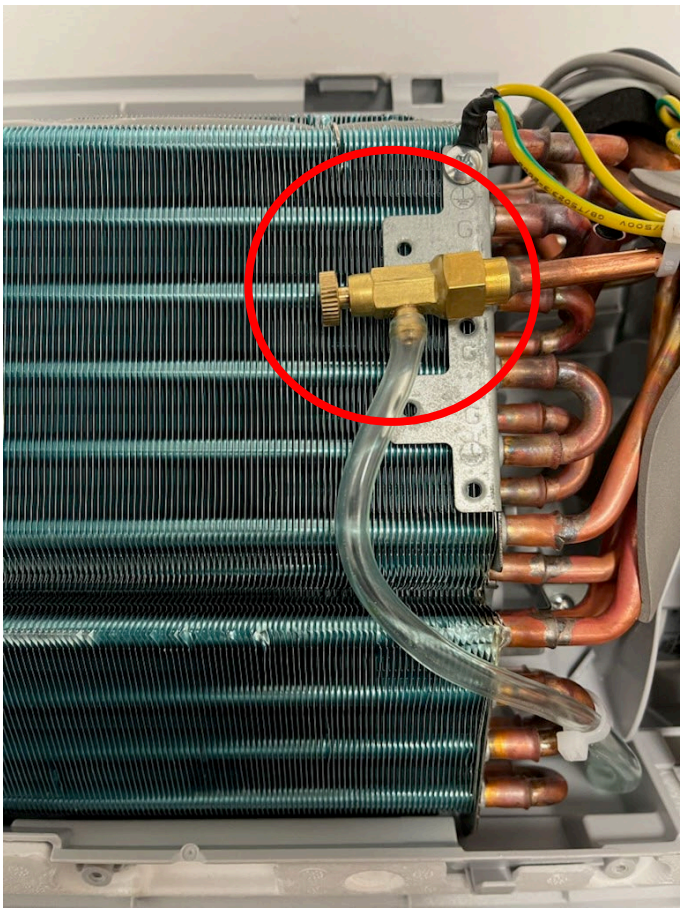
# Air Bleeder/Purging

After all of the connections are made on the units then you will need to purge the trapped air inside of the units. The high wall and cassette have air bleeders located at the highest point of each unit. Locations are shown below. Once the system is pressurized, slowly open the bleeder screw until you see a solid stream of water and no air.

## Cassette Air Bleeder




## High Wall Air Bleeder

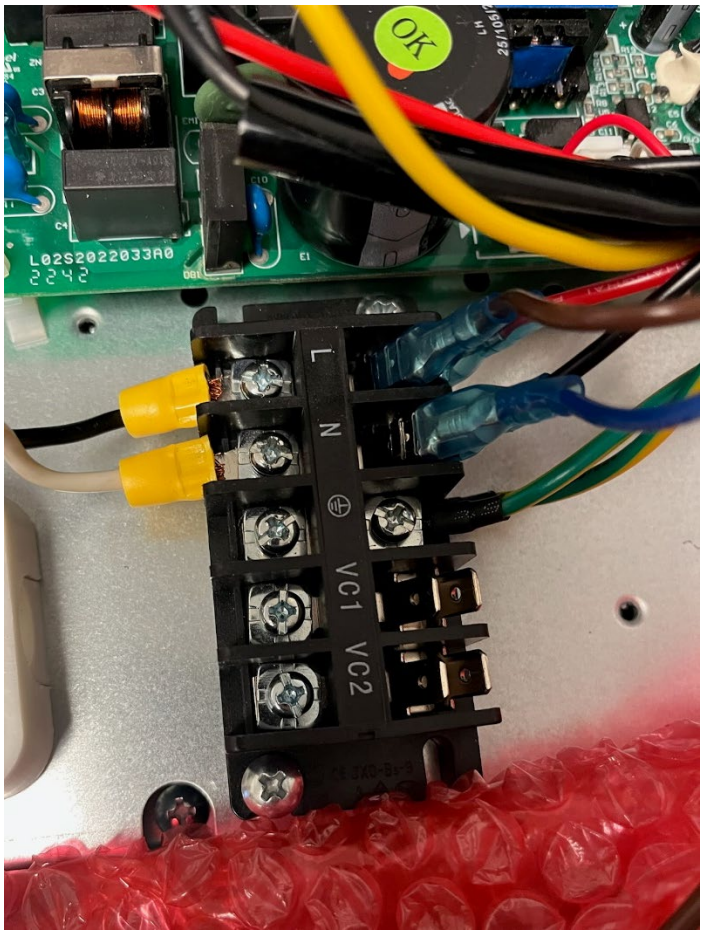


Be careful, do not over-tighten!

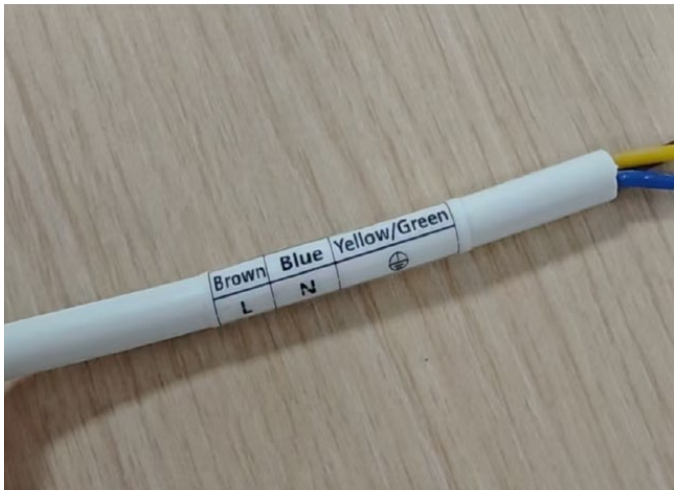
# Electrical Connections

The cassette unit has a terminal block in which you will need to use eyelet connectors to connect the 110-120vac to L and N and Ground. The image below shows the terminal block with L and N connected. You will still need a ground wire.
The high wall has a connector for 110-120vac

## Cassette Terminal Block




## High Wall Connection

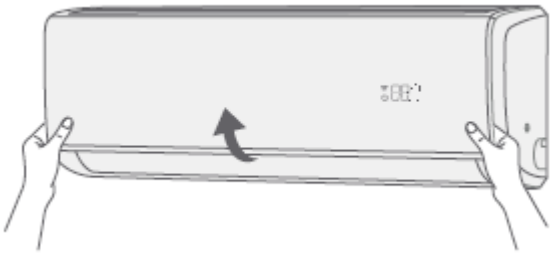


# Cleaning the filter High wall

To clean the filter, follow the instructions below to remove the front cover and expose the filter.

1. Grab the groves on each end of the front panel with both hands and pull in the direction of the arrow.
2. Push the air filter up slightly to remove it from its slots and then pull outward.
3. Use a vacuum cleaner to remove the larger particles. You can also rinse it under warm water and a mild soap to remove debris.
4. Reverse the removal process and make sure the filter is in its slot; the front panel should close easily with very little force.

1.



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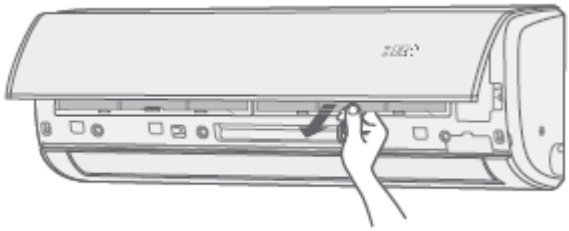
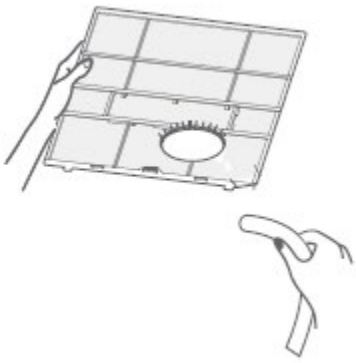
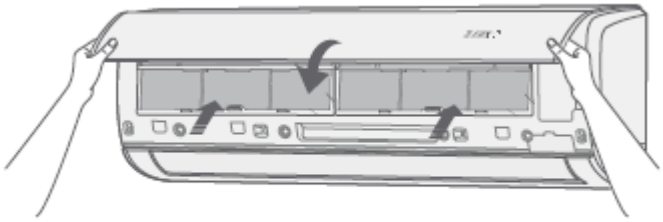


3.



4.

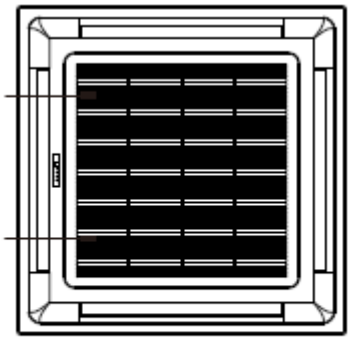


# Cleaning the filter Cassette

To clean the filter, follow the instructions below to remove the bottom cover and expose the filter.

1. There are two tabs that slide toward the inside of the unit to release the bottom panel.
2. The bottom panel will swing out, be careful as it can swing down abruptly.
3. Gently pull the filter out toward the bottom to remove it.
4. Use a vacuum cleaner to remove the larger particles. You can also rinse it under warm water and a mild soap to remove debris.
5. Reverse the removal process to install and make sure the filter is in its slot; the front panel should close easily with very little force.

1.



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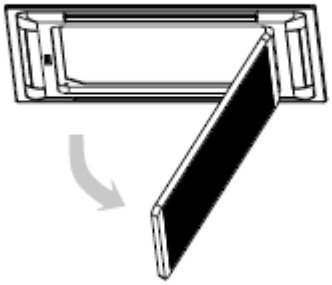
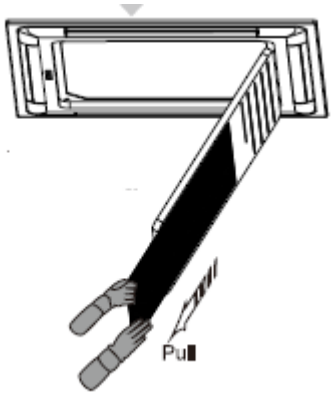
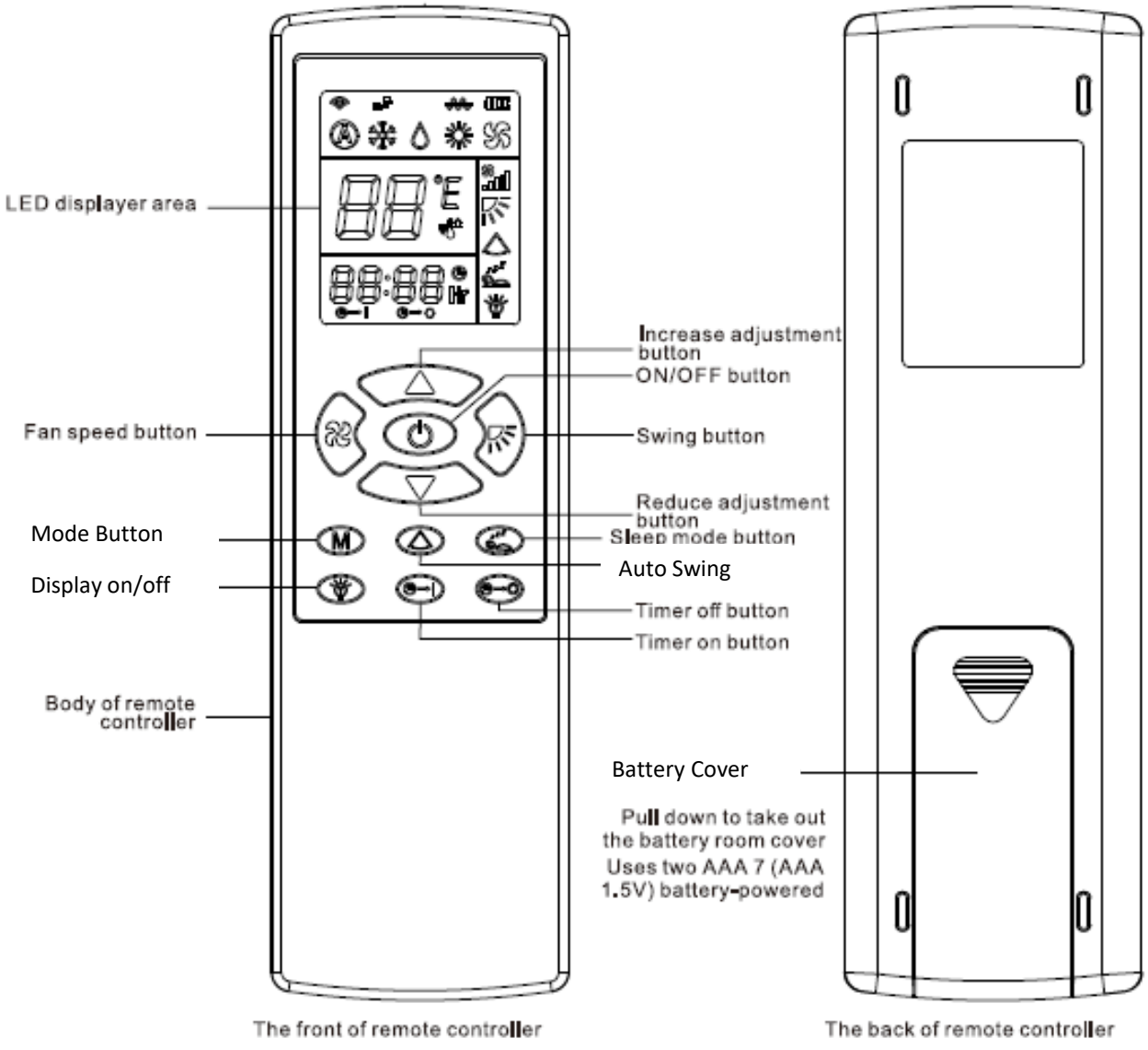


3.

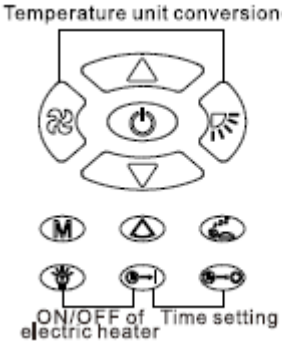


# Remote Operation

■ Remote control appearanceAnd button instructions

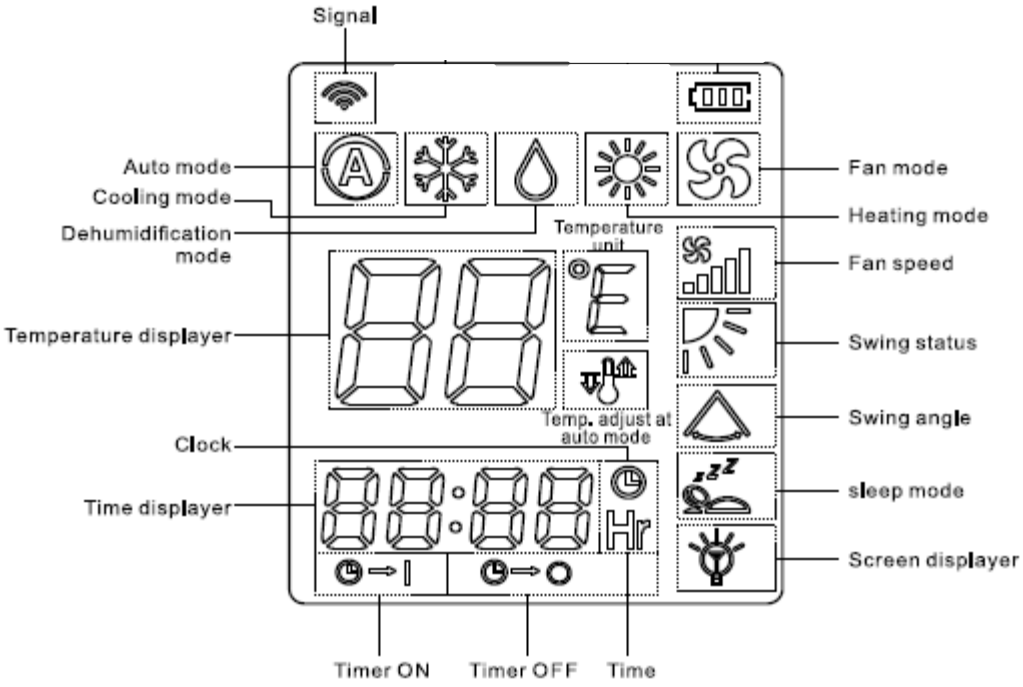



Temperature unit conversion(℃/℉ )




To change the Temp units, press the Fan button and the swing button at the same time.

# Remote Operation (continued)




Description of sleep mode:
Sleep mode can only be activated in cooling or heating mode.

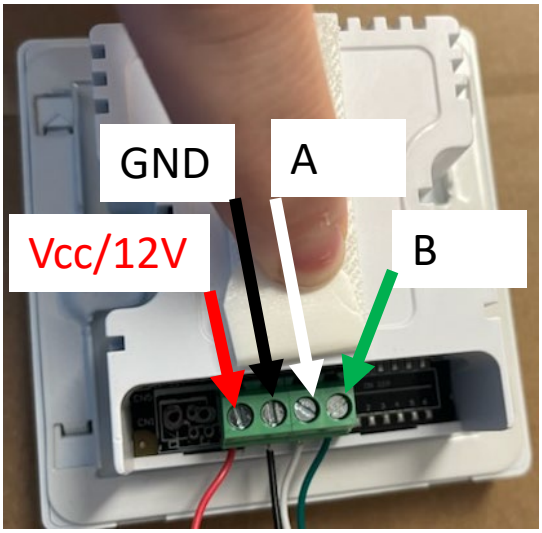
1. After ½ hour the temp setting will increase by 0.5*C in cooling mode, and decrease by 1*C in heating mode.
2. After 1 hour the temp setting in cooling mode will increase by 1*C, and decrease by 2*C in heating mode.
3. After 2 hours the temp setting in cooling mode will increase by 2*C, and decrease by 3*C in heating mode.
4. Powering the unit off or changing the mode will cancel the sleep mode.

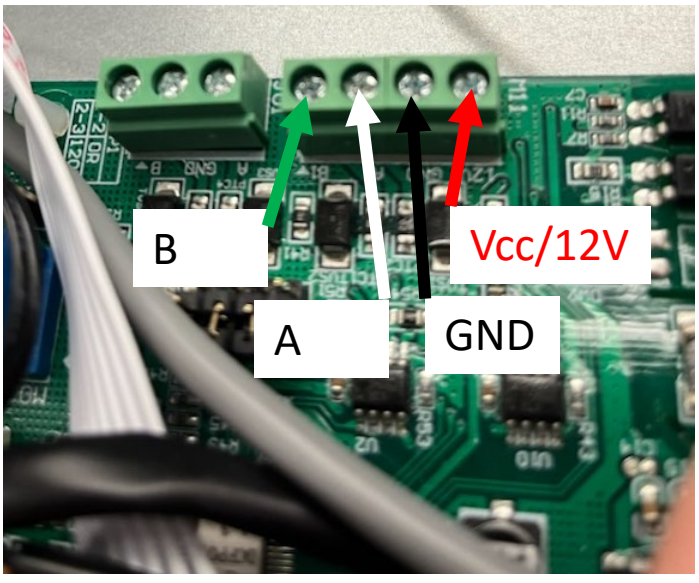
# Wired Controller Description/Install (Optional)

The wired HMI controller is an optional controller that can be mounted in a remote location to be used as central thermostat. The High Wall unit will require 1 controller per unit. The cassette has an option for controlling multiple fan coils with 1 controller, see Master Control With Wired Controller

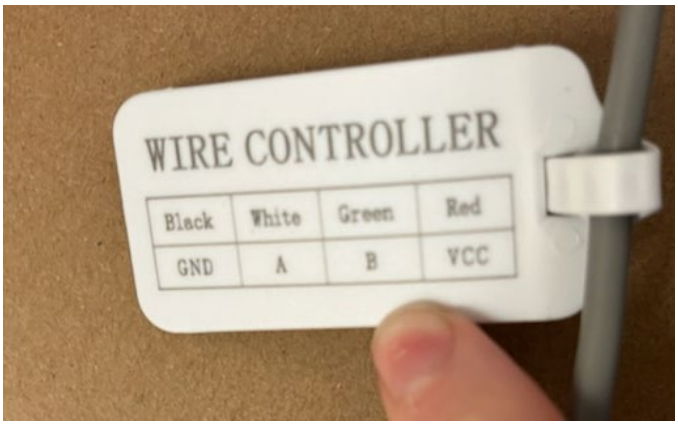
1. To install the wired controller, there are 4 wires that need to be connected.
2. A wiring diagram for the High wall and Casset is below.
3. The Cassette pcb uses connection point M11. You will have to run your own wires for this unit. 12v to 12v, GND to GND, A to A, and B to B.
4. The high wall pcb has a pig tail wire that connects to the wired controller. Both shown below.

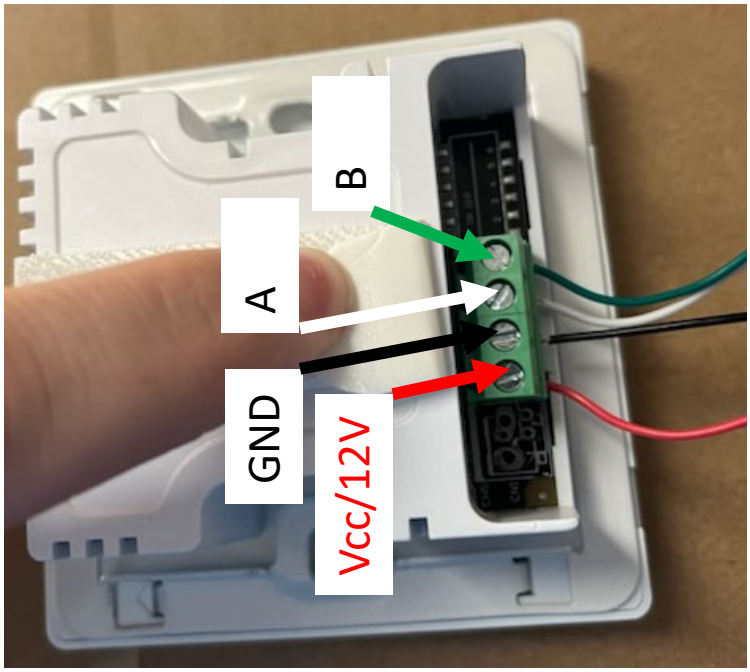
## Cassette




## High Wall

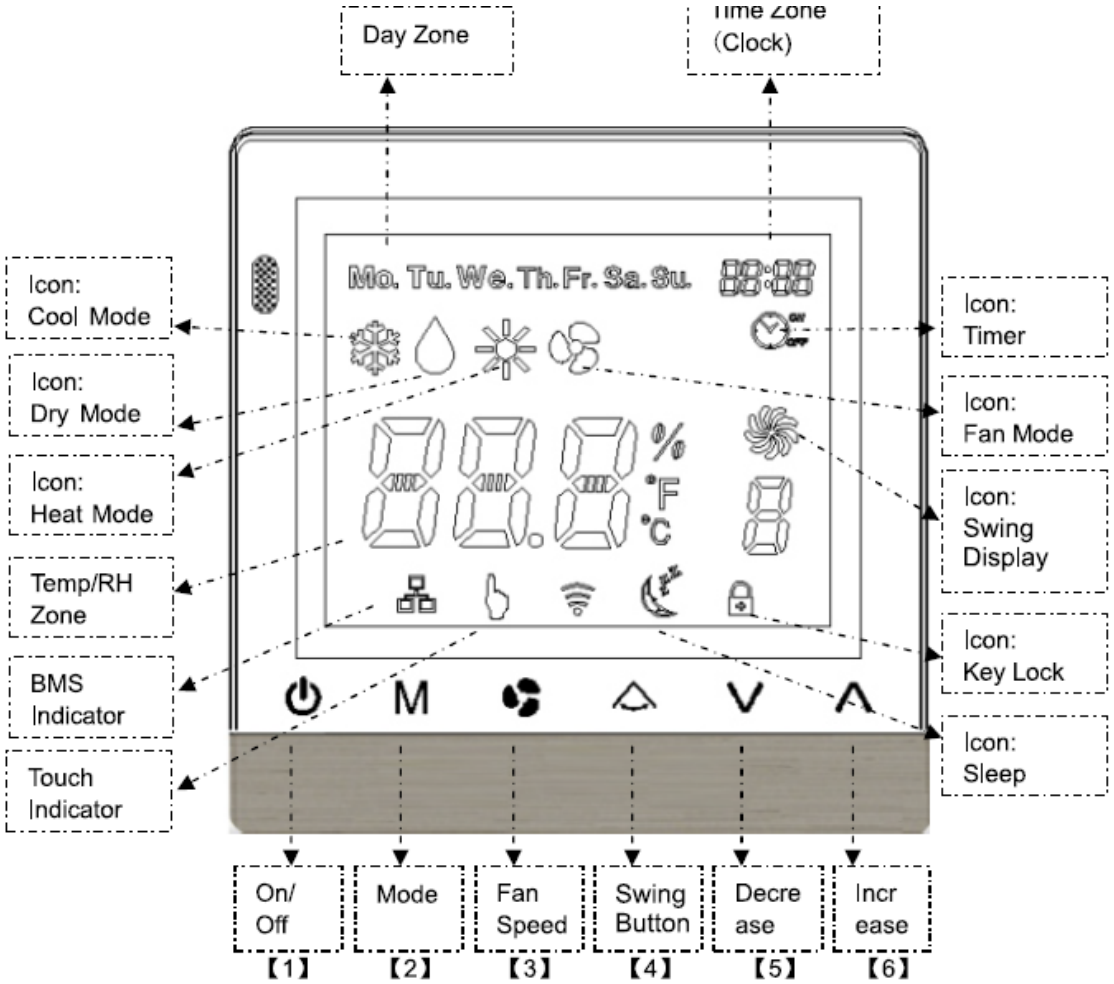


# Wired Controller Description/Install (Optional)

The wired HMI controller is an optional controller that can be mounted in a remote location to be used as central thermostat.

1. If the wired controller is locked, Key lock icon lit/buttons can't be pressed, then press and hold the increase and decrease button at the same time for 3 seconds. The Key lock icon will disappear.
2. To turn the unit on/off press the Power button (1)
3. To change the mode, press the M button (2)
4. To adjust set point, use the increase and decrease buttons. (5) and (6).
5. To change the fan speed, press the fan speed button once (4). It will cycle through its fan speed. Auto→1 speed→2speed→3speed→4speed→5speed



# Wired Controller Timer Settings

To set the time on the controller, follow the steps below.

1. Press and hold the swing button and the Increase Button at the same time for 3 seconds. The hour will flash.
2. Use the increase and decrease to set the hour. Once the hour is set, use the swing button to move to the minute portion of the timer. Use the increase and decrease to set the minute. You can now leave the controller and it will save its setting after no inputs for ~7 seconds.

The wired controller comes with a timer function built in. To enable it, follow the steps below.

1. Press and hold the swing button (4) for 3 seconds to enter the timer settings.
2. Once in the timer settings, use the Decrease (5) and Increase (6) to change the on time in hours. Press the swing button (4) to go to minutes, and then repeat the process for the minutes.
3. Press the swing button(4) to select the off time and use the increase and decrease to set accordingly. Press the swing button to select the off time minutes, use the increase and decrease to set accordingly.
4. To change the day of the week, press the Mode button(2) to change the day.
5. To cancel the timer, while in the timer settings menu, hold down the fan button for 3+ seconds and then release it and all timers should show “--:--”. All timers have been canceled.

# Troubleshooting High Wall

| Fault Code (same for wired controller) | Description |
|---|---|
| E1 | T1 Ambient temp sensor circuit open or short (can also be water temp sensor) |
| E2 | T2 Coil temp sensor circuit open or short |
| E3 | Swing Motor Malfunction |
| E4 | Fan Motor Malfunction |
| E5 | Prevents Cold air from blowing in Heat mode |
| E6 | Low Temp Protection |
| E7 | High Temp Protection |
| E8 (only on wired controller) | Communication failure between fan coil and wired controller |

For more troubleshooting, see the Highwall service manual.
Link available in the future

# Troubleshooting Cassette

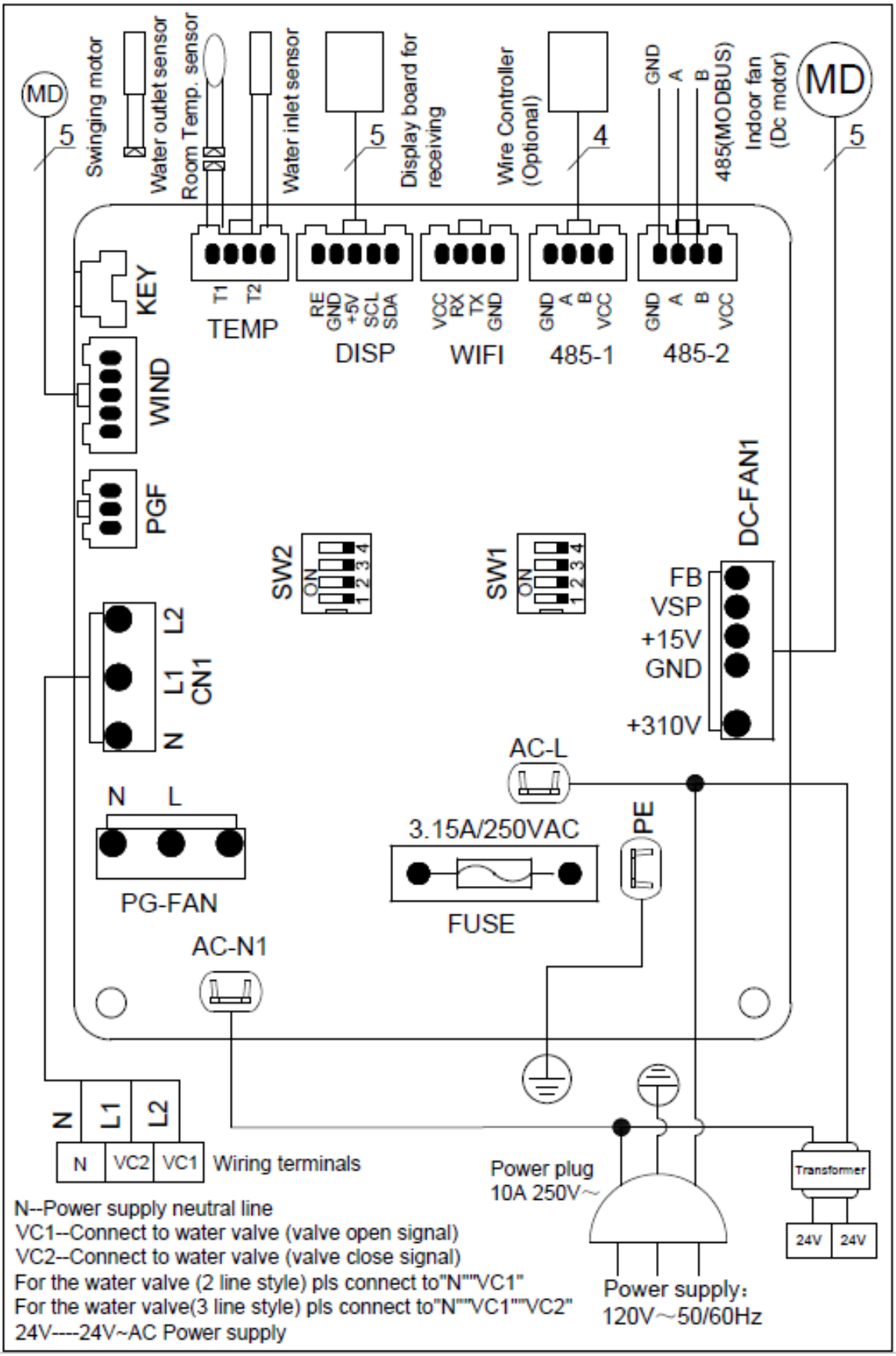
| Fault Code Wired Controller | Bottom Panel Flash Code | Description |
|---|---|---|
| 01 | Green=off<br>Yellow = Flashing<br>Red = off | Indoor ambient temp sensor error (open or shorted). |
| 02 | Green=Flashing<br>Yellow = off<br>Red = off | Water level switch triggered |
| 04 | Green=off<br>Yellow = off<br>Red = Flashing | Inlet Pipe temp sensor error (T2 on plug M09) |
| 08 | Green=off<br>Yellow = Flashing<br>Red = Flashing | Outlet pipe temp sensor error (T3, plug M10) |

Note: If there are two error codes at the same time then they will sum together.
Example: 01+04= 05, which means an error on the indoor ambient temp sensor and an error on the inlet pipe sensor.

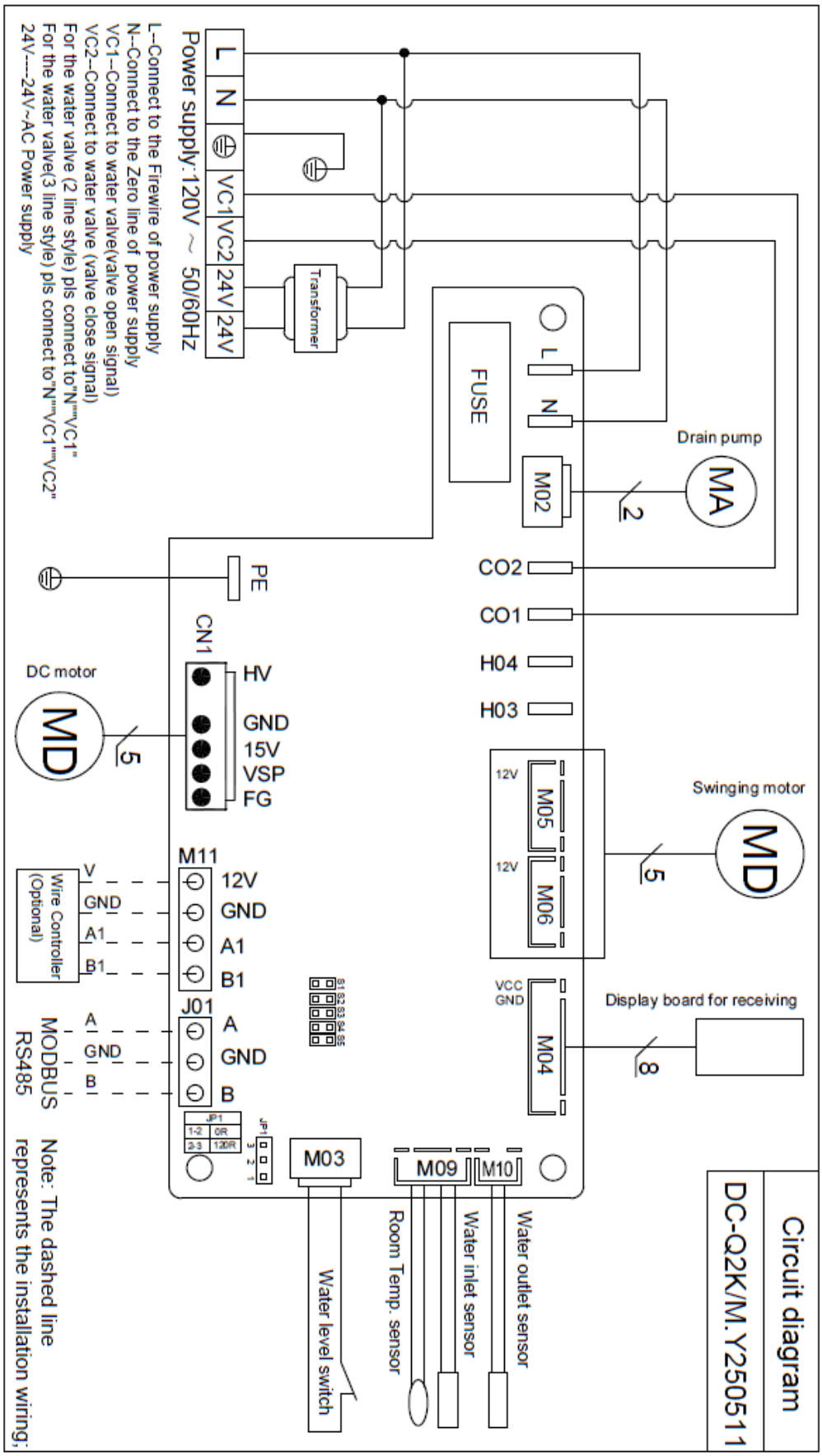
**Solid Green light means the unit is running fine.**

For more troubleshooting, see the Cassette service manual.
Link available in the future

# High Wall PCB



# Cassette PCB

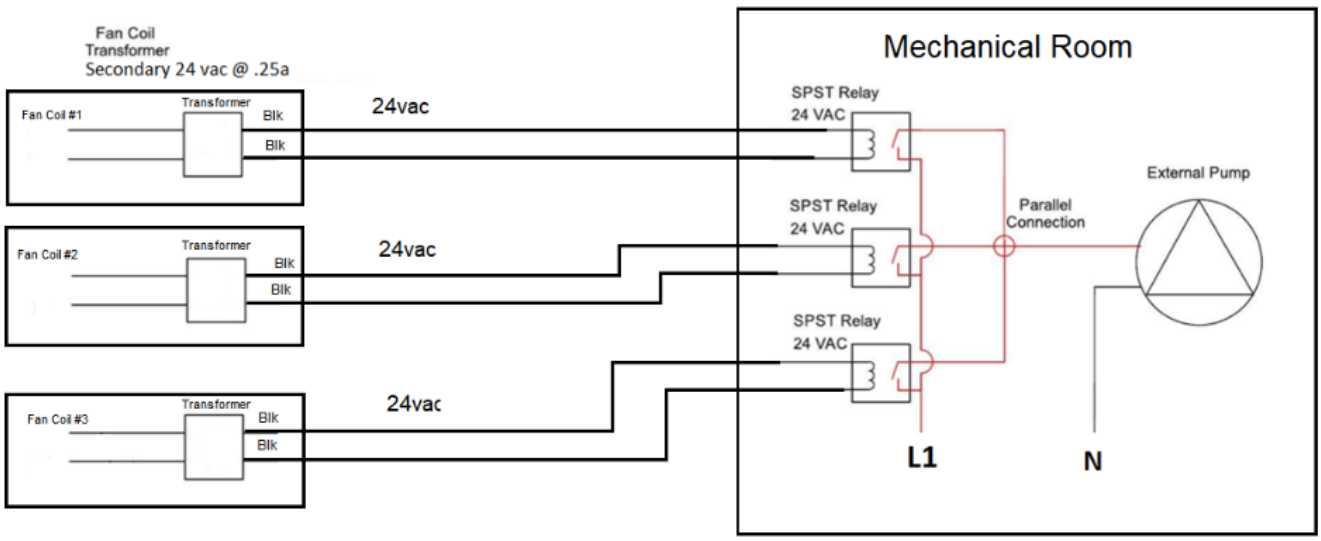


# Symphony

Both HW and CC units come with a 24vac transformer that is wired by default to be powered on at all time when power is connected to the fan coil unit. This allows the unit to provide power to an optional *Symphony*™ Controller.

If you are not using Symphony controller and you want the unit to output 24 vac to control a valve or pump via relay only when there is a thermostat call for fan operation, there is a simple optional wiring adjustment explained on the next two pages

Multiple fan coil units on the same loop:
Assuming you have wired the transformers for relay operation, one common way to wire fan coil units that are all served by the same pump or valve is shown below. In this example, if all fan coil fans are off, pump will be off (or valve closed). If any one fan coil needs to operate the pump will start (or valve opens) and all fan coil units will get flow.



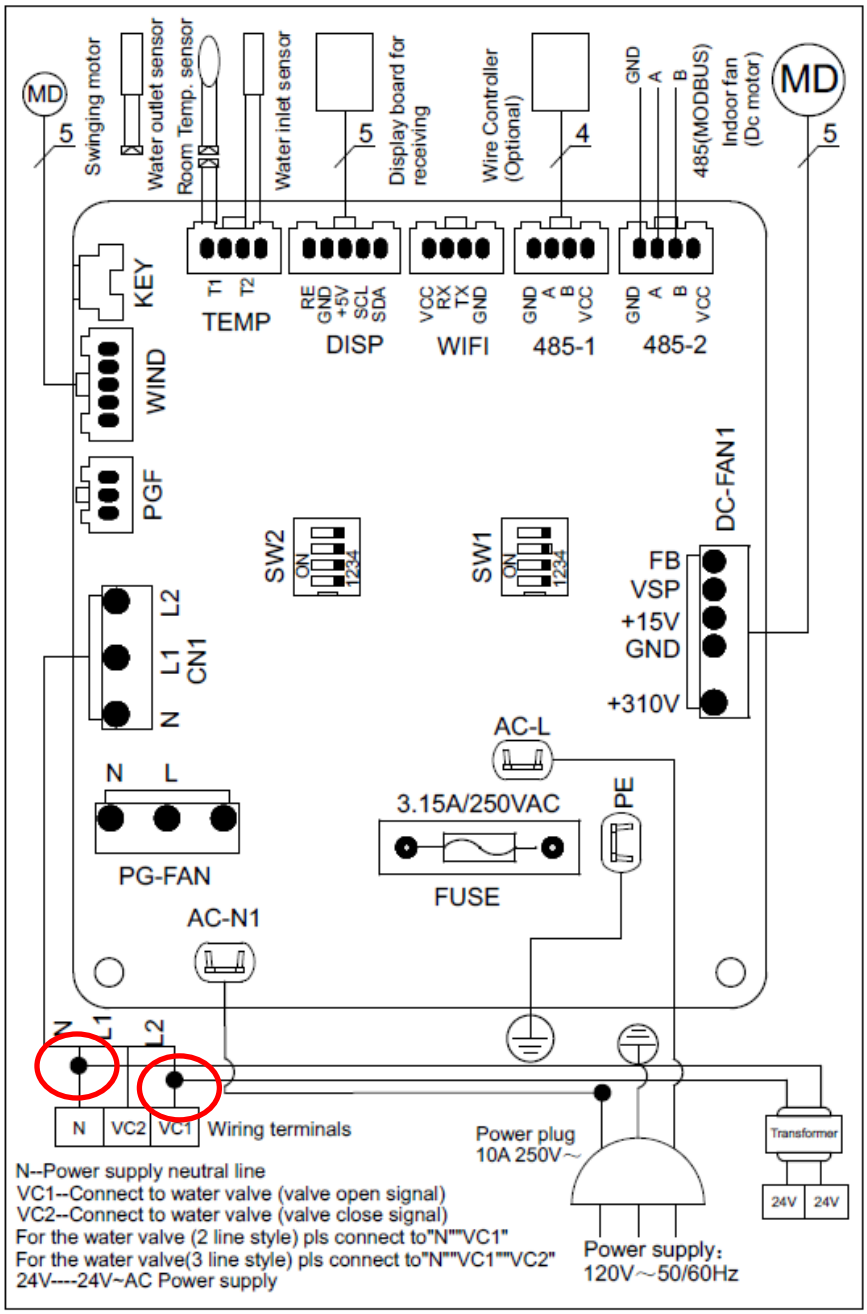
# Optional Transformer wiring

**To rewire the transformer to only come on when the unit is calling for heat/cool operation, you must connect the primary side of the transformer to VC1 and N.**

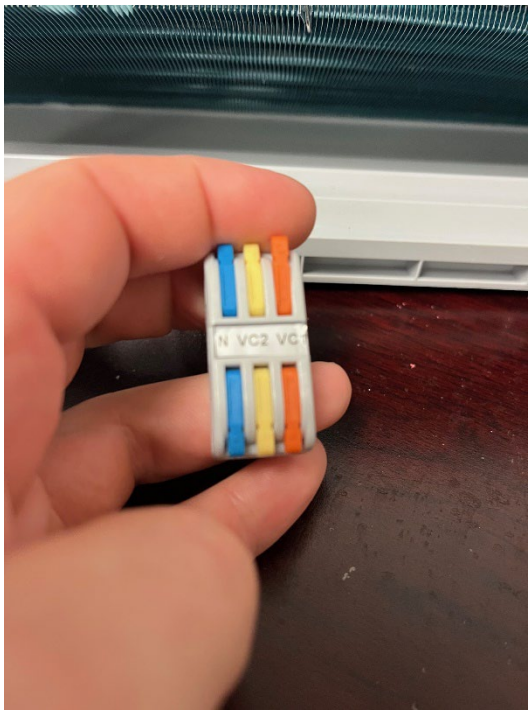
The diagram for the high wall is below.

The diagram for the cassette is on the next page.

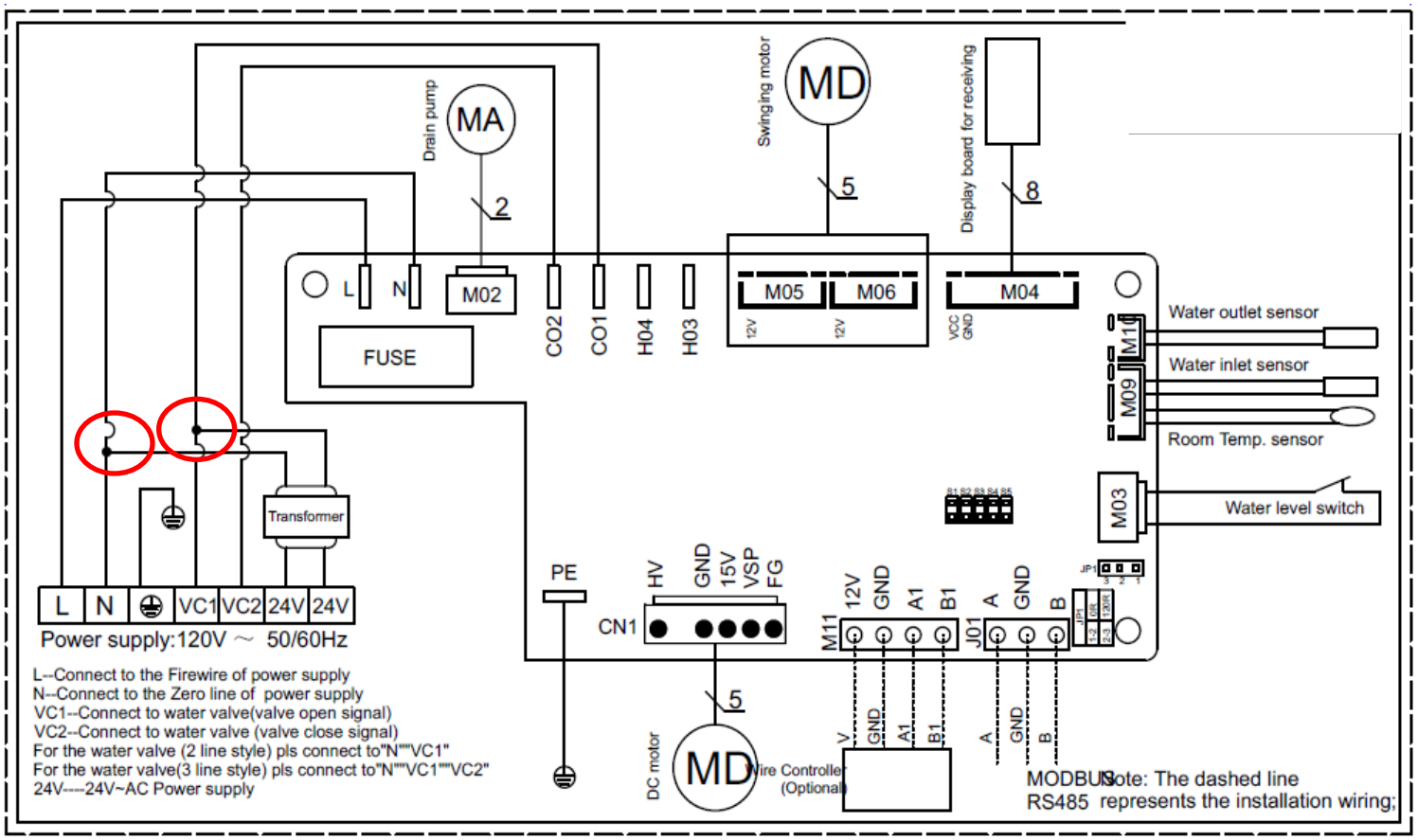
## with 24V/1A transformer



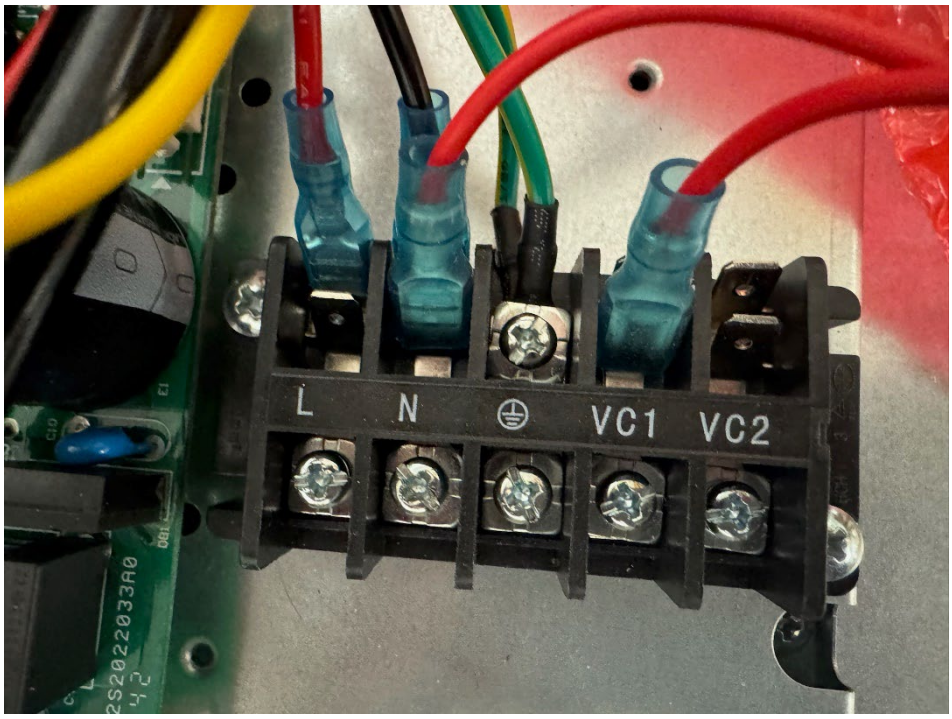

Shown below is the wire pig tail that is connected to VC1 and N. You may use this to connect to the transformer. This is only for the high wall, the cassette uses a terminal block.



# Optional Transformer wiring(continued)




with 24V/1A transformer




Transformer shown with red wires.

# Master Control with Optional Wired Controller

**If you plan to do this please let your sales rep know so what we can pre program the unit number for each fan coil!**

The wired controller has the ability to control multiple cassettes at one time by sending a master command to all the units.
To install this, first pick the unit in which you want to wire the wired controller to. It does not matter which fan coil you pick however you will need to wire them as shown on the next page so keep that in mind when wiring the unit up.

1. Once the units are connected and powered. Set the desired mode, set point, fan speed on the wired controller. To do this, make sure that the wired controller is commanding the first unit on, use the increase or decrease button to change the set temp. Use the mode button to change the mode. Use the fan button to change the fan speed.
2. Once all of those are set, hold the power button down on the wired controller for about 3 seconds, the set point, mode and fan speed you programed should show up.
3. At the top right there will be a number 1-64 or ALL. The numbers correspond to which unit you are trying to command. Or you can select ALL to command all the cassettes. Use the up and down arrows to select which unit you wish to command.
4. Once you select which unit to command, press the power button to send the command out to the units. The number or ALL will flash and then go back to solid. At that point you can press the mode button which will bring you back to the home screen that shows temp, fan speed and mode.
5. To stop all the units, press the mode button to go to the “blank” screen which commands the units off. At that point, hold the power button down for 3 seconds. Then press the power button once to send the command to stop the units.
6. To get back to the “blank screen” press the mode button once to return to normal operation.

# Master Control with Optional Wired Controller (continued)