



Compact Comfort by SAI HVAC VAV12 Controls Install Manual Series 2



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SAI HVAC
Phone 1300 844 429

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This Technical Manual describes the installation and operation of the Compact Comfort VAV12 controls system and air conditioning maintenance for the installer.

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1. About your VAV12 Controls System

1.1 Compatibility

A User Interface (UI) has been developed to simplify the commissioning, use and change of operating parameters for the SAI HVAC range of products. A click of “Other Systems” at the top of the user page switches between the various SAI HVAC systems.

1.2 Simple and Upgradable

The VAV12 architecture allows for remote upgrade of many features so as development continues new features can be added via an internet connection.

1.3 Plug & Play

You can also add one of the other SAI HVAC systems such as climate control and lighting control. SAI HVAC systems are “plug and play” you don’t need to call in a programmer, automation specialist or specialist technician. Once the systems are connected on the same LAN they recognise each other and the appropriate interface is loaded without the need for you to do anything.

1.4 Html User Interface

The html user interface can be used on most devices with a browser from a Smartphone or tablet to PC. The display results vary slightly depending on your device and browser type used. Many people choose the iPad mini as their UI platform but a laptop, PC or even your iPhone/Samsung can be used to control your SAI HVAC product.

1.5 Remote Access

Providing your system is connected to a Local Area Network (LAN) with an internet connection, The system allows you to remotely access your SAI HVAC systems remotely. This feature can be convenient for many reasons and is achieved by a secure connection through the SAI HVAC Mothership (MS) global server. You first login to mothership and then browse to your various SAI HVAC devices connected to your mothership account. Your mothership account can provide access to your SAI HVAC devices at multiple locations so if you are a building manager you can have access to all your sites at your fingertips through this one convenient and simple access point.

2. How to Connect to the System

There are three different methods for connecting to the AC system. The method you choose will depend on your location and the type of installation you are working on. Although you can connect to the inbuilt Wi-Fi (see 2.1) a LAN connection is RECOMMENDED for optimal performance for the client (see 2.2)

2.1 Direct Connection via Wi-Fi

NOTE: The on board Wi-Fi is for use when commissioning the system and only when no LAN connection is available. Some warranty terms are affected when connecting using only this Wi-Fi service solution.

Each VAV12 controls system can create its own network via Wi-Fi. This means you can connect the clients smart device/computer to the system. Please note the Wi-fi Dongle supplied must be used.

1. Open your Wi-Fi settings on your device and select the SAI VAV network (*Figure 1*) – if multiple chatterboxes ion site check for the Mac Address on the device you are connecting to.
2. The Password is “chatterbox” (*Figure 2*)
3. Once connected to the controls network you can open your browser and browse to the system IP address 192.168.2.11
4. You may wish to bookmark the page or add a link to your home screen on your device, so that you can press the link instead of having to refer back to the IP address each time you wish to connect. (*Figure 4*)
5. Direct connection requires your personal device/PC to be within range of the controls network. As this range can vary significantly depending on building conditions, the preferred method of connection is via an ethernet cable to the Local Area Network (LAN)

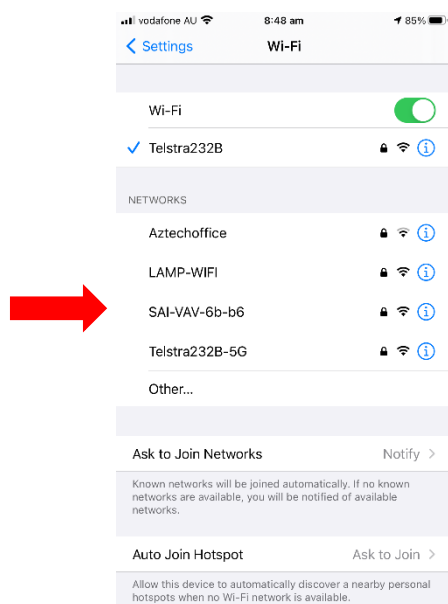


Figure 1 – Select SAI-VAV network in Wi-Fi settings

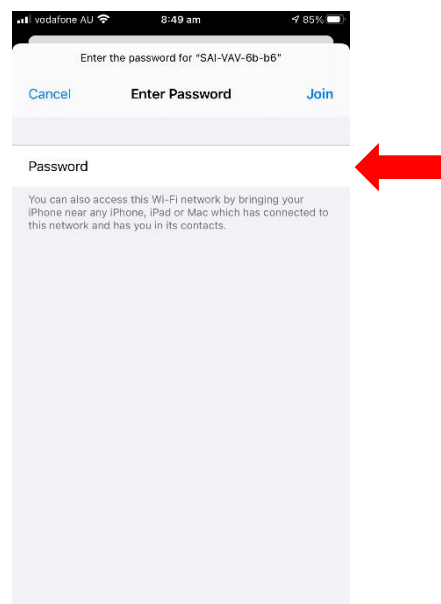


Figure 2 – Enter the password – “chatterbox”

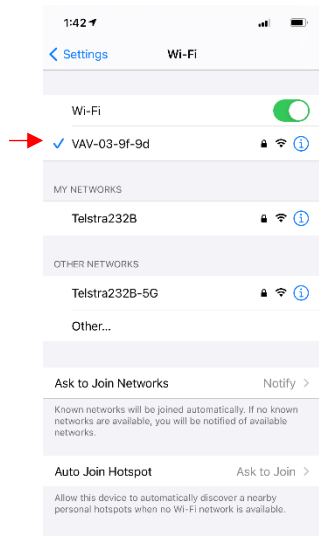


Figure 3 – Logged onto network

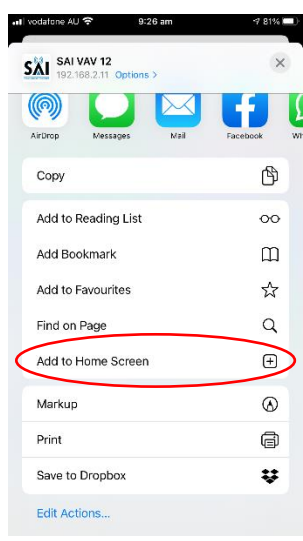


Figure 4 – Type IP address into browser & add to home screen or book mark

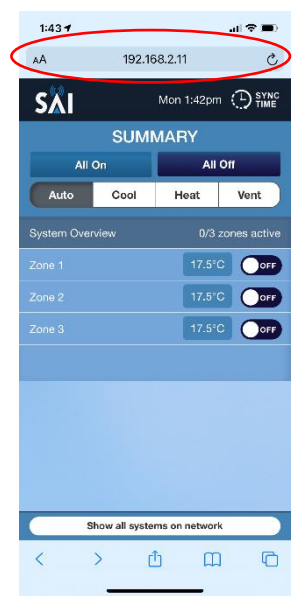


Figure 5 – User Interface launches

2.2 Direct Connection via your LAN

Connecting the system to the local LAN via a network cable connected from the VAV12 MPM module to the client’s router or a switch connected to the router is the preferred and best method for regular connection. You can then access the system from anywhere the client has LAN coverage. This will also give you access to SAI HVACs Mothership service (see 3.3) (Figure 6)

To check if the VAV12 system is connected to your network type **chatterbox.local** into your browser, this will bring up the GUI and allow you access to your system.

NOTE: Some older routers ship with UPNP disabled. You should check the router instruction manual for details on how to check this setting. Without UPNP enabled, the system cannot connect. Remember that after power failure the router may assign a different IP number to your system. In this case you will need to scan the network with FING or similar program to find the new IP. It is possible to set a fixed IP in your router settings however the method varies depending on your router brand and model. Your IT specialist should be able to help. Connecting your system to your router using a cable gives a level of access control as access can only be achieved by persons or devices having your LAN access password.

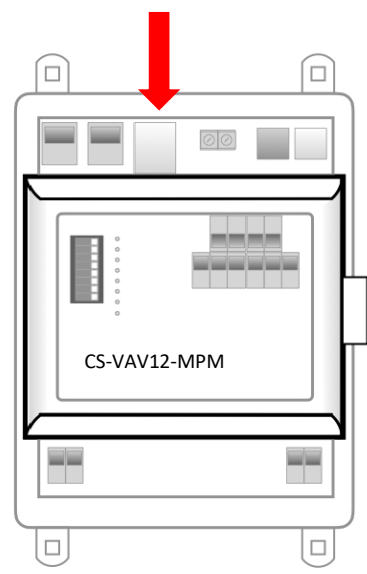


Figure 6 – Connecting via Ethernet cable

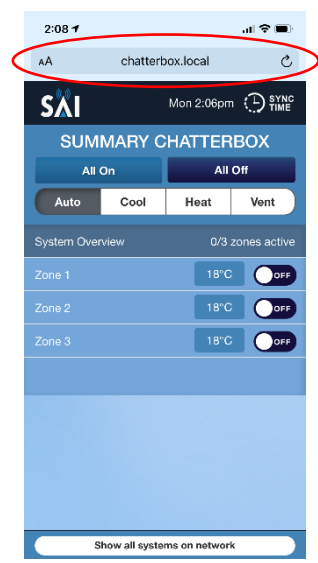


Figure 7 – Type in chatterbox.local to access the GUI when connected to your network.

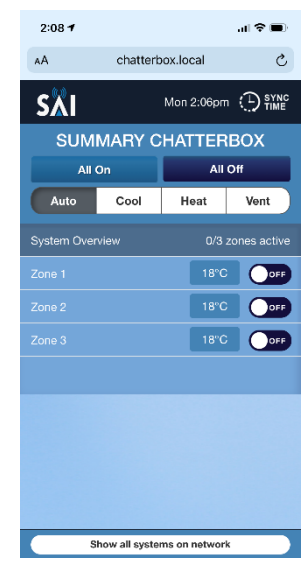


Figure 8 – User Interface Launches.



2.3 Connection via Mothership (Recommended)

Providing the clients system is connected to the building LAN and that the LAN has an internet connection, you can setup an account on the SAI Mothership global server to allow remote connection to the system via MS.

1. Open your browser and browse to <https://chatterboxmothership.com.au> and click the register button on the login page. (Figure 9)
2. The client can fill out registration details and we will send their registration name and password within 24 hours together with instructions on how to access their system via the Mothership.
3. If you are within the LAN, i.e. at home and your device is connected to the same network the system is running on, there will be a link at the bottom of the log in page titled “Your Local Devices” with the Mac Address and system description. You can click this link to go straight to the User Interface without having to log in. (Figure 9)
4. Once you have received notice of your User Name and Password, the client can go to the log in page, enter the details, then press Login to access their system outside of their LAN.
5. The next screen that launches will have a list of your AC systems. (Figure 10)
6. To access the User interface for any of the systems press the Launch button on the right hand side. This will launch the interface and you can start to control your device. (Figure 11)

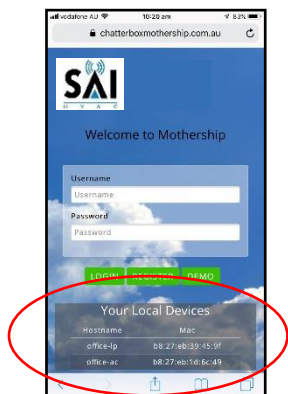


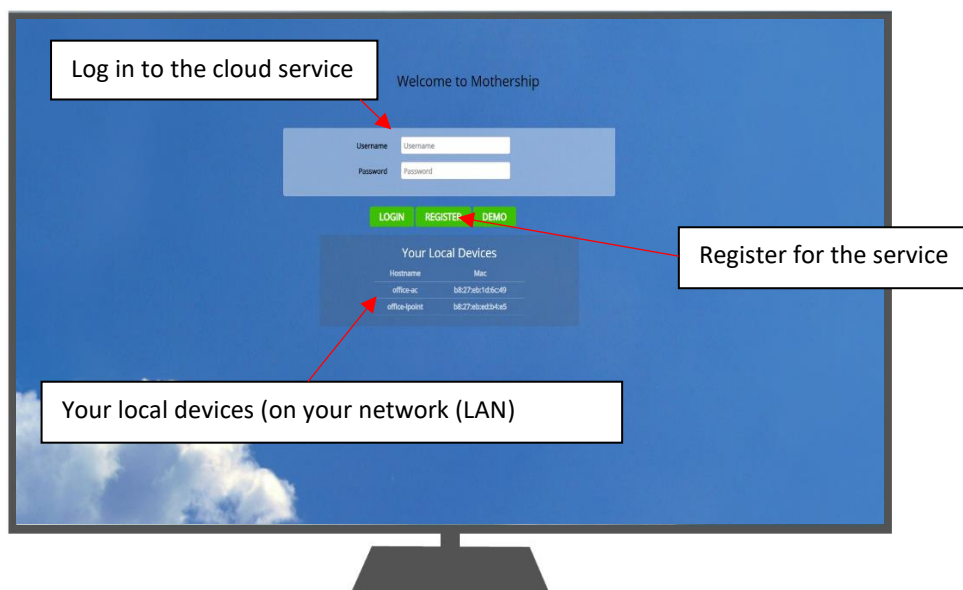
Figure 9 – Welcome/Login/Registration Page. Note the links at bottom of page when on the LAN



Figure 10 – Your devices will be listed on the control centre screen. Press Launch for the device you wish to interact with.

3.4 Using the Mothership Cloud Service

<https://chatterboxmothership.com.au>



3. VAV12 Operating Instructions Using the User Interface

Please note these instructions are for Desktop or Touchpad viewing, the smart phone will have a similar layout.

1. Open the User interface using the steps mentioned in 2.1, 2.2 or 2.3
2. The Launch page will open. (Figure 11)

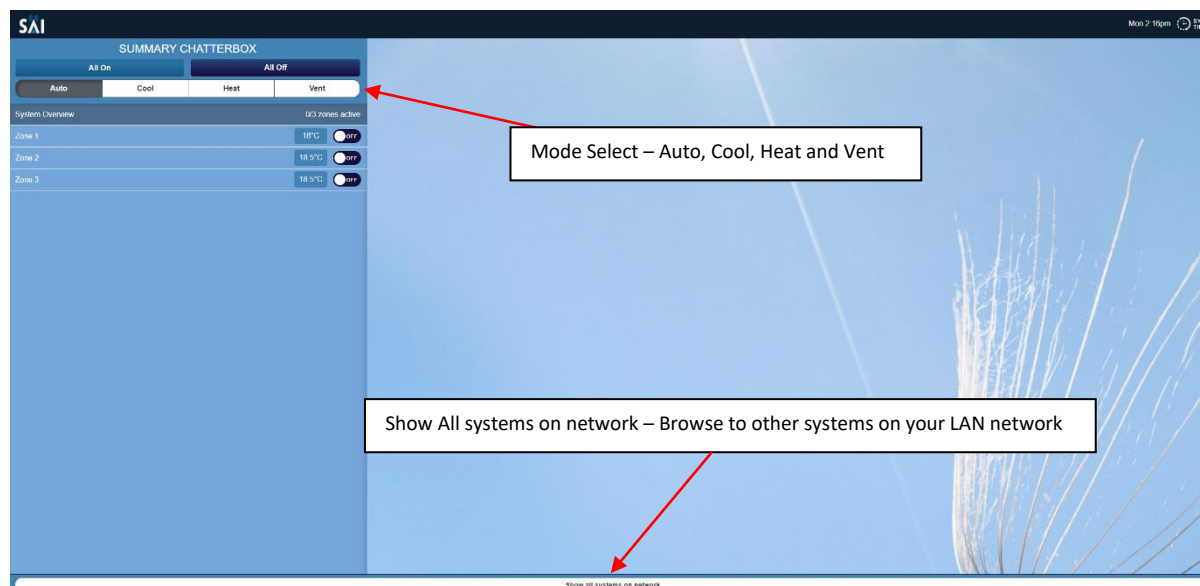


Figure 11 – Launch Page

3.1 Changing the System Mode

Press the Auto, Heat, Cool or Vent Buttons. (Figure 11)

Auto – Will switch between Heating and Cooling between zones.

Cool – Cooling only setting

Heat – Heating only setting

Vent – Will only circulate ambient air

3.2 Notes on Dynamic Energy Recovery

Your SAI HVAC multi zone temperature control system modulates its output capacity to match the heat load. It continues to cool or heat individual zones until they reach the target temperature (set point). When all zones are at target temperature, the refrigeration cycle is switched off. On a system where dynamic energy recovery is disabled, any room can re-activate cooling or heating when the temperature moves away from set point by 0.5°C. Dynamic energy recovery is a technology designed for structures that include a large central area surrounded by perimeter rooms. The perimeter rooms lose and gain heat at a much faster rate than the central area. The reason for this phenomenon is that the portion of external walls and roof to room volume is significantly higher and the additional thermal mass of the central area reduces the rate at which heat is gained or lost. The dynamic energy recovery algorithm intervenes when a perimeter zone calls for heating or cooling, it then measures the return air temperature (positioned in the large central zone) to apply a proprietary algorithm that calculates the flow needed to slow down the rate at which heat is gained or lost. The slider allows the user to find the right balance for their home or building between energy reduction and comfort. The slider moves the point at which the worst performing zone can terminate dynamic energy recovery and force heating or cooling.

The VAV12 zoning control is a unique part of the SAI HVAC system that provides the ability to dramatically reduce your energy bills. It is important to note that the average household uses 38% of their power bill on heating and cooling. It is also important to note that every degree Celsius difference between the inside temperature and the outside temperature adds 10% to the energy cost for that room. SAI HVAC's multi zone temperature control system automatically adjusts the airflow to individual rooms to make sure that cooling and heating overshoot is eliminated. There are 3 additional energy settings that are use adjustable that

decrease energy use further. This feature is most often used in combination with occupancy sensors. When applied in this fashion you can move through your home & the system automatically turns on and off as required.

3.3 Set the Optional Countdown Timer

Slide the “Auto Off” slider to the desired position between 30 & 240 minutes. The Auto Off timer is only used if you wish the system to run for that period of time and then switch off. The system then requires a re-start. This feature is designed as a safe guard for properties where the air conditioning can be left on while not required. (Figure 12). Anytime there is an on event on the system in any zone, the system will continue to operate. This feature is most often used in combination with occupancy sensors. When applied in this fashion you can move through your home & the system automatically turns on and off as required.

3.4 Optional “Cooling” and “Economy” Settings

See figure 12 use the slider bar to change this setting.

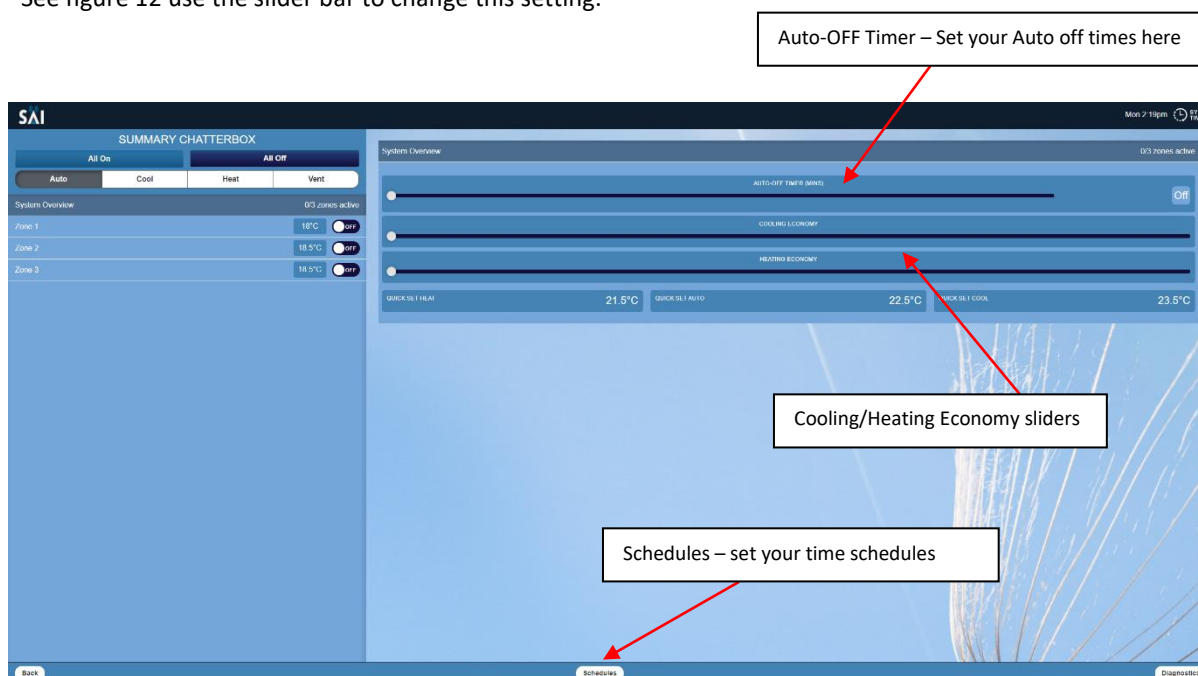


Figure 12 - The “System Overview Screen”

3.5 Setting the Global time schedule (whole system)

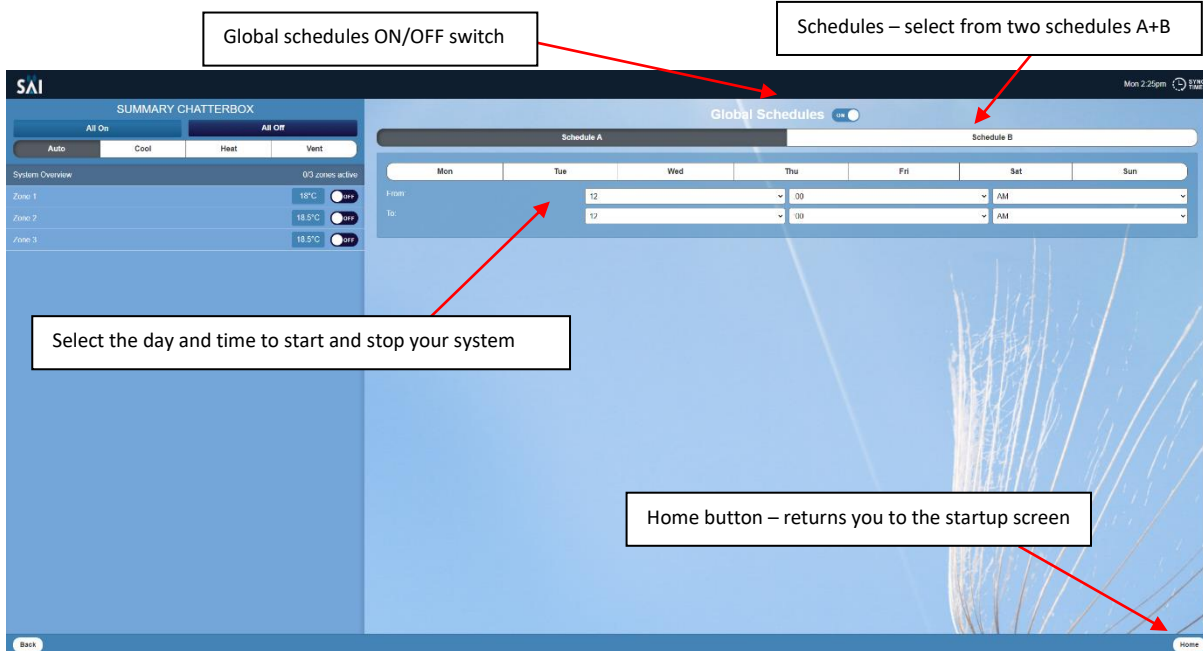
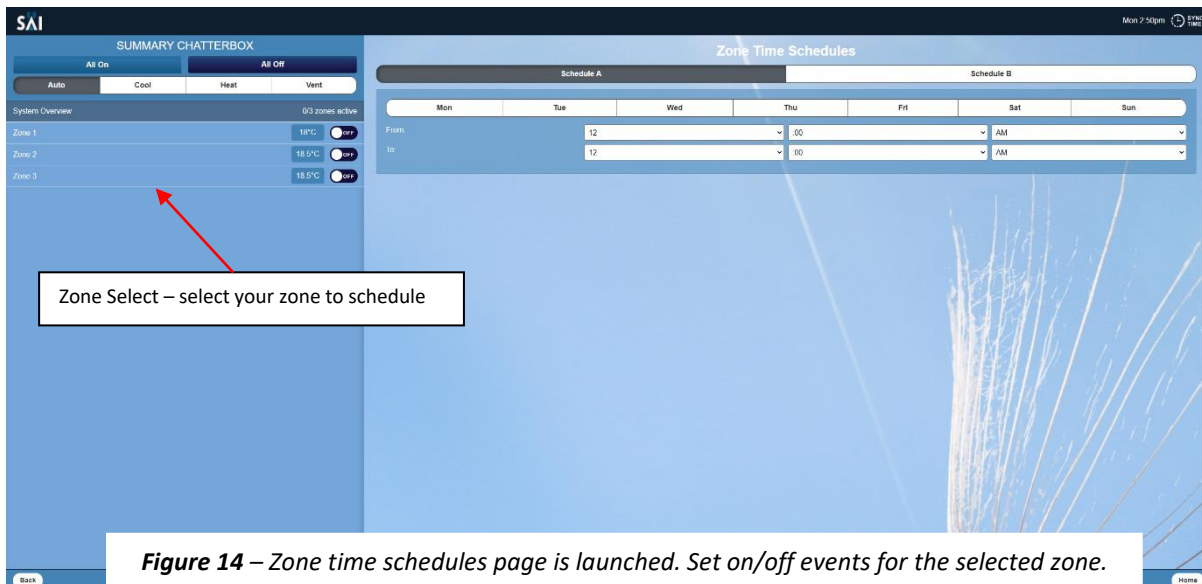


Figure 13 – The Global time schedules Page

1. Press “System Overview”
2. Press the “Schedules” button
3. Make sure the Global Schedules switch is selected to ON to activate the global schedules. you can turn these off by selecting OFF
4. Select from 2 schedules – Schedule A and Schedule B
5. After selecting your schedule, select which days and times you wish to turn on and off your system.
6. Press the “Home” button when you have completed your selections.

3.6 Setting Individual zones time schedules.

1. Press the zone you wish to set the time schedule for. (Figure 14)
2. Press the “Schedules” button (Figure 14)
3. Zone time schedules page launches
4. Select from 2 schedules – Schedule A and Schedule B (Figure 14)
5. After selecting your schedule, select which days and times you wish to turn on and off your zone. (Purple arrow – Figure 14)
6. Press the “Home” button when you have completed your selections. (Figure 15) or select another zone and repeat.



3.7 Browse to Other Systems

You can use the “Show all systems on network” button to display all SAI HVAC systems installed. You can select which system you wish to control from here. (Figure 11)

3.8 Adjusting the Settings on a Zone

To change the temperature setpoint in a zone.

1. Select the zone you wish to adjust
2. Adjust either up or down to select the desired temperature

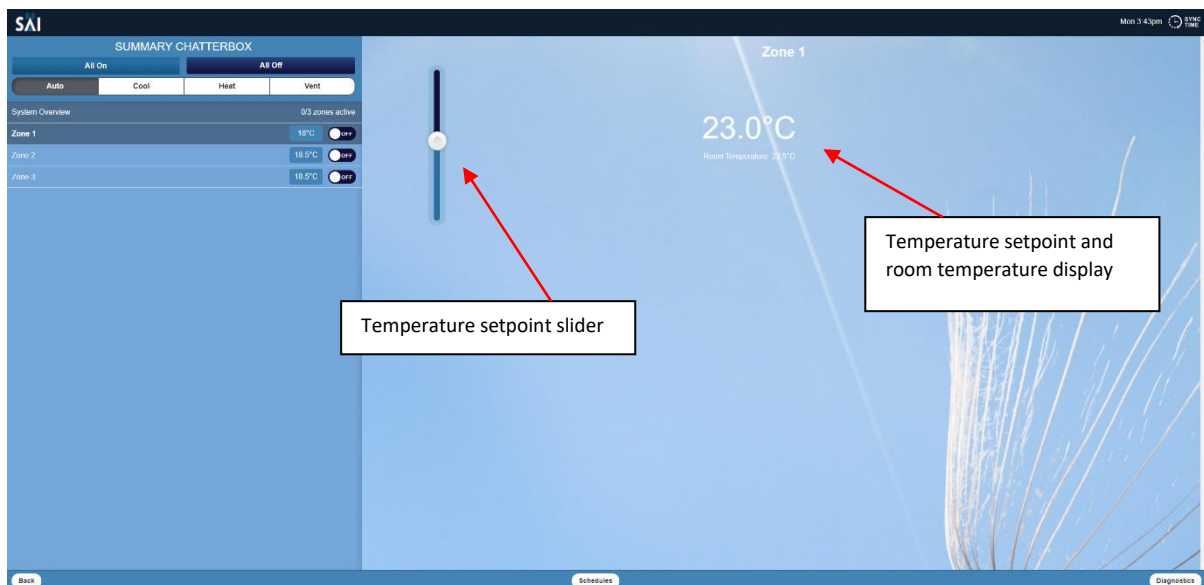


Figure 15 – Zone temperature adjust



4. System Diagnostics

From the home screen, Click on either the “System Overview” or the “Zone” (Bed1 or Bed 2) to see the system diagnostics.

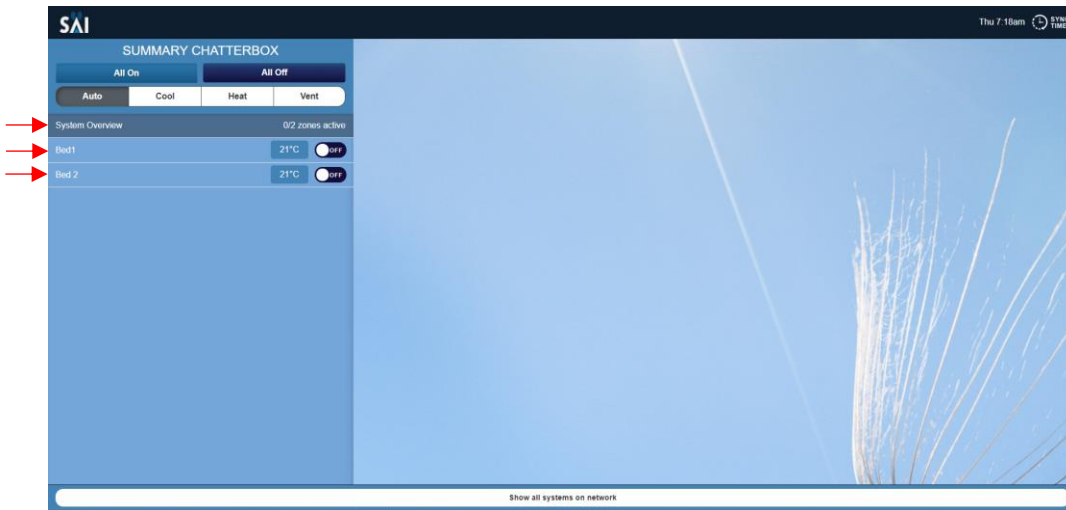


Figure 18 – Launch Screen

Information for the selected zone will show on the right-hand side window (figure 18) and the diagnostic button will appear in the bottom right corner (figure 19). The diagnostic button will appear in the same place regardless of which zone you select or if you select “System Overview”. This will launch the diagnostics screen (figure 20)

Please note: The information shown in the diagnostic page will be specific to the System Overview or the particular zone selected. There is no system summary page that shows diagnostic information for all zones on one page.

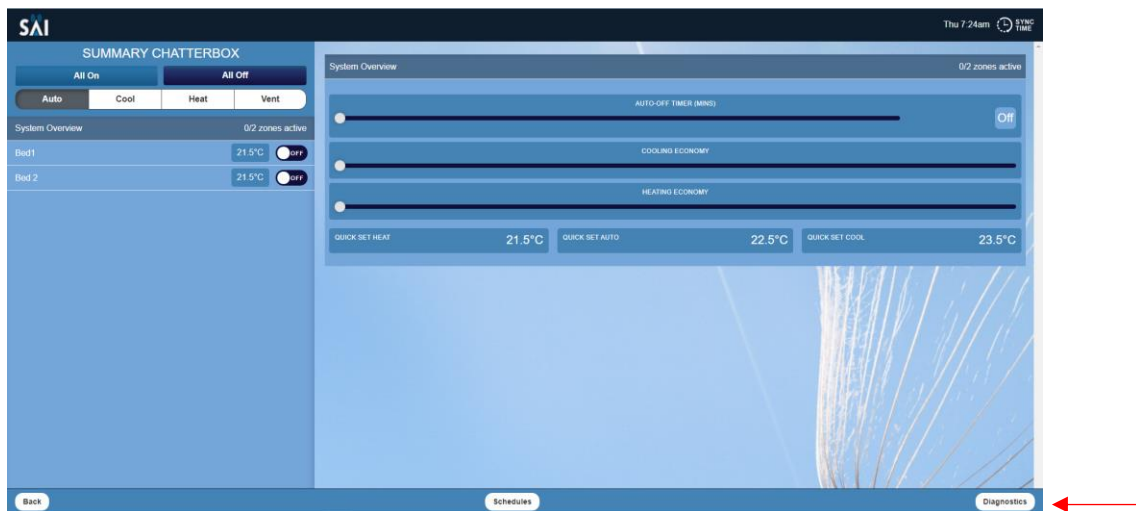


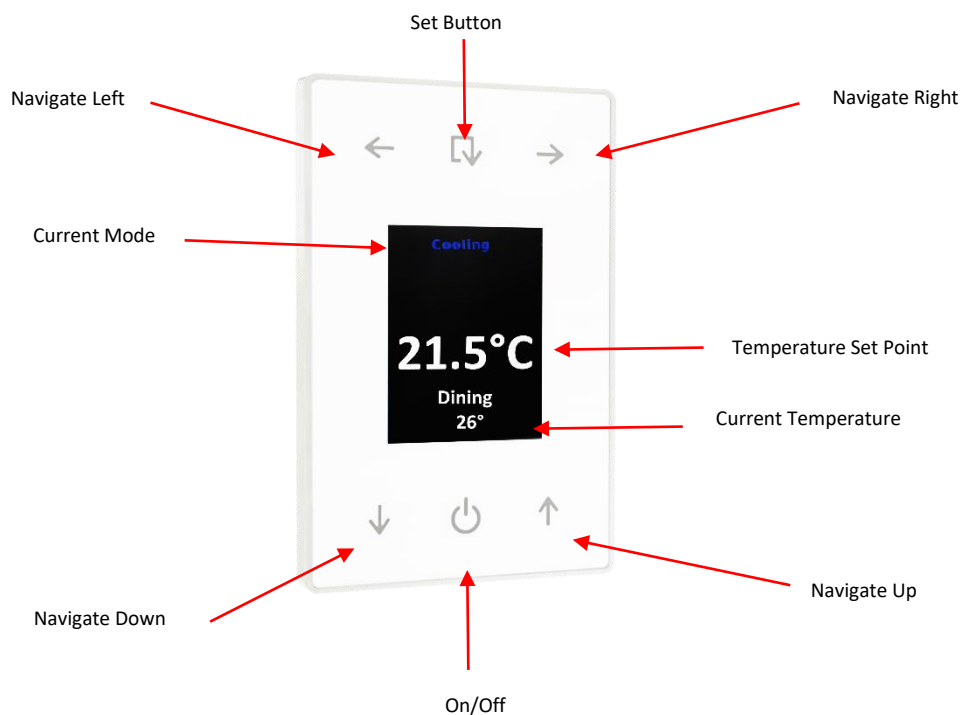
Figure 19 – Diagnostics Button



Figure 20 – Diagnostics Screen

5. SAI HVAC VAV12 Controls

5.1 SAI HVAC VAV12 Navigator

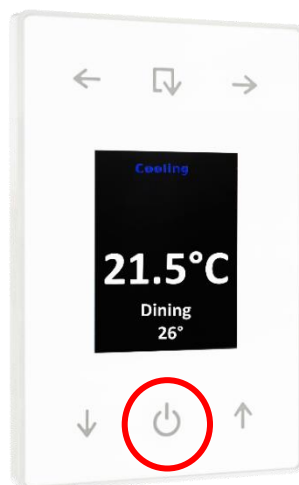


5.1.1 Turning the System ON and OFF

Press the ON/OFF Button when on the main screen to turn all zones ON or OFF.

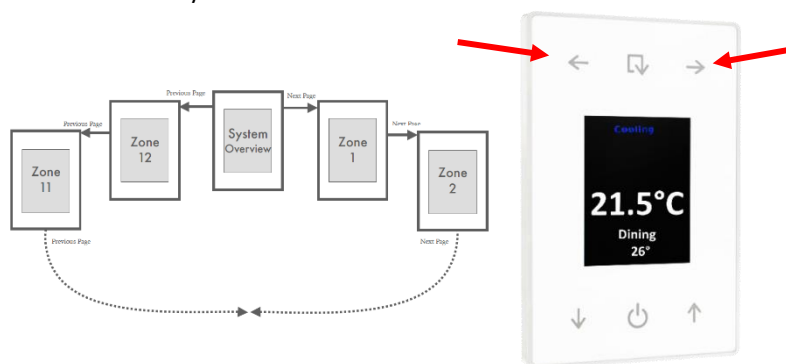
5.1.2 Turning a Zone ON and OFF

Press the ON/OFF Button when in the zone screen to turn an individual zone ON or OFF.



5.1.3 Browsing to a Zone

Use the left and right arrow buttons to scroll through available zones on your system. Continually scrolling in one direction will cycle the main screen and available zones



5.1.4 Changing the Temperature in a Zone

Once you are on the zone page you wish to adjust, use the UP arrows to adjust the temperature up and the DOWN arrow to adjust the temperature down.



5.2 Using the Single Button Capacitive Touch Room Controller

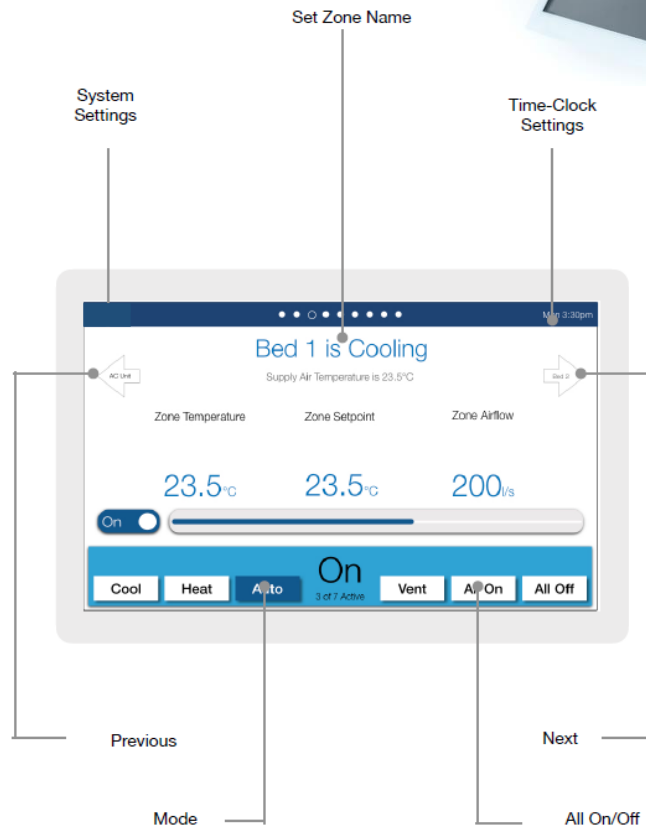
The Single button room controller is an easy to use on / off controller for your room or zone. It has a built in temperature sensor with a central button for turning a zone on or off. If the zone is switched off, the LED indicator around the capacitive touch button will be turned off. Otherwise the LED indicator has three different colours that signify different operations:

- Green – Indicates the zone is active, but it is not currently needed as the room is at temperature.
- Blue – indicates the zone is active and running on cooling.
- Red – Indicates the zone is active and running on heating.

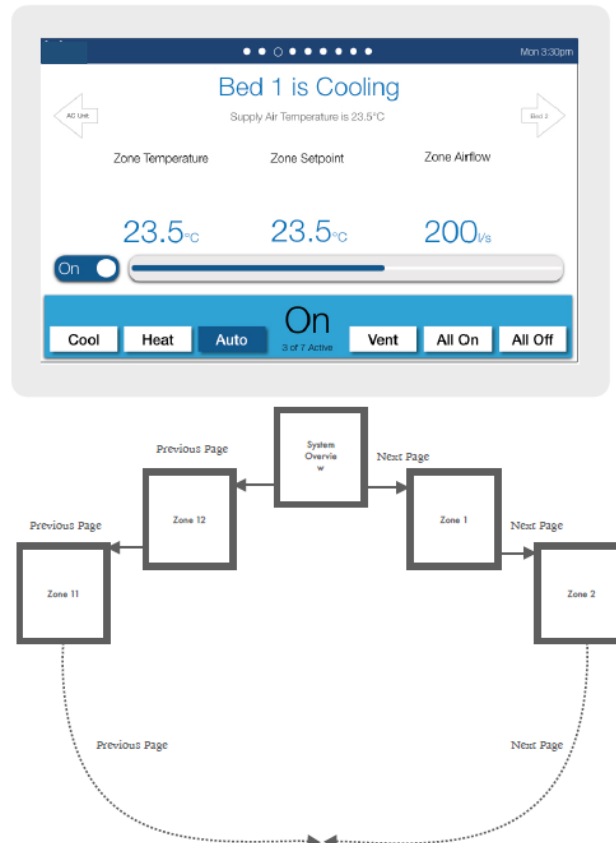


5.3 Surface 7 Touchpad

Capacitive Touch Buttons

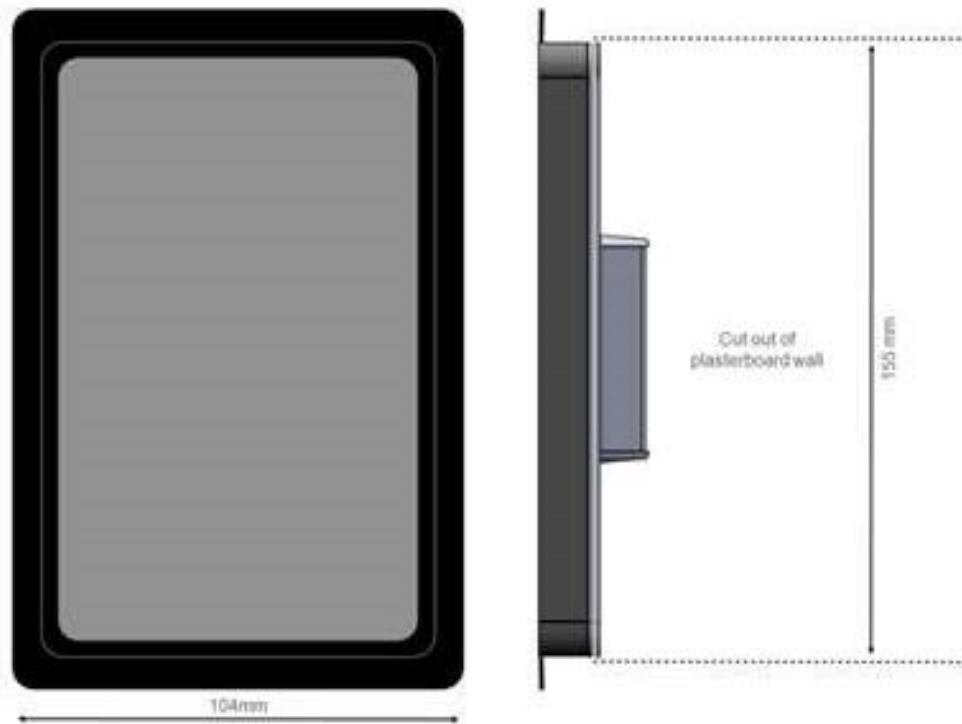


Page Navigation



5.4 Surface 5 Touchpad

The Surface 5 functionality can be directly related back to the GUI information.





6. Manufacturers Recommendations

Regular maintenance will ensure your SAI HVAC system operates at maximum efficiency.



The air conditioning plant and control system contains no user serviceable parts. Installation, service and maintenance of these components should be carried out by a suitably qualified technician



The control circuits for the indoor and outdoor units carry voltages > 240 VAC which can cause serious injury or death.

6.1 Return Air Filter Cleaning

Cleaning the filter in the return air grille is recommended every month. Filters may be cleaned by either vacuum or hand wash in mild detergent. Never operate the air conditioner without the filter. Ensure the filter is in good condition, if not contact your installer for a replacement filter (a charge will apply).

6.2 Outdoor Unit

Do not place any object in front of the condenser. Keep free of grass, leaves and any other form of debris. This will allow for proper air flow and ensure unit efficiency.

6.3 Vents & Return Air Grill

Regular cleaning of the return air grill and air vents is recommended. This will prevent build-up of dust and dirt.

6.4 Controllers

Clean the wall controllers with a dry cloth. Do not use a spray detergent or water.

IMPORTANT: Neon signage will interfere with the operation of Compact Comfort controllers. Do not have neon lights near Compact Comfort Navigators, Surface product or room controllers as the Electromagnetic field (EMF) will disrupt the operation of the controllers.



7. Troubleshooting

Problem	Possible Solution
Air Conditioner has restarted but does not operate for 4 minutes	The normal operating behaviour to protect the compressor. Wait until the air conditioner begins operating.
Operation stops for up to 12 minutes during heating and a different noise/sound comes from the unit.	The unit has entered defrost mode to melt the frost which has accumulated on the outdoor unit. This will take no longer than about 12 minutes so wait for the unit to resume normal operation. (Frost accumulates on the outdoor unit when the outdoor temperature is low and the humidity is high. Water comes out from the outdoor unit).
The air conditioner does not operate.	Has the mode been set correctly? Is at least one zone ON. Has the setpoint for ON zones been set low enough for cooling or high enough for heating? Has the circuit breaker been tripped?
The air conditioner does not cool/heat effectively.	Has the mode been set correctly? Are all the windows and doors closed? Are the filters dirty? Are the intake or outlet vents of the outdoor unit obstructed? The outside temperature maybe below or above design conditions. Turning OFF any zones not required may help.
Abnormal noise is heard during operation (except during the defrosting operation). Water leaks from the indoor unit. Switches or buttons do not operate properly. Fault code is displayed on the controller.	Contact your installer. Your model and serial number is recorded on the inside of the last page of this booklet.

8. Warranty

Please visit www.compactcomfort.com for warranty terms and conditions