airtouch

Installer Manual

airtouch.net.au

Contents

Compatible Brands	**4**
1. Components	**5**
2. Configuration	**6**
3. Pre-Installation	**9**
4. Components Installation	**10**
5. Recommended Commissioning Procedure	**15**
5.1 Parameters	16
5.1.1 Console in Group	16
5.1.2 Total Groups in the System	16
5.1.3 Damper RPM setting	17
5.1.4 Installer Settings Password	17
5.1.5 Display AC Control Sensor	17
5.1.6 Lock to Group Temperature Control	17
5.1.7 Reset and Save current system settings	17
5.2 Balancing	18
5.3 Sensors	20
5.3.1 Assign a sensor to a group	21
5.3.2 Pair main module and wireless sensors (ITCs)	21
5.3.3 Calibrate a Sensor	21
5.4 Grouping Zones	22

Liability
Please read the instructions before installing this AirTouch Zoning Control System. Polyaire Pty Ltd does not accept any responsibility for loss or damage that may occur as a result of the incorrect installation of this AirTouch Control System.

5.5 Choosing Group Temperature Control	23
5.6 Setting Minimum Ventilation	24
5.7 Spill or Bypass	24
5.8 Enabling/Disabling Service Reminder	25
5.9 Setting up AC Control	27
5.9.1 Name AC Units	27
5.9.2 Auto Off	27
5.9.3 AC Detail Settings	27
5.9.4 Choose AC Control Thermistor	28
5.9.5 Configure AC Fan Speed Options	29
5.9.6 Control Temperature Offset	29
5.9.7 On Duration Time	29
5.9.8 Multiple Ducted Systems	30
5.9.9 Groups connected in each ducted system	30
5.10 System Info	31
5.11 Setting up Wi-Fi connection	32
5.12 Testing Damper On/Off	32
6. Wiring Diagrams	**33**
7. Downloading and Installing AirTouch 4 App	**69**
8. Troubleshooting	**70**

Compatible Brands

1. Components

1.1 Console
Users can input control commands from the console to turn on or off a group/zone or AC. It is used to input all parameters. The color LCD displays clock, zone, WiFi, AC, temperature and other statuses.

1.2 Main Control Module and Extension Module (optional)
Main control module (8 zones) and its optional extension module (extra 8 zones) control the position of motorized damper of each zone.

1.3 Motorized Damper (Bright Green)
Motorized dampers drive the blade of the damper to adjust the air supply.

1.4 Cables
Cables with left latch or central latch plugs connect the main control module, extension module (if applicable), console, and motorized dampers together.

1.5 Supply Air Sensor (optional)
Supply air sensor measures the temperature of the supply air for auto mode recognition.

1.6 Power Supply
24VAC transformers provide power to the main and extension modules.

1.7 AC Gateways (optional)
AC gateways are for full control of most major brand ducted systems such as Daikin, Panasonic, Fujitsu, Mitsubishi Electric, Mitsubishi Heavy Industries, Toshiba, LG, Hitachi, Samsung, Carrier, Rinnai, Midea, Braemar and Gree. Each gateway comes with a RS485 cable for connecting the gateway with AirTouch 4.

1. Components contd.

1.8 Wireless temperature sensor
Wireless sensors are used for group temperature and On/Off control. Each group can have up to two wireless temperature sensors. The wireless sensors send measured room temperature or On/Off command back to main module regularly. They are driven by button type battery and have dipswitches for their own identification.

2. Configuration

AirTouch 4 System is a star architecture system that allows communications between AirTouch 4 main control module, extension module, AC unit, WiFi router (to connect to smart phones and internet), up to 16 zone dampers, wireless temperature sensors and up to two consoles. Figure below shows the connection of devices such as the WiFi router, AC indoor PCB, extension module, two consoles, and eight dampers to the main module.

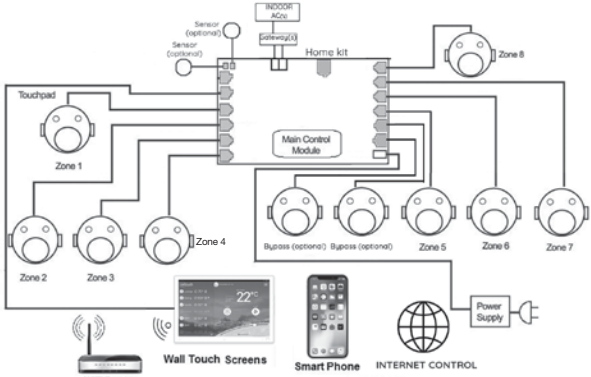


Figure 1: AirTouch 4 Main Control Module connected to AC Indoor Board, WIFI router, Smartphone and 8 Dampers

Continued on next page.

Eight motorized dampers can be connected to the main control module. Nine dampers and above (up to 16) will need the extension module.

The wiring of the AirTouch 4 system is straightforward. A cable with central latched plugs connects a motorized damper to the relevant output port clearly marked on the main or extension module. Figure below shows the connection of eight dampers to the extension module.

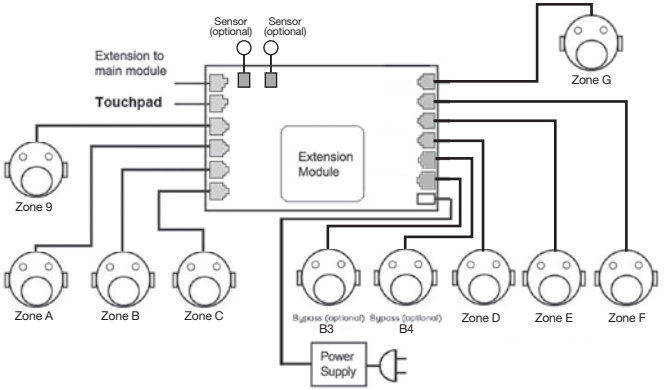


Figure 2: AirTouch 4 with Extension module and 8 Zone ports.

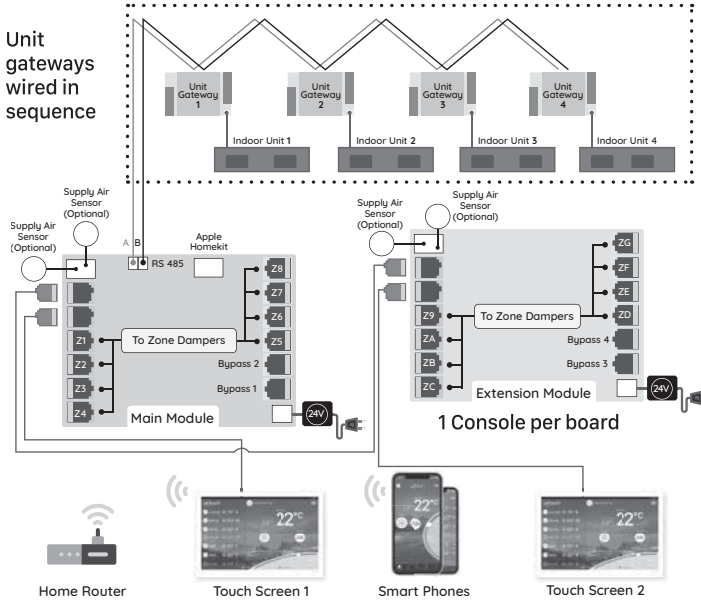
If there is another gateway for another AC, it will be connected to Modbus line. Maximum four gateways can be connected for one AirTouch 4 to control four AC's. Please see AC wirings for details in section 6.

Main and extension modules can be in different locations and connected via a cable with left latched plugs on both ends. Console is connected to the 'T' port on main module.

Up to two consoles can be joined in a system. One will be connected to the main module and the other to the extension module. One screen is set to Master (1) and the other is set to Slave (2) .

Figure below shows the linking of the main module to the extension module, AC unit, consoles, wireless sensors and smart phone.

Note:
Install the console at least 20mm away from any other wall control to avoid potential interference.



3. Pre-Installation

Good planning leads to a successful zone system installation. Before installing and commissioning a zoning system, please complete the following listed tasks:

3.1 Decide how many zones (dampers) are to be controlled in the system.

3.2 Group zones according to customer's requirements. Each group initially has one zone but can have up to a maximum of four zones (Example: There could be one or more zones going into a common area such as Kitchen/ Dining or Family/Dining room). Work out the total group number (Maximum total group number in a system is 16).

NOTE: It is important to test all cables before installation.
Testing all cables to be used before the start of the installation will save considerable diagnostic time if the fully installed system is subsequently found to have a problem. Cable testing is quick and easy with a Zonemaster Cable tester available from Polyaire.

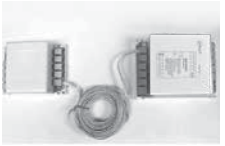
Cable Tester (Item: 657089)

4. Components Installation

4.1 Mount the main and/or extension modules (if using more than 8 zones) by screwing the boxes to a roof frame or Polyaire Diffusion Fitting (PDF).

4.2 Remove the two side covers on the main module. All LEDs and sockets for zone dampers are exposed.

4.3 If the extension module is used, connect main module to extension module at 'E/M' port on both modules with a left latched cable.



4.4 Use pre-tested cable to connect 'Z1' port on the main module to the motorized damper of the 1st zone.

4.5 Repeat step 6.4 to connect other zone dampers to their relevant zone ports on the main and extension modules.

4.6 Mount the supply air sensor in the supply air duct between the fan coil and the first damper and push the plug of supply air temperature sensor into the socket on the main module.

4.7 Connect the console to the 'T' port on the main module. If two consoles are used, connect one to T on the main module and the other to the extension module.

4.8 Connect the 24V AC transformer to screw terminals on the main control module. If extension module is used, connect another 24 VAC transformer to the screw terminals of the extension module.

4.9 Connect the main module to the AC unit using the required kit for the respective AC unit (cables and interface board). Follow the wiring diagram for the respective unit provided on Page 33-68 of this manual.

4.10 Replace the side covers back on the main control and extension module once finished setting and commissioning.

4.11 Remove the cover of the ITC from the base. Install the base with screws in proper positions where there is no direct sun, no draft and about 1.5m above ground. Set the correct group number and identification number (Sub ID) for each sensor. And activate the battery to start the wireless sensor. Then align the cover with the base and click the cover to position to complete the sensor installation.

4.12 Fit the Console to wall
The plastic casing of the console consists of two halves. The front cover contains the PCB board along with the LCD/console. The back cover attaches to the wall as a mounting base. During the installation process the case will have to be opened to mount the console on the wall. Follow the steps below to carefully install the console to the wall:

a. Slide the back base to bottom side to clear the stops on the front cover

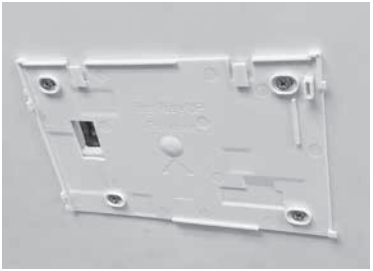
b. Remove the base from the front cover

c. Position the back base on the wall where the cable is (about 1.5m high from the floor). Ensure it is away from any heat or cool source and mark the cable hole and screw holes.

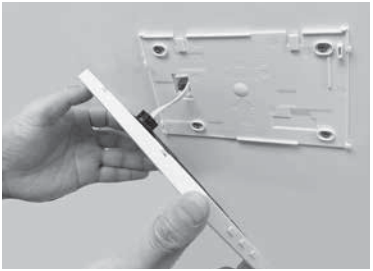
Note: The correct back cover direction is marked on its surface; follow that mark when fixing the back cover.

Continued on next page

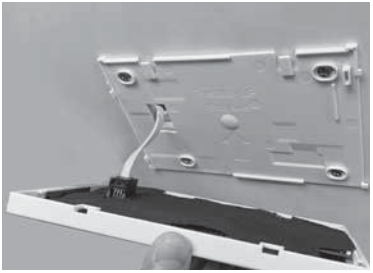
d. Cut the rectangular hole for the cable and fix the back base to the wall by using four screws on the marked positions.



e. Retrieve the console cable (from main control module) out of the cable hole and plug it into the console.

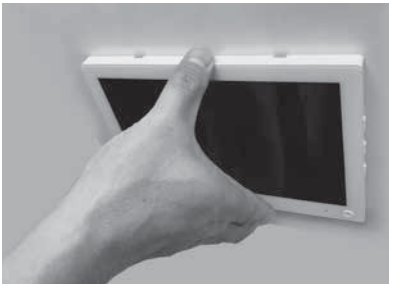


f. Align the bottom edge of the back base with the bottom inside of the front cover and the two side edges of the back base with the front cover.



Continued on next page

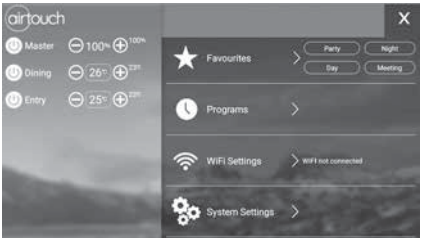
g. Gently push the front cover against the wall and make sure the back of front cover is flash against the wall. And then push the front cover downwards with two figures holding the top side of the front cover where there are two slots till the two snap-ons click in.

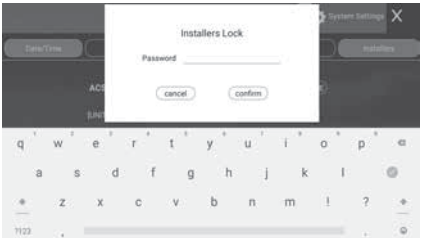


5. Recommended Commissioning Procedure

When the AirTouch 4 is first powered up, the Privacy Agreement page will come up. The installer or owner has to agree with the agreement to proceed with commissioning of the system. Press the Agree button to proceed. If the Cancel button is pressed, the AirTouch 4 will stop and the Android tablet home screen will come up.

There are two sets of settings, the installer's and user's. In the installer's settings, the followings can be set: parameters, balancing, sensors, spill, grouping, service and AC. These settings are protected by a password which has default value ***Polyaire*** but can be changed. Touching Installer's button in the Settings list will bring up password input page. After inputting the correct password, installer's setting page will come up. In the user's settings which are discussed in User's Manual, the followings can be set: owner name, date/time, group name, WiFi, turbo group, temperature display, touch tone, child lock and temperature alert.

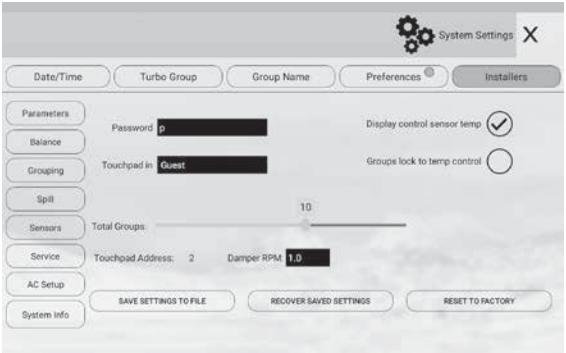




5.1 Parameters

5.1.1 Console in Group or for AC control

The console sensor can be used for controlling temperature in a group or an AC unit. In this case, it should be assigned to the AC unit or the group where the console is installed.



5.1.2 Total Groups in the System

For the purpose of group status display and spill zone calculation, the system needs to know the total number of groups to be installed. The factory default number is 8.

IMPORTANT: This number must be equal to the total group number used in the system as planned in Pre-Installation process. If this is wrong, the system may not work properly.

5.1.3 Damper RPM Setting
AirTouch 4 can work with other dampers which are not made by Polyaire. But the damper motors have to meet certain requirements:
Power supply: 24 VAC
Drive Open and Drive Close
Revolution per Minute (RPM): 0.1 to 2.5

5.1.4 Installer Settings Password
The password is used to prevent unauthorized changing of the installer settings. To reset this password, touch the password edit field in the 'Parameter' screen, and then type in the new password and touch 'Enter' key to confirm the password change.

5.1.5 Display AC Control Sensor
The AC control sensor temperature will be displayed under the banner Sensor alongside the AC set point on the home screen if Display Sensor is ticked.
It's not ticked by default.

5.1.6 Lock to Group Temperature Control
All groups with temperature sensors will be controlled only by temperature and cannot be switched to percentage control if Lock to Temperature Control is ticked.
It's not ticked by default.

5.1.7 Reset and Save current system settings
To record all system settings, press Save Settings to File button. After the settings have been saved successfully, it will be stored on the console in the name of AtchV4_Setting_Id.txt. Please transfer the settings file to a micro SD card or send it to an email address for permanent storage in case the console is unaccessible.

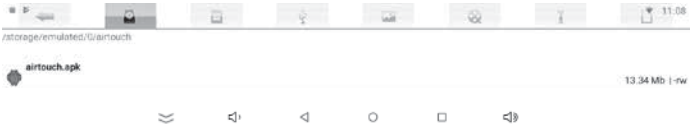
Use File Manager on the console to access the file under /storage/emulated/0/airtouch.

If the main module has been replaced, the system can be recovered from this file.

After the settings file is stored under the folder /storage/emulated/0/airtouch, press the Recover Saved Settings button to recover.

After successful recovery, the system has to be powered off for at least 30 seconds and then powered back on to use the recovered settings.

If the system needs to be reset to factory default settings in some cases, press Reset to Factory. All group names and settings will be back to original factory settings.



5.2 Balancing

Electronic balancing feature of AirTouch 4 offers the flexibility of balancing the amount of airflow to each zone electronically. Once the opening position of the damper is set, the damper will only open to this position. The default setting for each damper is 100% opening position and the adjustable range is between 0 and 100% with 5% increment. The balancing settings can be conducted on the touch screen as below.

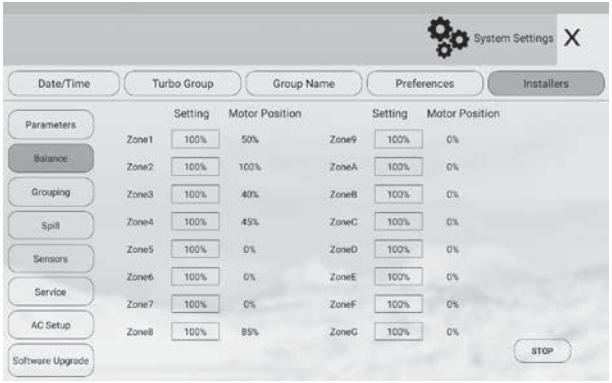
a) On 'Installers' screen, touch Balance menu

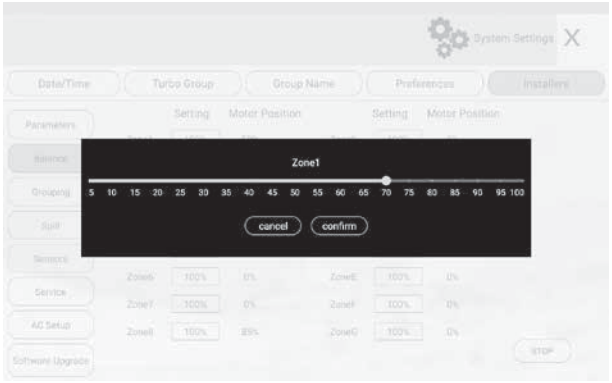
b) Touching the percentage value for the zone to bring up the value input dialog. Confirm the required value to start the balancing process. All zones will open to its balanced position. You can input proper value and check the airflow on the fly till right value reaches.

c) Repeat the process for all zones which need balancing. Then touch the Stop button to stop the balancing process.

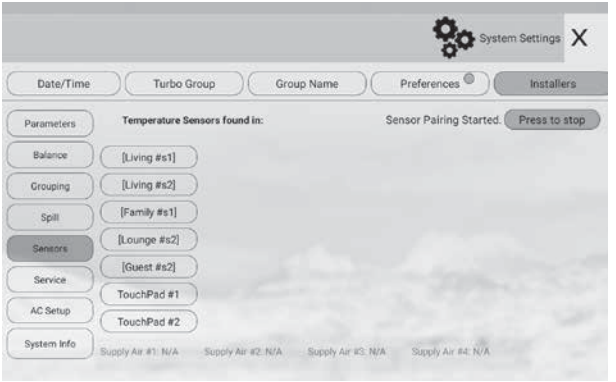
NOTE:

- **The %OPEN value on the Zoning screen can be operated by the user for additional air flow adjustment to the groups. The overall opening % of the zone is calculated as %OPEN x Balance %.**


System Settings
X
Date/Time
Turbo Group
Group Name
Preferences
Installers
Parameters
Balance
Grouping
Spill
Sensors
Service
AC Setup
Software Upgrade
Setting
Motor Position
Setting
Motor Position
Zone1 100% 50%
Zone2 100% 100%
Zone3 100% 40%
Zone4 100% 45%
Zone5 100% 0%
Zone6 100% 0%
Zone7 100% 0%
Zone8 100% 85%
Zone9 100% 0%
ZoneA 100% 0%
ZoneB 100% 0%
ZoneC 100% 0%
ZoneD 100% 0%
ZoneE 100% 0%
ZoneF 100% 0%
ZoneG 100% 0%
STOP

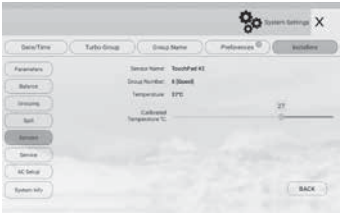

Zone1
5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
cancel
confirm

5.3 Sensors



Temperature sensors are used for measuring group temperature and control group temperature and On/Off if required. There are wireless temperatures sensors and wired temperature sensors (on console). Each wireless sensor has dipswitches to assign it to a particular group where it is installed and to be used for temperature control of the group.

Wireless Sensor



Console Sensor

5.3.1 Assign a sensor to a group

The console sensor can be assigned to a group where it's installed in Parameter settings. For a wireless sensor, open the wireless sensor cover and set the dial of the group dipswitch (with 16 digits) pointing to the group number required. Position 0 is for group 16. If there are more than one wireless sensor for the same group, set the group dipswitch to the same position but different sensor ID by switching the Sub ID dipswitch. If the group dial switch or sub ID switch has been changed after pairing it's necessary to re-pair the sensor. Otherwise the change will not be effective.

5.3.2 Pair main module and wireless sensors (ITCs)

After assigning wireless sensors to relevant groups, it's time to pair the sensors. The AirTouch 4 main module and wireless sensors have to be paired to enable communications. When AirTouch 4 is first powered up, start the pairing process on the Sensors page in the Installer's Settings by switching the Pair button to Start, then push and hold the button on each of the ITCs to be used in the system to pair. All ITCs will come up and the groups with ITCs will show set points after being paired. Then switch the Pair button to Stop to finish the pairing process.

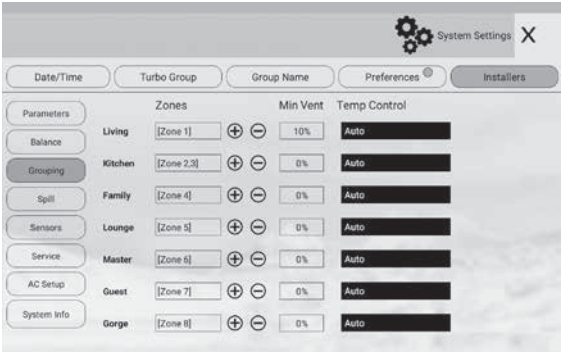
5.3.3 Calibrate a Sensor

If the temperature reading from the sensor is not accurate, it can be calibrated by changing the value in the calibration box on the sensor details page.

5.4 Grouping Zones

For ease of control operation, multiple zones can be grouped together.
The grouped zones are treated as one group with its own name and turned on or off together. Individual balanced damper position is not affected by grouping, which means zone balancing can be conducted before or after grouping.
Grouping can be carried out as follows:

a) In 'Installers' screen, touch Grouping to enter 'Grouping' screen.



b) Touch the edit field of the group
c) and then touch + or - button to add or minus zones to the group
d) Repeat steps b) and c) to define all groups

5.5 Choosing Group Temperature Control

If more than one sensor is assigned to the same group, options of using different sensor combinations are available in Grouping section. Touch the field after TC to choose a wireless or console sensors as control temperature for the group. If there is no sensor in the group, there will be no list for the group. If there is more than one sensor, there will be a list for selection. The chosen sensor or average of all sensors in the group will be used for controlling the temperature in the group.

If the group has only one temperature sensor, its temperature will be the control temperature for the group. In default, the Auto is selected. The system will automatically choose none, one sensor or average of two sensors when there is no sensor, one sensor or two sensors,

When the group control temperature is activated, all zone dampers in the same group will act against this temperature.

NOTE: The maximum number of zones in a group is four. The zones to be grouped will be consecutive zones. The factory default for grouping is that each group has one zone.

5.6 Setting Minimum Ventilation

Groups with ITCs can have minimum ventilation settings to meet relevant requirements in light commercial applications. This is done in grouping settings. Go to Grouping page, set the Min Vent for each group which has temperature control. When the set point has reached, the damper of the group will not be fully closed but have the set Min Vent opening to circulate the air. But if the group is turned off, the damper will be fully closed. The maximum ventilation is 40%.

5.7 Spill or Bypass

Spill or bypass mode is a safety feature of the AirTouch 4 system to prevent pressure from building up and causing duct damage. This usually occurs if someone has turned off all groups while the A/C unit is pumping air into the system leading to a pressure build-up (and potential of duct puncture, blow-offs or joints splitting).

It is designed to automatically open dampers if someone attempts to shut down all dampers thus preventing pressure build up. Spill function opens the groups chosen as spill groups in the system when all groups are being closed. Bypass function opens the bypass damper which connects the supply duct to the return duct directly when all groups being closed. When choosing groups for spill, it is strongly recommended NOT to use bedrooms as spill groups. During sleep time if the air conditioner is on and spill groups are forced to open, the spill groups will be very cold or hot.

The system will maintain the number of groups chosen as spill groups open at any time when AC is running. For instance, there will be at least two groups open if two groups are chosen for spill. The first group in the chosen spill group list will open first to spill. The maximum number of spill groups is half of the total groups.

Continued on next page.

IMPORTANT: Choose at least one group as spill group unless there is a permanent open zone used as spill zone. Otherwise, there will be no spill group when all zones are closed and damage may be caused by high pressure building up inside ducts if air conditioner is running. The Bypass and Spill cannot be set at the same time.

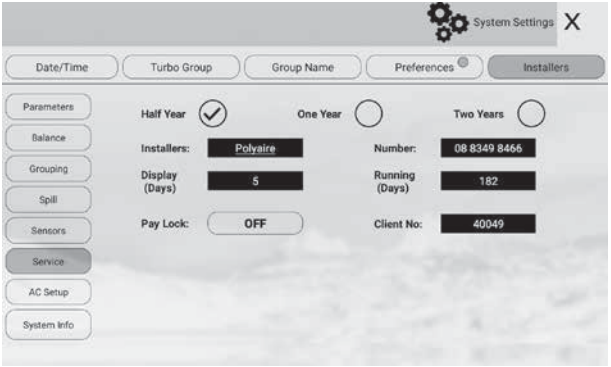
5.8 Enabling/Disabling Service Reminder

There is a built-in service reminder in the system for half year, one year and two years to automatically display an alert notifying customers that the air conditioning system is due for service. Installers can also use this feature to leave their details such as their names and contact number.

The service reminder will display 'HALF YEAR SERVICE DUE', 'ONE YEAR SERVICE DUE' or 'TWO YEAR SERVICE DUE' and installer's name and contact number on console for the set number of days if it has been enabled for half year (182 days), one year (364) and two years (728 days) respectively since the air conditioning system has been commissioned or serviced. The Running days in the 'Service' screen will automatically reset to 1 after 728 days or can be manually changed. The Service Reminder is disabled by default but can be enabled as follows:

Continued on next page

a) In the 'Installer' settings screen, touch Service to enter the 'Service' screen.



b) Touch the service reminder option buttons to enable or disable the relevant reminders.

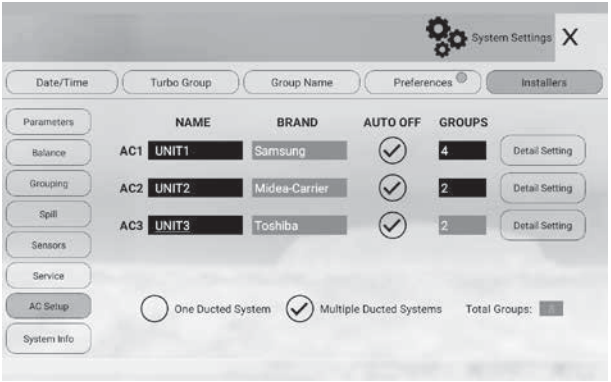
c) Touch the edit field to change to the desired setting. The installer name and number can be entered by using a keyboard. Make sure to touch Enter to confirm the input. Touch the number and change Display and Running days via keyboard input.

Maximum length of the name is 10 characters and the phone number is 12 digits.

Reminder information will be displayed on the screen when the service is due for the length of display days (5 days in the example). Touch the "x" button on the top right corner of the message box will clear the alert but the message box will come back when the screen wakes up from sleep next time.
To not show the message box before the set display days, tick the Don't Show Again box before closing the message box.

5.9 Setting up AC Control

If relevant gateways are connected to the AirTouch 4 main module, AirTouch 4 will automatically recognize the connected AC brands. The brands will be listed in inactive color and cannot be changed. But the AC names are still editable.
In this case, AirTouch 4 will have full control of the ACs such as operation modes, fan speeds and set point. The available gateways for the relevant ACs are Daikin, Panasonic, Fujitsu, Mitsubishi Electric, Mitsubishi Heavy Industries, Toshiba, LG, Hitachi, Samsung, Carrier, Rinnai, Actron (Slim), Midea, Haier, Braemar and Gree. The wiring diagrams for full AC control are on section 6.



5.9.1 Name AC Units

The names of the AC can be edited as required. Touch the name box will bring up keyboard for editing. Touch Enter to confirm the new name. The maximum length of the AC names is 8 characters.

5.9.2 Auto Off

When it's enabled (ticked), the AC will turn off automatically if all groups in this AC are off.

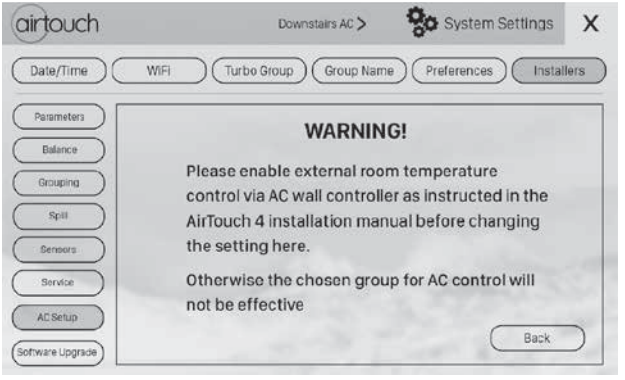
5.9.3 AC Detail Settings

The detail settings will have the flexibility to use different sensors for AC control and to configure fan speed options for various AC models and brands.

5.9.4 Choose AC Control Thermistor

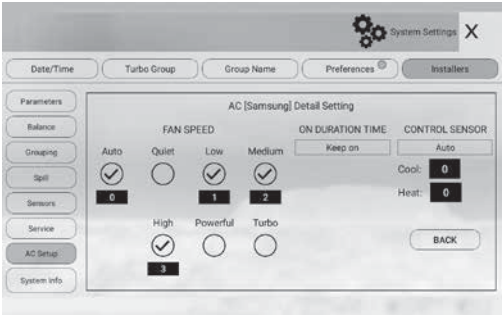
In full AC control situation, the AC control temperature can be measured from AC (its wall controller or return air sensor) or groups with temperature sensors. The installer can select one which is better to represent the home temperature for the AC unit. AC unit will use this value to take control.

Please check the commissioning notes for each model and ensure the AC unit is enabled for remote temperature sensor control. Otherwise, the selected group temperature sensor will not be used for AC control as expected even though the console of AirTouch 4 will show the measured temperature from the group sensor.



5.9.5 Configure AC Fan Speed Options

AirTouch 4 can automatically recognise the total fan speed options from the indoor unit in most cases. In rare cases, the installer may need to manually set the fan speed options to match the actual fan speed options of the AC unit. First tick the fan speed names and then change the fan speed matching number. As in the image below, the Low fan speed number may be changed to 1, Medium to 2, High to 3 and Powerful to 4.

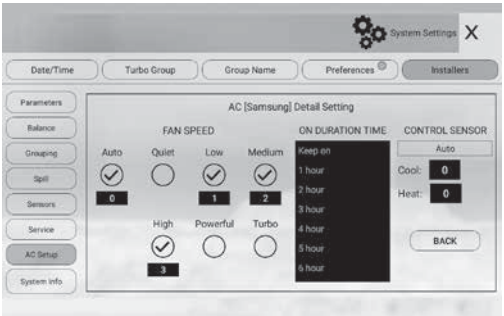


5.9.6 Control Temperature Offset

The measured temperature from the selected control thermistor can be offset to suit the situation. It's up to the installer to choose the value.

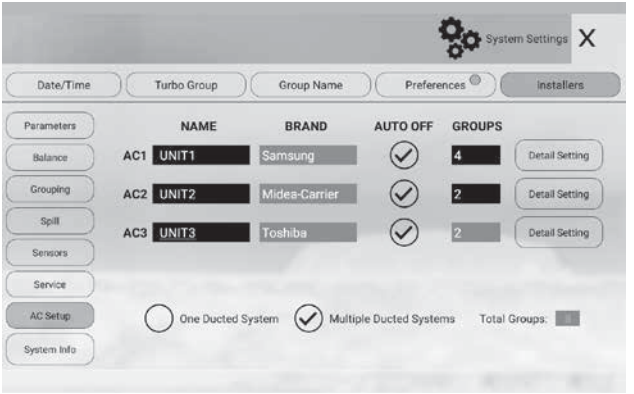
5.9.7 On Duration Time

This setting is to enable AC On duration time. When it's set to a given time (1-8 hours), the AC unit will be on for that period of time since it's turned on and then turn off automatically.



5.9.8 Multiple Ducted Systems

In multiple AC scenarios, the installation may be one ducted system or multiple separate ducted systems. If multiple ACs supply conditioned air to the same ducted system, this is classified as one ducted system and all ACs will have the same spill and Turbo settings. If each AC has its independent supply and return air ducts, it's classified as Multiple Ducted System. In this case each AC will have its own spill and Turbo settings. It's up to the installer to choose one ducted system or multiple ducted system.



5.9.9 Groups connected in each ducted system

In Multiple ducted systems, installers have to define the group numbers for each ducted system. The group number for each ducted system will help protect each system from potential blown-out (by spilling) and set up separate Turbo group. All zones from all ACs will be connected to the main module. If there are more than 8 zones, the zones after 8 will be connected to the extension module in sequential order.

5.10 System Info

Touching System Info menu will show current hardware and software versions of the system. If there is a new version of the the software, there will be a red dot on the Quick menu of the homepage. Following the red dot and prompts will bring up the update button for updating.

5.11 Setting up Wi-Fi Connection

The WiFi device is with the console which is an Android tablet. Connecting AirTouch 4 to the home router is the same as setting up WiFi for a normal Android tablet. It's in the Setting app on the tablet. If AirTouch 4 is running, minimize it and go to Setting, find WLAN and the available WiFi network will appear. Choose the correct one and key in the password to connect. After successful connection, the Wi-Fi logo will appear on the status bar. AirTouch 4 apps from Apple Store or Play Store can be run from mobile devices now. The connection will stay permanent till the setting changes on the home router such as SSID, password, security levels, filters and others. The connection will automatically resume after power off and on cycle.

5.12 Testing Damper On/Off

a) Switch on the air conditioner.

b) Enter the home screen of AirTouch 4.

c) Touch the group buttons to turn groups on or off to check if the dampers are correctly connected by feeling the air at the outlet.

d) The Turbo group can be tested by selecting the relevant chosen group as Turbo mode in the 'Settings' and then press the group button until active turbo mode is displayed on the screen for that particular group.

6. Wiring Diagrams

- All AC Units must be initialised with Standard AC Wall Controller connected to AC Indoor Unit to complete necessary field settings and confirm the AC runs normally

- Turn OFF power and disconnect Standard AC Wall Controller from AC Indoor Unit if it's not going to be used.

- Refer to relevant AC Gateway Drawings below to connect Gateway.

- Refer to Dip Switch settings (if applicable) on the Gateway Drawings below.

- After completing wiring and setting the dip switches, turn power ON. AC Indoor, Gateway and AirTouch 4 can be powered up at the same time, but power up AC Indoor and Gateway no later than the AirTouch 4.

(657212) Commissioning notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position if the Daikin wall controller is connected as Master. Make sure all wires are connected properly.

2. Initialise the AC Unit with Daikin AC Wall Controller connected. The Daikin wall controller can be wired to P1 and P2 in parallel with the gateway.

3. If the Daikin wall controller is not going to be used after commissioning and the return air sensor is used for AC temperature control. Turn off power and disconnect the AC Wall Controller from AC Indoor Unit, and set position 1 of S1 on the gateway to ON (1). Then restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.

4. If AirTouch 4 sensors are used for AC temperature control:

- Settings on the Daikin AC wall controller: Set thermostat sensor to the remote controller (Go to Field Setting, find Mode 10 (20), code 2 and change its value to 01 or 03 depending on the wall controller model numbers, if there is any doubt, please call Daikin to confirm). Remove it after the setting if the Daikin wall controller is not going to be used after commissioning. Otherwise, set Daikin AC wall controller as sub controller.
- Settings on the gateway: set position 1 and 4 on the gateway to ON (1)

- Settings on the AirTouch 4 screen: Select the proper sensor or combination from the Control Thermistor list for AC control in the Installer's AC setting

- Restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.

(657212) Wiring Diagram

Master/Slave Setting		
S1	S4	Gateway As
0111	0000	Slave
1111	0000	Master

Gateway Address Setting	
S3	Gateway Address
10000001	1
01000001	2
11000001	3
00100001	4

Note: 0-Off, 1-On

1. Initialise the AC Unit with Daikin AC Wall Controller connected to set the field settings as required. Turn off power and disconnect the AC Wall Controller from AC Indoor Unit.

2. Wire AirTouch, gateway and AC indoor as per diagram and leave the dipswitches on the gateway at their default position if the Daikin wall controller is not connected. Make sure all wires are connected properly. If the gateway address is not 1, follow the Gateway Address Setting table to set dipswitch S1.

3. If the gateway is set to Master (default), set the Daikin wall controller to Sub. If AirTouch sensors are used for AC temperature control:

   Settings on the Daikin AC wall controller: Make sure the Daikin wall controller is connected as Main. Go to Field Setting, find Mode 10 (20), code 2 and change its value to 03 to set thermostat sensor to the remote controller. Remove it after the setting if the Daikin wall controller is not going to be used. Otherwise, set Daikin AC wall controller as sub controller.

   Settings on the gateway: set position 4 of S2 on the gateway to ON (1) (default)

   Settings on the AirTouch screen: Select the proper sensor or combination from the Installer's AC setting.

   Restart the AC and gateway first and then power up AirTouch. Or power them up at the same time.

4. If Daikin wall controller is to be used with AirTouch as Main, set the gateway to Sub. If AirTouch sensors are used for AC temperature control:

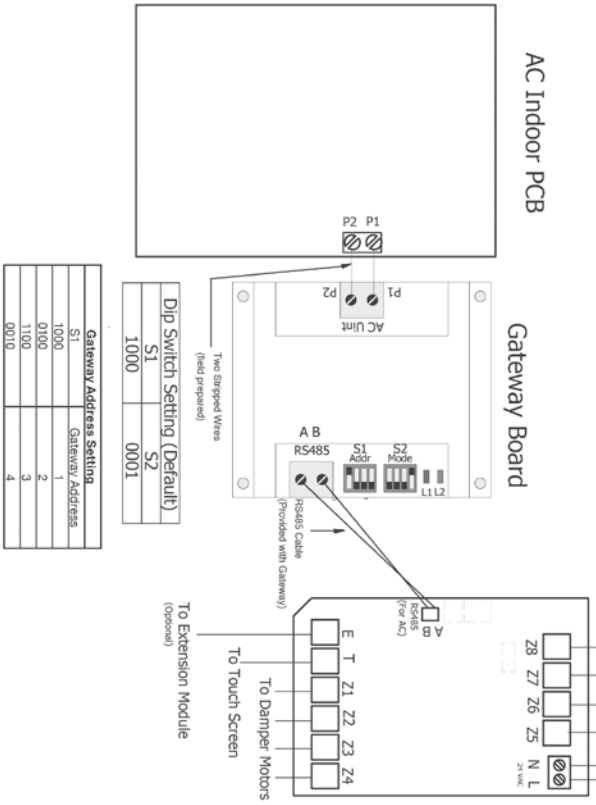
   Settings on the Daikin AC wall controller: Go to Field Setting, find Mode 10 (20), code 2 and change its value to 03 to set thermostat sensor to the remote controller.

   Settings on the gateway: set position 4 of S2 on the gateway to Off(0)

   Settings on the AirTouch screen: Select the proper sensor or combination from the Installer's AC setting

   Restart the AC and gateway first and then power up AirTouch. Or power them up at the same time.

(657237) Wiring Diagram



Dip Switch Setting (Default)	
S1	S2
1000	0001

Gateway Address Setting	
S1	Gateway Address
1000	1
0100	2
1100	3
0010	4

Firmware Version After 2.3

Important: It's strongly recommended NOT to use the Panasonic wall controller and the gateway at the same time. It may damage the indoor PCB in long term and in extreme weather conditions.

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position (gateway as Slave). Make sure all wires are connected properly.

2. Initialise the AC Unit with Panasonic AC Wall Controller connected. The Panasonic wall controller can be wired to R1 and R2 in parallel with the gateway

3. Remove the Panasonic wall after commissioning and set the gateway as the Master by switching position one of S1 to On (1)

4. If AirTouch 4 sensors are to be used for AC temperature control, go to AirTouch 4 AC setting and select proper sensor/combination.

Panasonic

(657213) Wiring Diagram
Firmware Version After 2.3

Master Slave Selection	
S1	Gateway As
01000010	Slave
11000010	Master

Gateway Address Setting		
S2	S3	Gateway As
10000000	000	1
01000000	000	2
11000000	000	3
00100000	000	4

Note: 1. 0-Off, 1-On
2. This applies to firmware version after V2.3

Panasonic (657213) Commissioning notes

Firmware Version Before 2.3

Important: It's strongly recommended NOT to use the Panasonic wall controller and the gateway at the same time. It may damage the indoor PCB in long term and in extreme weather conditions.

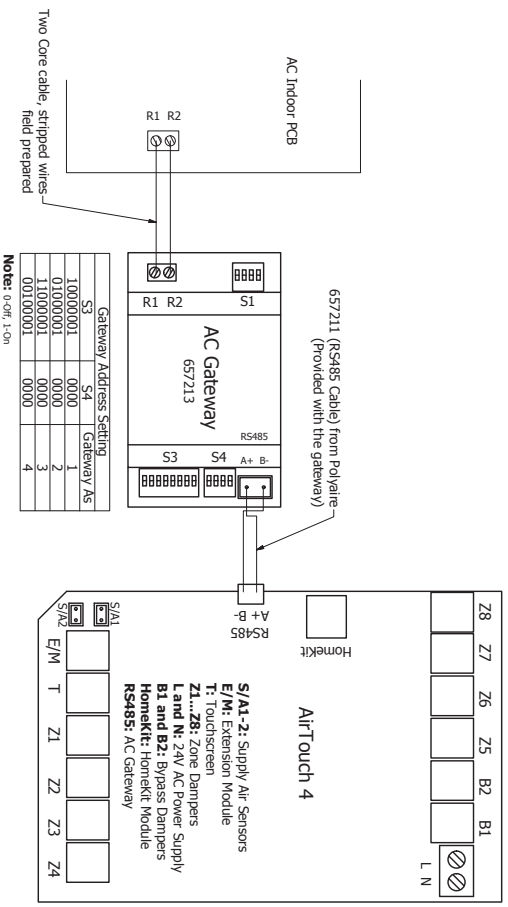
1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Initialise the AC Unit with Panasonic AC Wall Controller connected. The Panasonic wall controller can be wired to R1 and R2 in parallel with the gateway

3. Remove the Panasonic wall controller after commissioning

4. If AirTouch 4 sensors are to be used for AC temperature control, go to AirTouch 4 AC setting and select proper sensor/combination.

Panasonic (657213) Wiring Diagram
Firmware Version Before 2.3



Gateway Address Setting		
S3	S4	Gateway As
10000001	0000	1
01000001	0000	2
11000001	0000	3
00100001	0000	4

Note: 0-Off, 1-On

Panasonic (657238) Commissioning notes

IMPORTANT: It's strongly recommended NOT to use the Panasonic wall controller and the gateway at the same time. It may damage the indoor PCB in long term and in extreme weather conditions.

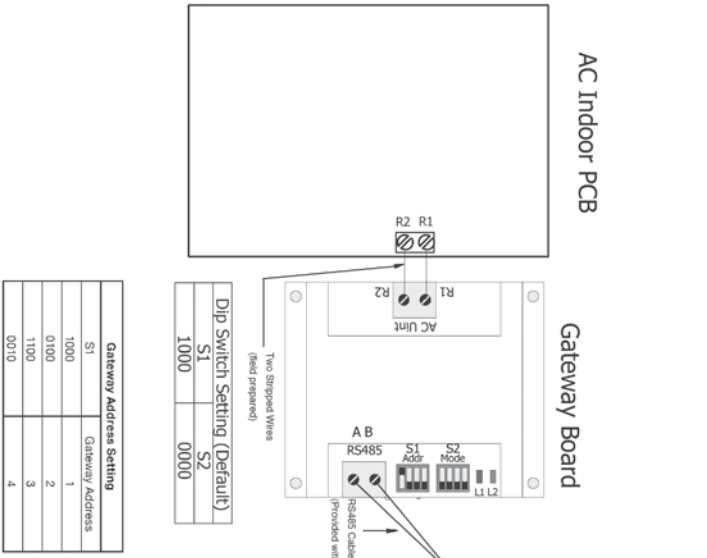
1. Wire AirTouch, gateway and AC indoor as per diagram and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly. If the gateway address is not 1, follow the Gateway Address Setting table to set the address.

2. Initialise the AC Unit with Panasonic AC Wall Controller connected to do the required field settings. The Panasonic wall controller can be wired to R1 and R2 in parallel with the gateway.

3. Remove the Panasonic wall controller after commissioning.

4. If AirTouch sensors are to be used for AC temperature control, go to AirTouch AC setting and select the proper sensor.

Panasonic (657238) Wiring Diagram



Dip Switch Setting (Default)	
S1	S2
1000	0000

Gateway Address Setting	
S1	Gateway Address
1000	1
0100	2
1100	3
0010	4

TOSHIBA
AIR CONDITIONING

(657218) Commissioning notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. If the indoor unit is a VRF, please set the correct indoor type as per the Indoor Type Setting table in the wiring diagram. Make sure all wires are connected properly.

2. Initialise the AC Unit with Toshiba AC Wall Controller connected. The Toshiba wall controller can be wired to A and B in parallel with the gateway

3. Remove the Toshiba wall controller if it is not to be used after commissioning. Otherwise, Toshiba's wall Controller should be always set as Follower

4. If AirTouch 4 sensors are used for AC temperature control, go to AirTouch 4 AC Setup in Installer's Settings and chose the proper temperature sensor for AC control.

TOSHIBA
AIR CONDITIONING

(657218) Wiring Diagram

Indoor Type Settings	
S1	S4
00xx	0000
10xx	0000
01xx	0000
11xx	0000

Indoor Type
Not Defined
VRF-SMMSi
RAV
VRF-SMMS/SHRM

Gateway Address Setting	
S3	Gateway Address
10000001	1
01000001	2
11000001	3
00100001	4

Note: 0-Off, 1-On, x-On or Off

FUJITSU (657214) Commissioning notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Initialise the AC Unit with Fujitsu AC Wall Controller connected. The Fujitsu wall controller can be wired to B, W and R in parallel with the gateway

3. If Fujitsu wall controller is not to be used after commissioning and the return air sensor is used for AC temperature control, set position 1 of S1 on the gateway to ON (1) and restart the AC and AirTouch 4.

4. If AirTouch 4 sensors are used for AC temperature control:
   Settings on the AC wall controller: Set thermostat sensor to the remote controller (Go to Service->Function Setting, find Function No 42, and set its value to 01. Then go to Submenu and change “R. C. sensor control” from Off to On).
   Remove the Fujitsu wall controller if it’s not to be used after commissioning.
   Settings on the Gateway: Set position1 of S1 to ON (1)
   Settings on the AirTouch 4 screen: Go to AC Setup and select the proper temperature sensor for AC control Restart the AC and gateway first and then power up AirTouch 4 or power them up at the same time

(657214) Wiring Diagram

Master/Slave Settings		
S1	S4	Gateway As
0000	0000	Slave
1000	0000	Master

Gateway Address Setting	
S3	Gateway Address
10000001	1
01000001	2
11000001	3
00100001	4

Note: 0-Off, 1-On

FUJITSU (657239) Commissioning notes

1. Initialise the AC Unit with Fujitsu AC Wall Controller connected to set the required field settings. Then disconnect the AC wall controller if it's not to be used.
2. Wire AirTouch, gateway and AC indoor as per diagram and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly. If the gateway address is not 1, follow the Gateway Address Setting table to set dipswitch S1
3. In the case the gateway is master and Fujitsu wall controller is connected as slave (sub) or not connected: If AirTouch sensors are used for AC temperature control:

   Settings on the AC wall controller: Have the Fujitsu wall controller connected as Master and set thermostat sensor to the remote controller (Go to Service->Function Setting, find Function No 42, and set its value to 01. Then go to Submenu and change "R. C. sensor control" from Off to On). Then set the wall controller back to Slave (sub) or remove it if it's not to be used.

   Settings on the Gateway: Set position 4 of S2 to ON (1) (Default)

   Settings on the AirTouch screen: Go to AC Setup in the Installer settings and select the proper temperature sensor for AC control.

   Restart the AC and gateway first and then power up AirTouch or power them up at the same time.

   If AirTouch sensors are not used and the Fujitsu wall controller is not connected, the AC control sensor has to be set to AC return air sensor. The AirTouch screen will show AirTouch sensors' temperature as Home Temp or Control Sensor value.
4. In the case the gateway is connected as Slave and Fujitsu wall controller is connected as Master. If AirTouch sensors are used for AC temperature control:

   Settings on the AC wall controller: Set thermostat sensor to the remote controller (Go to Service->Function Setting, find Function No 42, and set its value to 01. Then go to Submenu and change "R. C. sensor control" from Off to On).

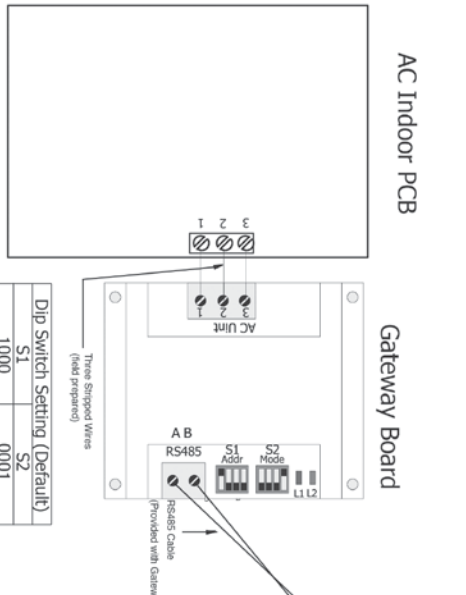
   Settings on the Gateway: Set position 4 of S2 to Off (0)

   Settings on the AirTouch screen: Go to AC Setup in the Installer settings and select the proper temperature sensor for AC control.

   Restart the AC and gateway first and then power up AirTouch or power them up at the same time.

If AirTouch sensors are not used for AC temperature control and the AC is set to use its return air sensor as control sensor, the AirTouch screen will show AirTouch sensors' temperature as Home Temp or Control Sensor value.

(657239) Wiring Diagram



Dip Switch Setting (Default)	
S1	S2
1000	0001

Gateway Address Setting	
S1	Gateway Address
1000	1
0100	2
1100	3
0010	4

(657215) Commissioning notes

1. Beware of the different dip switch settings for firmware before 2.0 and after 2.0 (including 2.0)

2. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

3. Initialise the AC Unit with ME AC Wall Controller connected.

4. Remove the ME wall controller if it is not to be used after commissioning. Make sure the AC control temperature is measured from the indoor unit return air.

5. Go to AC Setup and select the proper temperature sensor for AC control.

(657215) Wiring Diagram

Firmware before V2.0:

Gateway Address Setting		
S3	S4	Gateway Addr
10000000	1000	1
01000000	1000	2
11000000	1000	3
01000000	1000	4

Note: 1. 0-Off, 1-On
2. S1 is not used here

AC Indoor PCB

CN92
CN105

Cable with plugs
(provided with the gateway)

657211 (RS485 Cable) from Polyaire
(Provided with the gateway)

AC Gateway
657215

To AC

S1

RS485

S3 S4 A+ B-

RS485 A+ B-

HomeKit

AirTouch 4

Z8 Z7 Z6 Z5 B2 B1

L N

S/A1-2: Supply Air Sensors
E/M: Extension Module
T: Touchscreen
Z1...Z8: Zone Dampers
L and N: 24V AC Power Supply
B1 and B2: Bypass Dampers
HomeKit: HomeKit Module
RS485: AC Gateway

S/A1
S/A2
E/M T Z1 Z2 Z3 Z4

Firmware V2.0 and after:

Fan Speed Settings		
S1	S4	Total Fan Speed numbers
0000	0000	3 or 4
0001	0000	2

Gateway Address Setting	
S3	Gateway Address
10000001	1
01000001	2
11000001	3
00100001	4

Note: 0-Off, 1-On

(657219) Commissioning notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Initialise the AC Unit with LG AC Wall Controller connected. The LG wall controller can be wired to CN-REMO in parallel with the gateway.

3. If the LG wall controller is not going to be used after commissioning and the return air sensor is used for AC temperature control: Turn off power and disconnect the AC Wall Controller and set position 1 of S1 on the gateway to ON (1). Then restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.
4. If AirTouch 4 sensors are used for AC temperature control:

   Settings on the LG AC wall controller: Set thermostat sensor in the remote controller (Go to Function Setting (Zone->Setting->Sensor), change it to REMO. Remove it after the setting if the LG wall controller is not going to be used after commissioning.

   Settings on the gateway: set position 1 of S1 on the gateway to ON (1)

   Settings on the AirTouch 4 screen: Go to AC Setup and select the proper temperature sensor for AC control.

   Restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.

(657219) Wiring Diagram

Master/Slave Settings		
S1	S4	Gateway AS
0000	0000	Slave
1000	0000	Master

Gateway Address Setting	
S3	Gateway Address
10000001	1
01000001	2
11000001	3
00100001	4

Note: 0-Off, 1-On

Commissioning Notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram in the drawing and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Set positions 2 and 3 of S1 on the gateway as per the table below according to the indoor fan speeds:

Switches of S1 [1 2 3 4]	Binary Value	Description
x off off x	x00x	Indoor unit has 1 Fan Speeds
x off on x	x01x	Indoor unit has 2 Fan Speeds
x on off x	x10x	Indoor unit has 3 Fan Speeds
x on on x	x11x	Indoor unit has 4 Fan Speeds

3. Initialise the AC Unit with MHI AC Wall Controller connected. The MHI wall controller can be wired to X and Y terminals in parallel with the gateway.
   If the MHI wall controller is not going to be used after commissioning and the return air sensor is used for AC temperature control:
   Turn off power and disconnect the AC Wall Controller from AC Indoor Unit, and set position 1 of S1 on the gateway to ON (1). Then restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.

4. If AirTouch 4 sensors are used for AC temperature control:
   Go to AirTouch 4 AC setting and choose the proper sensor from the Control Thermistor list on AC setup.
   MHI gateway firmware versions:
   V0.13 and below will not work RC-EX3
   V0.14 and higher works with RC-EX3

(657216) Wiring Diagram

HITACHI (657220) Commissioning Notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Initialise the AC Unit with Hitachi AC Wall Controller connected. The Hitachi wall controller can be wired to A and B terminals in parallel with the gateway.

3. If the Hitachi wall controller is not going to be used after commissioning and the return air sensor is used for AC temperature control: Turn OFF power and disconnect the AC Wall Controller from AC Indoor Unit, and set position 1 of S1 on the gateway to ON (1). Then restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.

4. If AirTouch 4 sensors are used for AC temperature control:

- Settings on the Hitachi AC wall controller: Set thermostat sensor to the remote controller (Go to Function Setting, find Item C8, and change its value to 01). Remove it after the setting if the Hitachi wall controller is not going to be used after commissioning. Otherwise, set Hitachi AC wall controller as sub controller (go to Function Setting, find Item code F2, and set its value to 01)

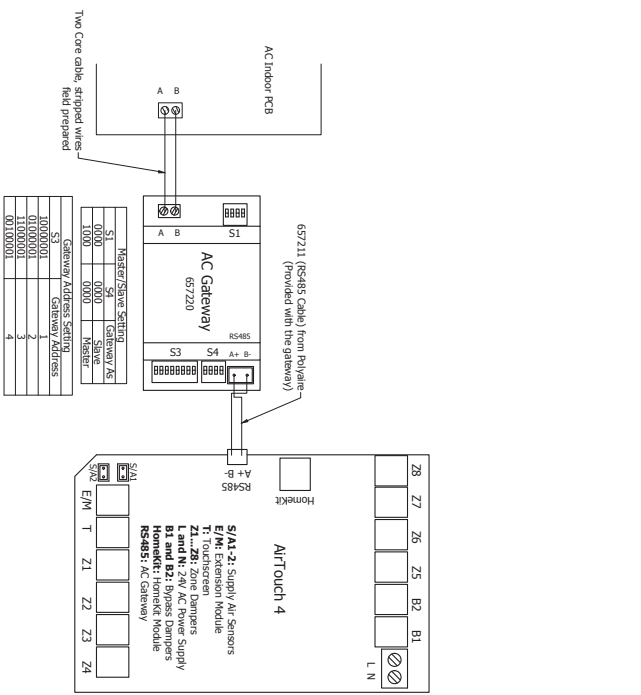
- Settings on the gateway: set position 1 of S1 on the gateway to ON (1)

- Settings on the AirTouch 4 screen: Select the required temperature sensor from the Control Thermistor list in AC setup in the Installer's settings on AirTouch 4

- Restart the AC and gateway first and then power up AirTouch 4. Or power them up at the same time.

- Note: Availability of AUTO mode in indoor unit depends on indoor unit configuration (configuration is made from Hitachi wall controller). If it's not configured, changing to Auto will be accepted, but indoor unit will continue in previous mode.

HITACHI (657220) Wiring Diagram



(657222) Commissioning Notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Change mode 10 value to 01 via AC Wall Controller.

3. If AC Wall Controller is not going to be used after commissioning, change mode 00 value to 01 via AC Wall Controller. Then remove the AC wall controller

Braemar HEATING COOLING GREE

(657222) Commissioning Notes

(657222) Commissioning Notes

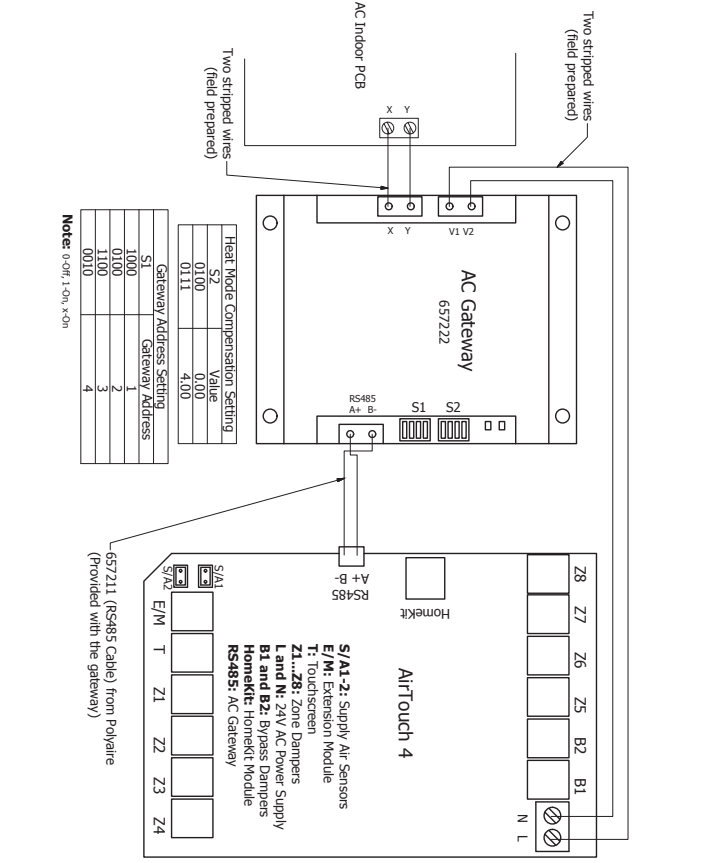
1. Wire AirTouch 4, gateway and AC indoor as per diagram below and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Check the temperature compensation value setting (SW6 switch) on the indoor PCB and make sure its value is set to EEPROM DEFAULT as per the instructions on the wiring label at the back of the electrical box cover.

3. In default, AC will use its own return air sensor as control sensor. Installers can set the AC control thermistor to an AirTouch 4 sensor by going to AC setup in Installer's Settings of AirTouch 4.

4. If the sensor on the AC wall controller is used for AC control (Follow Me feature on the AC wall controller), please: Press the Follow Me button on the wall controller to activate Follow Me. The displayed value for home temperature will be the measured temperature where the AC wall controller installed.

(657222) Wiring Diagram



Heat Mode Compensation Setting	
S2	Value
0100	0.00
0111	4.00

Gateway Address Setting	
S1	Gateway Address
1000	1
0100	2
1100	3
0010	4

Note: 0-Off, 1-On, x-On

NASA (657229) Commissioning Notes

NOTE: This gateway will only work with units which have 16kW and above capacity with MWR-WE10N wall controller (NASA protocol). Samsung wall controller cannot be used at the same time.

1. Wire AirTouch, gateway and AC indoor as per diagram and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Initialise the AC Unit. If AirTouch 4 sensors are used for AC temperature control:

- Settings on the AirTouch 4: choose from Control Thermistor list in the Installer's AC Setup.

- Settings from the Samsung wall controller: Go to Installation/Service Modes by pressing and holding ESC and Set buttons together, find Main Menu 1, Submenu 2, and then set Data bit 1 to 1. After the setting, remove the Samsung wall controller and use the gateway only.

- Restart the AC and gateway first and then power up AirTouch. Or power them up at the same time.

NASA (657229) Wiring Diagram

Gateway Address Setting	
S1	Gateway Address
1000	1
0100	2
1100	3
0010	4

Note: 1. 0-Off, 1-On, x-On
2. Samsung wall controller cannot be with the gateway at the same time

No-NASA (657217) Commissioning Notes

NOTE: This gateway will only work with units which have 14kW and below capacity with wall controller MWR-WE10 (Non-NASA protocol which is used in the latest models with capacity of 14kW and below and some of the old indoor models starting with "NS").

Commissioning Notes

1. Wire AirTouch 4, gateway and AC indoor as per diagram and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.

2. Initialise the AC Unit with Samsung AC Wall Controller connected.

3. If AirTouch 4 sensors are used for AC temperature control:

- Settings on the AirTouch screen: choose from Control Thermistor list in the Installer's AC Setup.

- Settings on the Samsung wall controller: Go to Installation/Service Modes by pressing and holding ESC and Set buttons together, find Main Menu 1, Submenu 2, and then set Data bit 1 to 1.

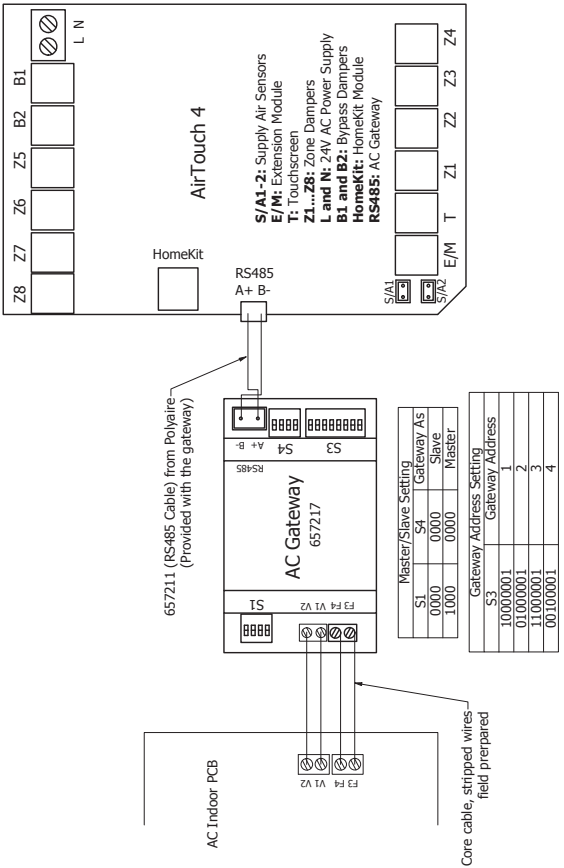
- Restart the AC and gateway first and then power up AirTouch. Or power them up at the same time.

There are two versions of the gateway. They are interchangeable but please follow the wiring as per below:

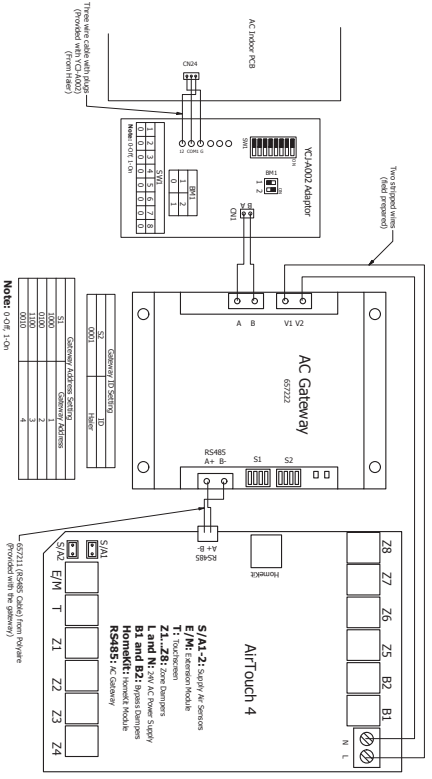
No-NASA (657217)
Wiring Diagram - New Version

NOTE: If Samsung wall controller is used with the gateway, the Samsung wall controller has to be set to Master and the gateway has to be set to Slave by switching position 4 of S2 to 0 (Off).
In this situation AirTouch 4 sensors cannot be used for AC Temperature Control.

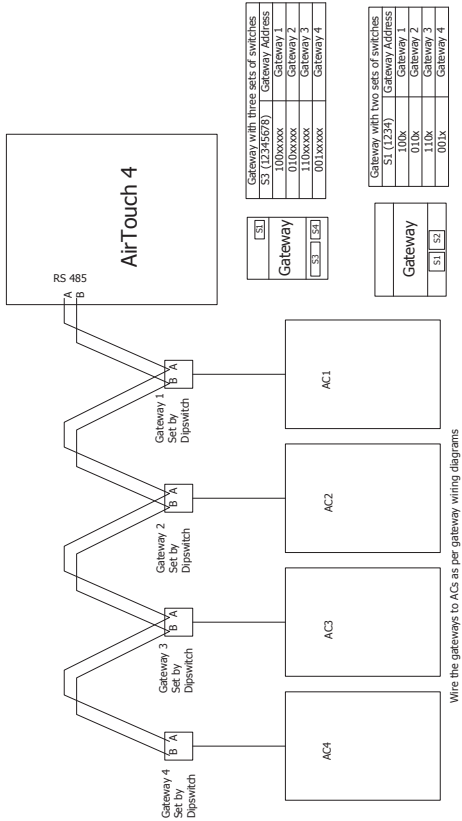
No-NASA (657217)
Wiring Diagram - Old Version



1. Wire AirTouch, gateway, YCJ-A002 (supplied by Haier) and AC indoor as per diagram. Make sure all wires are connected properly
2. Set the dipswitch settings on the YCJ-A002 and the gateway as shown on the drawing as required
3. In default, AC will use its own return air sensor as control sensor. Installers can set the AC control thermistor to an AirTouch 4 sensor by going to AC detail setting in Installer's Settings of AirTouch 4.



Multiple Gateways



If AirTouch 4 is to control more than one AC unit, gateways for multiple ACs can be joined in serial as shown in the wiring above. Each gateway will be set with a unique gateway address and as required for the AC connected.

7. Downloading and Installing AirTouch 4 Application on Mobile

AirTouch 4 application can be downloaded from the following location.
The application is available for free of charge.

For Android Phones: Go to Google Play store from your Android phone and search for AirTouch 4 application developed by Polyaire. After downloading the application, open the file and follow the prompts to install the application on your phone. The lowest Android version AirTouch 4 app supports is Android 4.0.3.

For iPhones: Go to the App store and search for AirTouch 4 application developed by Polyaire. Tap on the AirTouch 4 app and press Install. Enter your iTunes password and the AirTouch 4 app will be automatically downloaded and installed on your iPhone. The lowest iOS system AirTouch 4 app supports is iOS 8.0.

When mobiles and AirTouch 4 are all connected to the same WiFi and with the same band, the AirTouch 4 app will run straight away and the control interface will come up. If the mobiles and AirTouch 4 are not in the same WiFi network, you'll need internet connection (by other WiFi or 3G/4G network) and password to run the app. If it's the first time to run the app via internet and the app has not successfully run on the same WiFi network as the AirTouch 4 before, you will need the device ID which is an eight digit number and password to run the app successfully. The device ID can be found:

1. On the console when you get to the Preference setting page

2. On the PCB of main module of AirTouch 4.

NOTE: Read the User Manual for accessing various functions of the Mobile Apps.

8. Troubleshooting

Problem	Solution
Error Code FFFF or FFFC	Gateway is connected but AC is not powered or the communication to AC is lost.
Error Code FFFE	Communication to gateway is lost. Gateway switch setting issue or faulty gateway.

1300 980 656

Liability and Disclaimer

All specifications and procedures are correct at time of publication, but are subject to change without notice. Please read the instructions before installing this Zone Control System. Polyaire Pty Ltd does not accept any responsibility for loss or damage that may occur as a result of the incorrect installation or operation of this AirTouch Control System.

Polyaire Pty Ltd
11-13 White Road
Gepps Cross South Australia, 5094
Tel: (08) 8349 8466 Fax: (08) 8349 8446

© Polyaire Pty Ltd 2020