



AirTouch 3

Zone Control System

Installation Manual



airtouch.net.au

Liability

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 of this AirTouch Control System.

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1) Application

AirTouch 3 is a fully featured system that is designed to manage the air flow from AC unit providing a balanced and managed airflow to all outlets. It is well suited to all ducted reverse cycle and heating systems in light commercial, residential and apartment applications.



2) Features

For Installers

- 24 volts for easy and safe installation and maintenance.
- User friendly 5" touch screen interface to simplify setup process.
- Supports up to 16 individual zones (Zone 1, 2...9, A, B...G) or 16 groups (Group 1, 2...9, A, B...G) with maximum of 4 zones in a group. Nine zones/groups and above will require an extension module.
- Remote zone balancing --- each zone's opening position can be programmed for balancing via touch screen between 5-100%.
- Auto spill - selectable zone dampers are forced open when all zones are turned off.
- Wireless group temperature sensors --- no hard wiring required for group temperature control.
- Selectable AC room temperature for AC control (some AC models only).
- RS485 interface for home automation integration.
- Dampers are connected directly to the main control module or its extension module for easy diagnosis.

For End Users

- User friendly large touch screen control interface
- Wireless remote control using smart WiFi enabled devices (iPhone, Android and tablets)
- Control from anywhere over internet*
- Intuitive user interface.
- Control AC unit at different levels (Optional, On/Off only or full AC control, works with certain brands and models only) with auto-off option when all zones are closed.
- Control up to two AC units (Extension module required).
- Individual group temperature control (with temperature sensors) or airflow to individual groups.
- Favourites (up to four) to quickly set different air conditioning requirements for different scenarios.
- Receiving alert via mobile (need setup) when home temperature is very high.
- Child lock to protect air conditioning system.
- Date/Time synchronizing with mobile (no backup battery required).
- Colour LCD for clearer display.
- Personalized system settings and group labelling.
- Wall mounted with up to two touch screens available in a system.
- 5-1-1 Programmable On/Off time programs and AC Timer.
- One selectable turbo group to cool/heat a particular area quicker for each AC ducted system
- Half year, One year and Two year service alerts remind customers to call technician for cleaning and servicing AC system.
- All zones automatically resume their original on/off state once power is restored after power outage.

* Internet access will depends on the home router's capability and may result in about 25MB data usage per month.

3) Components

Note: Each component is sold separately or in kits.

3.1 Wall Controller (Touch Screen)

Users can input control commands from the wall controller to turn a group/zone or AC on and off.

It is used to input all program parameters. The colour LCD displays clock, zone status, WiFi status, AC status, temperature and other statuses.



3.2 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.



3.3 Motorized Damper (Bright Green)

Motorized damper drives the blade of the damper to turn the air supply on/off.



3.4 Cables

Cables with left latch (for data) or central latch (for control) plugs connect the main control module, extension module (if applicable), touch screen, and motorized damper together.



3.5 Supply Air Sensor (optional)

Supply air sensor measures the temperature of the supply air for auto mode recognition.



3.6 Power Supply

24VAC transformers provide power to the main control module and extension module.



3.7 AC Control Cable kit (Optional, On/Off only)

AC control cable kit is used to connect the AirTouch 3 main module with the AC Indoor unit board (only for some models of AC manufacturers) to realize the On/Off only control of AC's.



3.8 AC Gateways (Optional, Full control)

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 and Samsung.

Each gateway comes with a RS485 cable for connecting the gateway with AirTouch 3.

Some gateways may have a cable with special plugs for connecting the gateway to AC indoor PCB.



3.9 Wireless Temperature Sensor

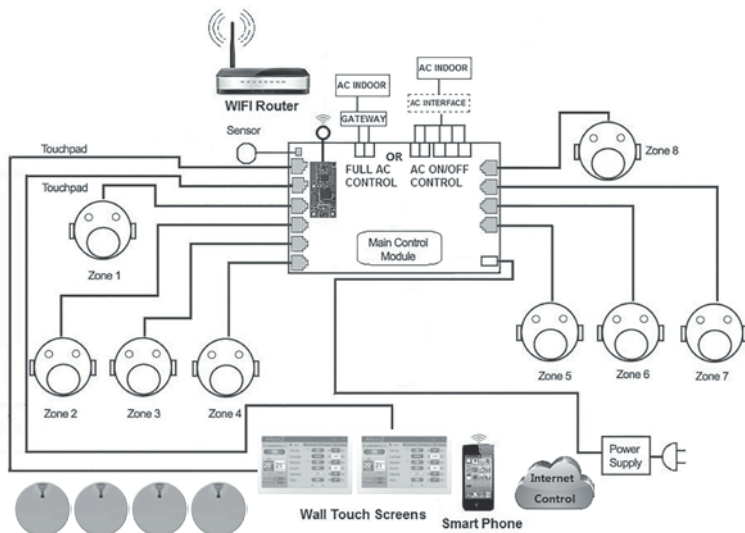
Wireless sensors are used for group temperature control. Each group can have up to two wireless temperature sensors.

The wireless sensors send measured room temperature back to main module regularly. They are driven by button type battery and have dipswitches for choosing communication channel and identification.



4) Configuration

AirTouch 3 is a star architecture system that allows communications between the AirTouch 3 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 touch screens. Figure below shows the connection of devices such as the WiFi router, AC indoor PCB, extension module, two touch screens, and eight dampers to the main module.

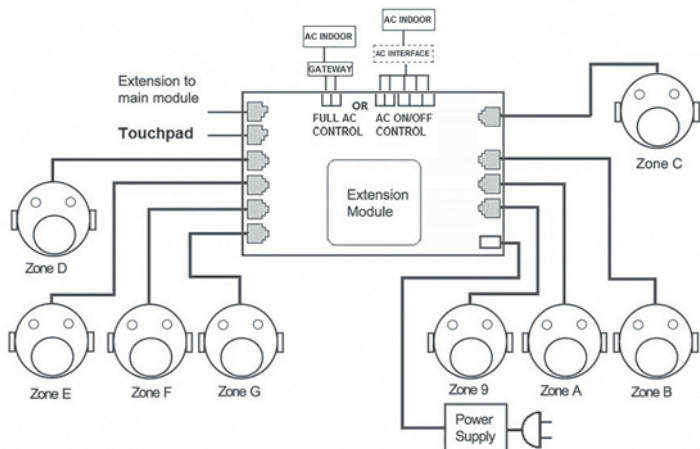


Eight motorized dampers can be connected to the main control module.

Nine dampers and above (up to 16) will need the extension module.

The wiring of the AirTouch 3 system is straightforward. A cable with central latched plugs connects a motorized damper to the relevant output port clearly marked on the main control or extension module.

Figure below shows the connection of eight dampers to the extension module.



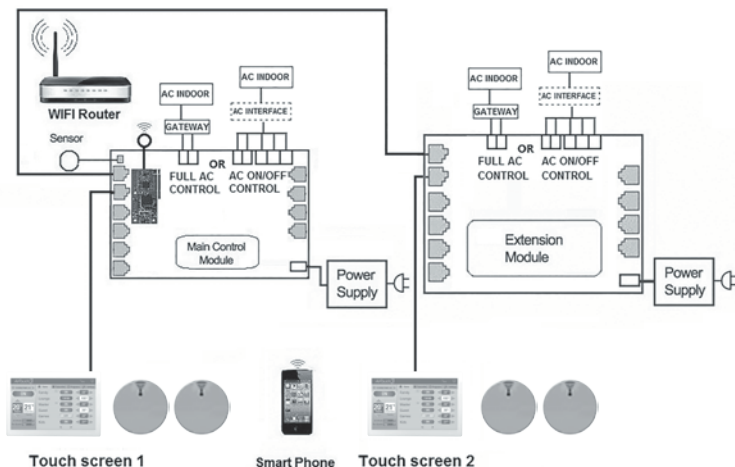
If there is another AC connected to the extension module, it can either be to the On/Off port or RS485 terminals. This depends if the relevant gateway is used. Please see AC wirings for details in section 7.9.

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

Up to two touch screens can be joined in a system. The two touch screens can be connected directly to the main module and extension module if it is installed.

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

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



5) Pre-Installation

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

- 5.1 Decide how many zones (dampers) are to be controlled in the system.
- 5.2 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).
- 5.3 Record the above mentioned information to table 1 and 2 on page 18 in the User manual and to the table on the sticker of the Main Control Module.
- 5.4 Setup the Wi-Fi connection before installing the AirTouch 3 main module into the ceiling. Place the main module next to the home router and follow the Wi-Fi setup process from Page 25 of this manual. This will help eliminate Wi-Fi set-up problems once the module is installed into the ceiling.

After setting up the WiFi connection, position the main module in a location where it will be installed and within the effective range of the home WiFi router. This can be done by checking the WiFi logo on the touch screen after placing the main module where it's going to be installed.

The selected position is fine if the WiFi logo appears on the touch screen after powering up the AirTouch 3 and connecting it to the touch screen. Otherwise, please move the main module closer to the home router and try it again till the WiFi logo appears on the touch screen.



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 Cable tester available from Polyaire (Item: 657089).

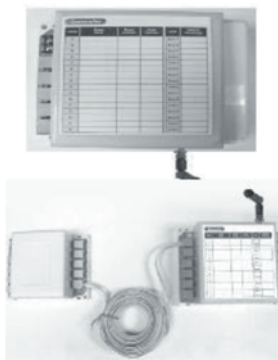


6) Component Installation

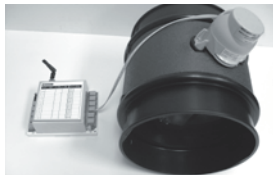
- 6.1 After setting up WiFi for the system as specified on Page 25, mount the main control module and/or extension module (if using more than 8 zones) by screwing the boxes to a roof frame or Polyaire Diffusion Fitting (PDF).

NOTE: Please keep the main module away from the transformer and metal as far as possible. Please also place the main module in a fairly centralised position to all wireless sensors. These arrangements will help maintain robust communications between the wireless sensors and the main module.

- 6.2 Remove the two side covers on the main control module so that all LEDs and sockets for zone dampers are exposed.



- 6.3 If extension module is used, connect main module to extension module at 'E' port on both modules with a One metre left latched cable (provided).



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



- 6.5 Repeat step 6.4 to connect other zone dampers to their relevant zone ports on the main control module and extension module.

- 6.6 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 control module (Optional).

- 6.7 Connect the touch screen to the 'T' port on the main module. If two touch screens are used, connect the touch screens to T1 and T2/E of the main and extension modules if the extension module is installed.



- 6.8 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.



- 6.9 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 28-47 of this manual.

- 6.10 If both transformers (main module and extension module) share the same power switch, turn the power on.

(IMPORTANT NOTE) If NOT, switch on the power to extension module first. Then turn on the power to main module.

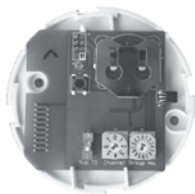
Otherwise, the extension module may NOT be initialized properly. Red LED on the main module (and extension module) should be on and the system will start initializing & finish in about 30 seconds after power on.

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

- 6.12 Turn the cover of the wireless temperature sensor anti-clockwise to separate it from the base. Install base with screws in proper positions where there is no direct sun, no draft and about 1.5m above ground.

Set the correct communication channel and 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 turn the cover clockwise to position to complete the sensor installation.

- 6.13 Record the grouped zones and balancing details on the sticker off the Main Control Module after commissioning the system.



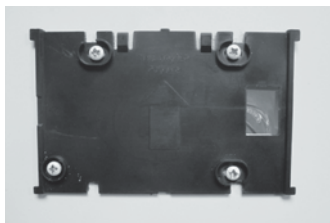
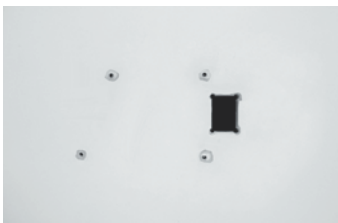
6.14 Fit the Touch Screen to wall

The plastic casing of the touch screen consists of two halves. The front cover contains the PCB board along with the LCD/touch screen. 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 touch screen on the wall. Follow the steps below to carefully install the touch screen to the wall:

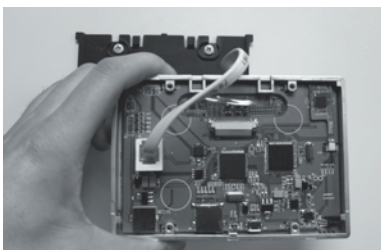
- a) Slide the back base to bottom side to clear the stops on the front cover
- b) Remove the base from the front cover
- c) Position the back base on the wall where the cable is (about 1.5m high from the floor). Ensure it is away from any heat or cool source and mark the cable hole and screw holes.

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

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

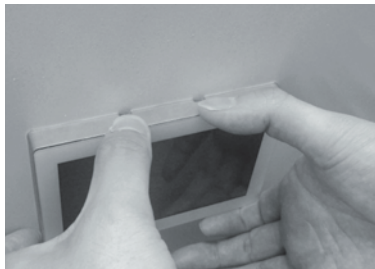


- e) Retrieve the touch screen cable (from main control module) out of the cable hole and plug it into the touch screen.



- 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.

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



7) Recommended Commissioning Procedure

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. Touching Settings tab will bring up user's settings and the Installer's.



7.1 Parameters



7.1.1 Touchpad in Group

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

7.1.2 Total Groups in the System

For the purpose of group status display, 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.

Press Up or Down buttons next to the Total Groups to change the total number of groups in the system. The selectable number is from 1 to 16.

7.1.3 Touchpad Address

Up to two touch screens can be installed in one AirTouch 3 system.

Each touch screen has a default address of '1'. During commissioning each touch screen should be assigned a unique address for communicating with the main control module properly. Touch the Up and Down buttons next to Touchpad Address to select the touchpad address from 1 to 2.

NOTE: Each touch screen must have a unique address.

Two touch screens with the same address will cause communication problems between the main control module and the touch screens.

7.1.4 Balancing

Remote balancing feature of AirTouch 3 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 5% and 100%. The balancing settings can be conducted on the touch screen as below.

- In 'Settings' screen, touch Parameters tab.
- Touching Balance Start button will show a prompt for about 15 seconds and then enter the 'Balancing' screen.



- Click the edit field to select the zone to be balanced, the field will be highlighted and the value wheel will appear.
- Touch the value for the required balance percentage.
- Touch Back to go back to Parameters page

NOTE:

- The balancing menu will display all 16 zones irrespective of the number of zones actually present in the system.**
- The balancing percentages of the inactive zones remain locked and show as N/A.**
- 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 $\%OPEN \times \text{Balance \%}$.**

7.1.5 Installer Settings Password

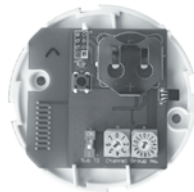
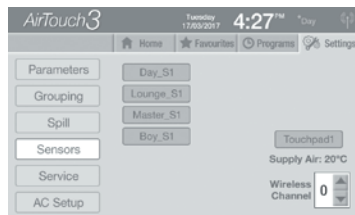
The password is used to prevent unauthorized changing of the installer settings. To reset this password, touch the password edit field in the 'Parameter' screen, and then type in the new password and touch 'Enter' key to confirm the password change.

Default password is 'Polyaire'.

7.2 Sensors

Temperature sensors are used for controlling group temperature if required.

There are wireless temperature sensors and wired temperature sensors (on touchpads). Each wireless sensor has dipswitches to select which channel to communicate with AirTouch 3 main module to avoid interference with nearby AirTouch 3 or other systems. It also has a dipswitch to link it to particular group where it is installed and to be used for temperature control of the group.



Wireless Sensor



Touchpad Sensor

7.2.1 Establish communication between main module and wireless sensors

The AirTouch 3 and wireless sensors have to be on the same channel to enable communications. The factory default channel is set to 0 on both the AirTouch 3 main module and wireless sensors. If there is no interference with other Airtouch 3 or wireless devices, there is no need to change the channel. If it needs to be changed, set the channel switch on the wireless sensor to the same number as the Wireless Channel on the Sensor setup page on the touch screen.

Channel: Set it to the same Wireless Channel number as shown on the Sensors page in Installer's setting on the touch screen. Default is set to 0 on both the dipswitch and touch screen.

7.2.2 Assign a sensor to a group

For a touch screen sensor, it's 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 zone number required.

Sub ID: Set it to off (default) for one (Sub ID 0) of the two sensors in the same group and set it to on for the other one (Sub ID 1). Only used when there are two wireless sensors in the same group.

Group No: Set it to the group where this sensor is used for group temperature control. Default is group 1 (dipswitch points to number 1). Position 0 is group 16 and position F is group 15.



7.2.3 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 setup page.

7.3 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:

- In 'Settings' screen, touch Grouping to enter 'Grouping' screen.
- Touch the edit field of the group
- and then touch + or - button to add or minus zones to the group
- Repeat steps b) and c) to define all groups.
- Touch the field after TC to choose wireless or touchpad sensors as control temperature for the group. If there is no sensor in the group, there will 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.

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.

7.4 Spill

Spill mode is a safety feature of the AirTouch 3 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 by the installer in the system when all groups are 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 automatically 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. In factory default, group 1 is chosen as spill group in one ducted system. In a two ducted system, group 1 and the lowest group in the groups for the second ducted system will be the spill groups for the two ducted systems respectively.



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 build up inside ducts if air conditioner is running.

7.5 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 touch screen 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 had 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:

- 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 Up and Down buttons to adjust Display and Running days.

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



Reminder information will be displayed on the area where the AC control is when the service is due for the length of display days (5 days in the example). Touch the close 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.

The running days show how many days having passed since the system has been commissioned or serviced. It will automatically start from 1 for every 728 days.

NOTE: Record the above parameters such as Grouped Zones & Balancing on the sticker of the Main Control Module and the System Configuration, Grouped Zones along with Named Groups, Balancing and Installer details to table 1, 2, 3 and 4 respectively on page 18 and 19 of the User manual for future reference.

7.6 Setting up AC Control (Optional)

If relevant gateways are connected to AirTouch 3 main module or extension module, AirTouch 3 will automatically recognize the connected AC brands. There is no need to select AC brands from the AC lists. The brands will be listed in inactive colour and cannot be changed. But the AC names are still editable. In this case, AirTouch 3 will have full control for the AC's such as operation modes, fan speeds and set point. The available gateways for the relevant AC's are Daikin, Panasonic, Fujitsu, Mitsubishi Electric, Mitsubishi Heavy Industries, Toshiba, LG, Hitachi and Samsung. The wiring diagrams for full AC control are on section 7.9.2.

If there is no gateway connected between indoor PCBs and AirTouch 3, the AC brands should be selected from the brand list in the AC setup section. The relevant wiring diagrams are on section 7.9.1. Carrier/Midea AC units don't need a gateway but AirTouch 3 has full control over them. Their wiring diagram is on page 37.



7.6.1 Name AC Units

The names of the AC can be edited as required. The default names are Unit and Unit 2 for AC1 and AC2 respectively. 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.

7.6.2 Select AC brands

It's required to select the Brand of the AC unit from a specified list to connect with the AirTouch 3 system if no gateway is used in the installation.

Before setting this up, ensure the AC indoor PCB is connected to the AirTouch 3 main module as shown in the wiring diagrams based on the selected unit. Ensure the AC unit is configured to work with a third party controller. The following are the options that can be selected from the list:

- | | |
|-----------------|-------------------------------|
| ✓ None | ✓ Mitsubishi Heavy Industries |
| ✓ Daikin | ✓ Mitsubishi Electric |
| ✓ Fujitsu | ✓ Panasonic S model |
| ✓ Hitachi | ✓ Samsung with MIM-B14 |
| ✓ LG | ✓ Toshiba |
| ✓ Carrier/Midea | ✓ Haier |

The default is set up as 'None', meaning no AC is connected. If two ACs are installed and connected to AirTouch 3, both AC brands have to be selected even if they are the same.

- In 'Settings' screen, touch 'AC Setup' to enter the 'AC Setup' screen
- Touch the edit field of 'AC Brand', all selectable AC brands/models will be listed.
- Touch the desired AC brand to make it as the current connected AC.



NOTE: Some of the models from the previously listed brands may not have the terminals as shown in the wiring diagrams. In this case, the AirTouch 3 system may not be able to be connected to the AC unit.

If the AirTouch 3 system is not connected to any AC Unit, select 'None' from the list. To connect a brand/model not listed, please contact Polyaire.

7.6.3 AC Auto Off option

AC auto off function provides an option to protect the duct system. If this option is selected (the radio button is ticked), the AirTouch 3 system will try to turn off AC after all groups are turned off. It is disabled by default.

In One Ducted System, if two AC units are installed the two ACs share the same Auto Off and will all turn off if all groups are closed.

In Two Ducted System, the two ACs have their own Auto Off option and will act according to their own selection.

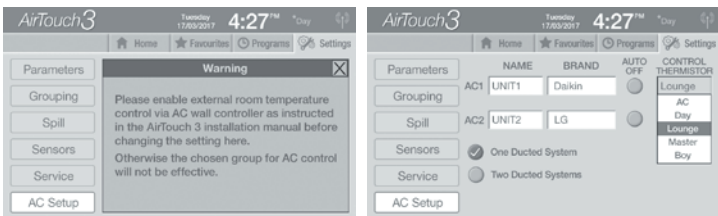
NOTE: AC Auto Off option will not appear if AC Brand is 'None'.

7.6.4 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.

Average temperature of all open groups with sensors can also be chosen as the AC control temperature or Auto option can be selected in the Control Thermistor list. In Auto case the system will use the highest temperature (cool mode) or the lowest temperature (heat mode) from all open groups as the AC control temperature. AC unit will compare this value with its set point and decide on its mode (auto mode setting), fan speed (auto fan speed setting) and running frequency (inverter).

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 touch screen of AirTouch 3 will show the measured temperature from the group sensor.



7.6.5 Select Ducted Systems

In two AC scenarios, the installation may be one ducted system or two separate ducted systems. If two ACs supply air to the same ducted system, this is classified as one ducted system and the two ACs will have the same spill, Auto Off and Turbo settings. If each AC has its independent supply and return air, it's classified as a Two Ducted System. Each AC will have its own spill, Auto Off and Turbo settings.

It's up to the installer to choose either one ducted system or two ducted systems.



7.6.6 Groups connected in each ducted system

If the Two Ducted System option is chosen, the installer has to tell the system how many groups in each ducted system by inputting the group number for AC1. The system will automatically calculate the group number for AC2. The group number for each ducted system will help protect each system from potential blown-out (by spilling) and set up separate Turbo group.

7.7 Setting up Wi-Fi Connection

The instructions in this section demonstrate how to connect AirTouch 3 to a home router, which will enable the control/operation of AC unit and zoning via local Wi-Fi and internet. When selecting a position for the AirTouch 3 main module to be installed, please make sure it is within the effective cover range of the home WiFi router which the AirTouch 3 will be connected to. This will ensure reasonable WiFi signal strength and provide a reliable connection between AirTouch 3 and the home router after they are connected and the main module is installed. It is highly recommended to undertake this setup by placing the AirTouch 3 main module as close as practical to the router, ideally about 1.5 to 2 meters, before installing the main module.

The connection can be carried out by scanning or manual input.

- a) Touch Settings tab and then WiFi to enter the 'Wi-Fi Setup' screen. If AirTouch 3 is currently connected to a WiFi network, its SSID name will be ticked as shown.
- b) If the wireless network SSID is known, touch SSID field to display the keyboard on screen and then input first few characters of the SSID. Touch Enter to confirm the SSID input.



Figure 1

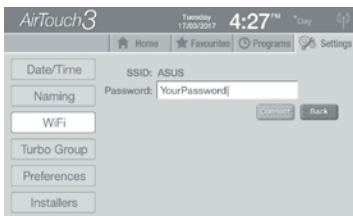
- c) Touch Scan to start scanning for available Wi-Fi networks/routers. Or Touch Other... to bring up the manual input (go to step e)

NOTE: The system will scan and display two WiFi network SSIDs each time, so it will be more efficient if the correct SSID is input before scanning.

- d) On completion of the scan, up to two found routers with their SSIDs starting with the input characters will be displayed. Touch the desired router name and then go to next step. If the desired router is not in the list, go back to b), or touch Other to manually input.



- e) Touch the password field to enter the password of the Wi-Fi network. Touch Enter to confirm. In manual input, after inputting correct SSID and password, Security has to be chosen before connecting



Choosing found ones



Manual input

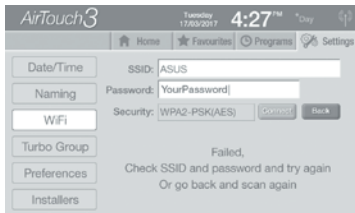
- f) Touch Connect button to connect the desired WiFi network. 'Connecting' will appear on the screen



- g) The AirTouch 3's screen will display 'Connected' if the connection was successful. If Wi-Fi connection failed go back to a) to restart the process.



Choosing found ones



Manual Input

- h) The Wi-Fi logo will appear on the status bar after connecting to the WiFi network. 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.

Now you can run AirTouch 3 applications on your smart devices to control AC or zoning.



7.8 Testing Damper On/Off

- a) Switch on the air conditioner.
- b) Enter the home screen of AirTouch 3.
- 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.

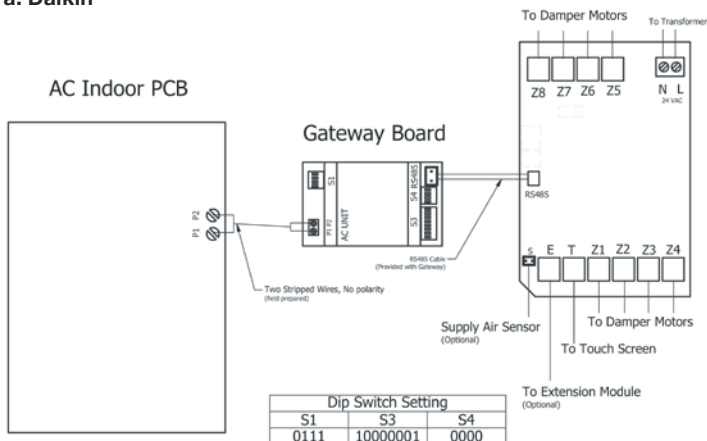
7.9 Wiring Diagrams

7.9.1 Full Control AC Wiring

- All AC Units must be initialised with Standard AC Wall Controller connected to AC Indoor Unit.
- 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 on following pages to connect Gateway.
- Refer to Dip Switch settings (if applicable) on the Gateway Drawings.
- After completing wiring and dip switch setting, turn power ON.
AC Indoor, Gateway and AirTouch 3 can be powered up at the same time, but power up AC Indoor and Gateway no later than the AirTouch 3.

NOTE: *Carrier and Haier AC's do not require a gateway.*

a. Daikin



Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above and leave the dipswitches on the gateway at their default position. 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.

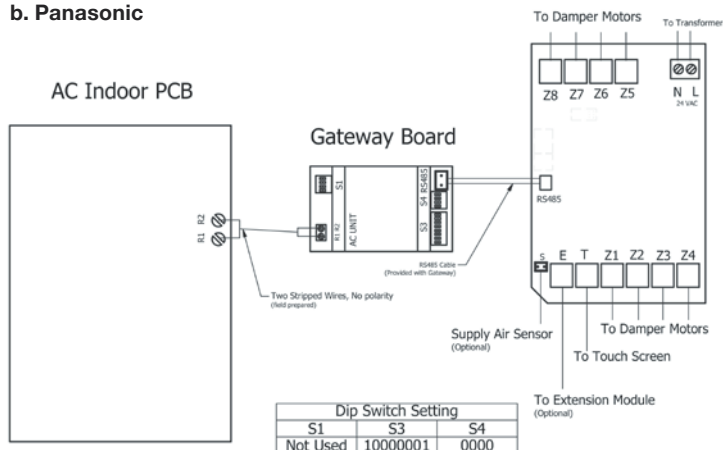
3. If the Daikin wall controller is not going to be used after commissioning and the return air sensor is used for AC temperature control:

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 then power up AirTouch 3. Or power them up at the same time.

4. If AirTouch 3 touch screen thermistor is 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, code 2 and change its value to 01). 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 of S1 on the gateway to ON (1)
- Settings on the AirTouch 3 screen: Untick Thermistor on AC in the Installer's AC setting on AirTouch 3.
- Restart the AC and gateway first and then power up AirTouch 3. Or power them up at the same time.

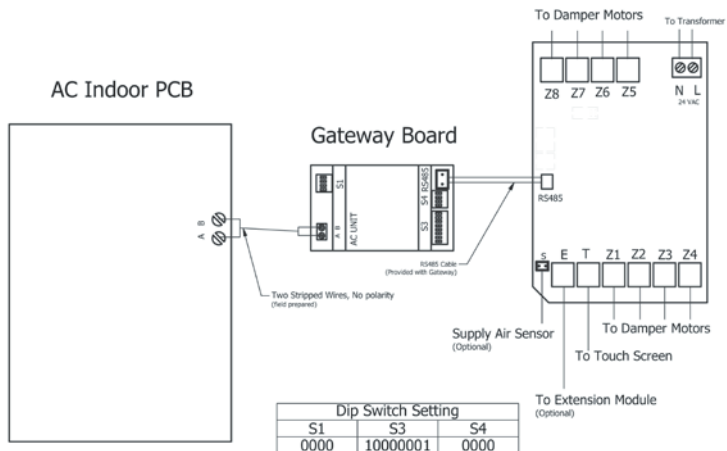
b. Panasonic



Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above 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 if the Panasonic wall controller is not to be used after commissioning.
4. If AirTouch 3 touch screen thermistor is used for AC temperature control, go to AirTouch 3 AC setting and untick Thermistor on AC.

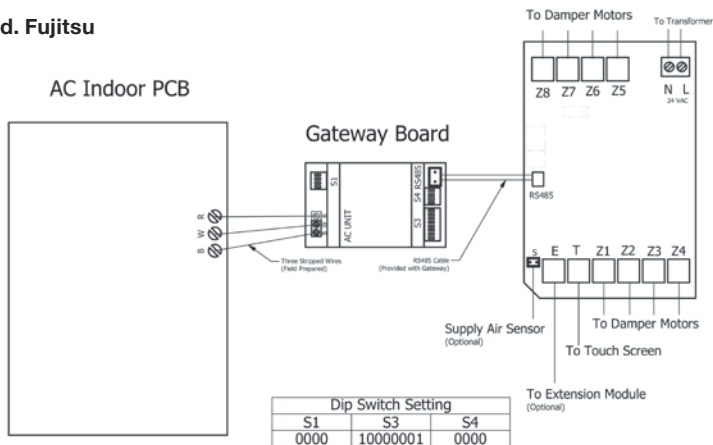
c. Toshiba



Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above and leave the dipswitches on the gateway at their default position. 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.
4. If AirTouch 3 touch screen thermistor is used for AC temperature control, go to AirTouch 3 AC setting and untick Thermistor on AC.

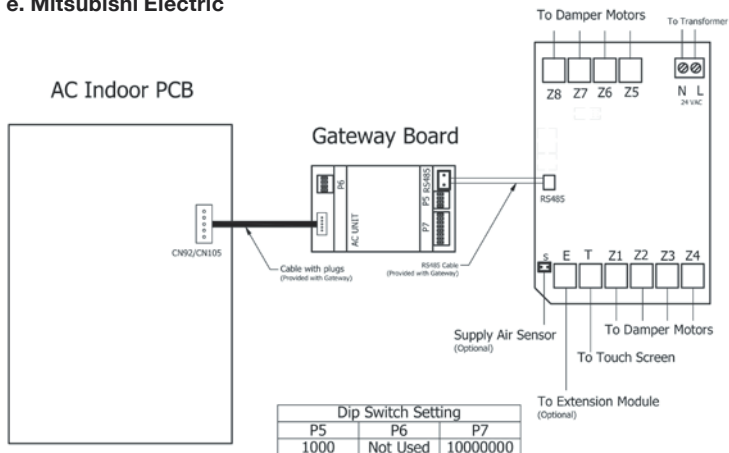
d. Fujitsu



Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above 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. The room temperature shown next to the set point on the touch screen will be 0, set the Fujitsu wall controller as below: Go to Service->Function Setting, find Function No 42, and set its value to 01. Go to Submenu and change "R. C. sensor control" from Off to On.
4. 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 3. In this case the room temperature display on the touch screen will be "0". But you can turn off the room temperature display in the Preference settings.
5. If AirTouch 3 touch screen thermistor is 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 switch 1 of S1 to ON (1)
 - Settings on the AirTouch 3 screen: Untick Thermistor on AC
 - Restart the AC and gateway first and then power up AirTouch 3 or power them up at the same time

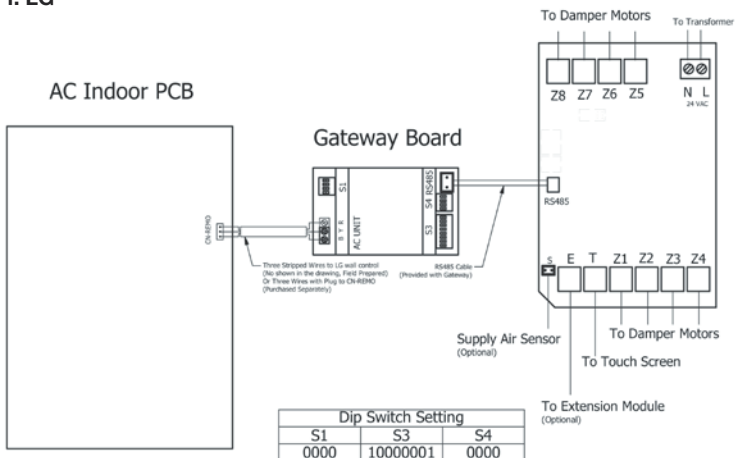
e. Mitsubishi Electric



Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.
2. Initialise the AC Unit with ME AC Wall Controller connected.
3. 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.
4. If AirTouch 3 touch screen thermistor is used for AC temperature control, go to AirTouch 3 AC setting and untick Thermistor on AC.

f. LG



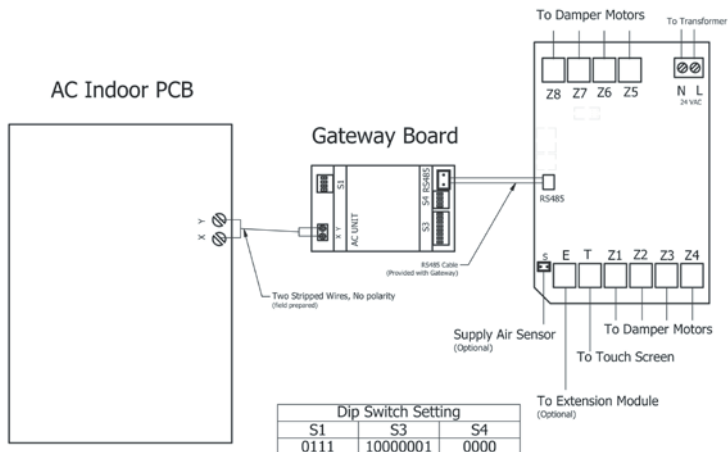
Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above 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-REM0 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 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 3. Or power them up at the same time.

If AirTouch 3 touch screen thermistor is 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 3 screen: Untick Thermistor on AC in the Installer's AC setting on AirTouch 3.
- Restart the AC and gateway first and then power up AirTouch 3. Or power them up at the same time.

g. Mitsubishi Heavy Industries (MHI)



Commissioning Notes

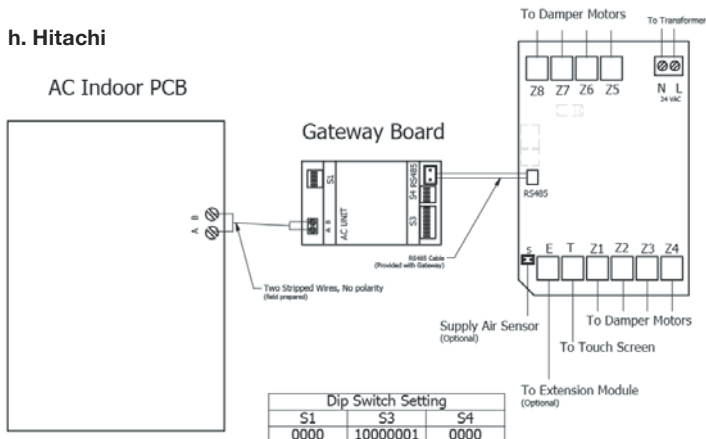
1. Wire AirTouch 3, gateway and AC indoor as per diagram on the left and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.
2. Set positions 2 and 3 of S1 on the gateway as per the table below according to the indoor fan speeds:

Switches of S1 1 2 3 4	Binary Value	Description
x off off x	x00x	Indoor unit has 1 Fan Speed
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.
4. 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 3. Or power them up at the same time.

If AirTouch 3 touch screen thermistor is used for AC temperature control: Go to AirTouch 3 AC setting and untick Thermistor on AC.

h. Hitachi

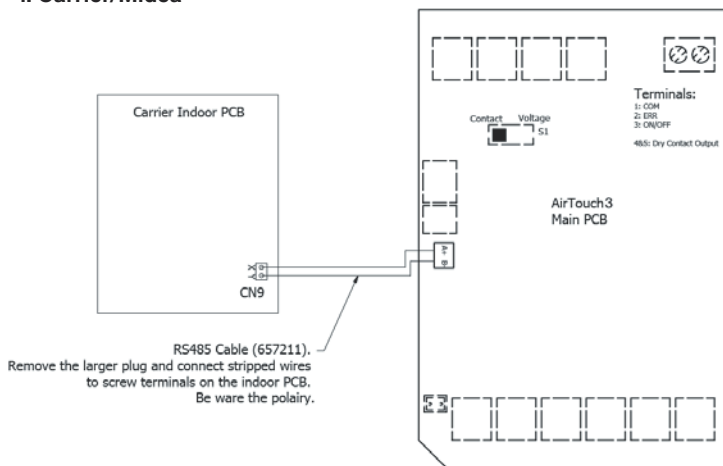


Commissioning Notes

1. Wire AirTouch 3, gateway and AC indoor as per diagram above 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 3. Or power them up at the same time.
4. If AirTouch 3 touch screen thermistor is 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 3 screen: Untick Thermistor on AC in the Installer's AC setting on AirTouch 3
 - Restart the AC and gateway first and then power up AirTouch 3. 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.

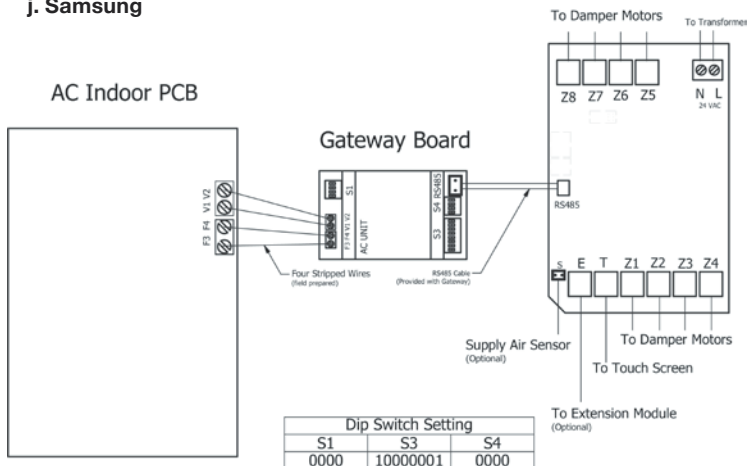
i. Carrier/Midea



Commissioning Notes

1. Wire AirTouch 3 to Carrier AC indoor PCB as per wiring diagram.
2. Turn on both AC and AirTouch 3 and wait for a couple minutes till “Checking AC Connection” disappears from the left side of the touch screen.
3. Go to Settings->Installers->AC Setup (password: Polyaire)
4. Touch AC brand (none as default) and choose Carrier/Midea.
5. Go back to Home page. The ON/OFF button, set point, Mode and Fan speed should appear on the left side of the screen if Carrier unit has been recognized. Otherwise it will show “Carrier unit is not connected”. If this happens, check if the wires are connected to correct terminals (beware polarity) and there is no loose connection.

j. Samsung



NOTE: This gateway will only work with units which have 14kW and below capacity.

Commissioning Notes

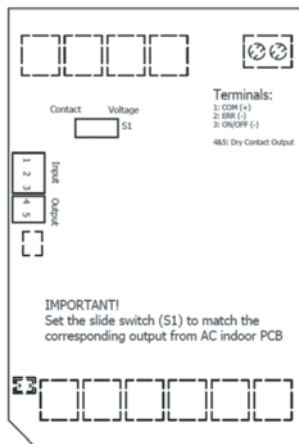
1. Wire AirTouch 3, gateway and AC indoor as per diagram and leave the dipswitches on the gateway at their default position. Make sure all wires are connected properly.
2. Initialise the AC Unit with Samsung AC Wall Controller connected. The Samsung wall controller can be wired to the terminals in parallel with the gateway.
3. If the Samsung 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 3. Or power them up at the same time.
4. If AirTouch 3 touch screen thermistor is used for AC temperature control:
 - Settings on the gateway: Set position 1 of S1 on the gateway to ON (1)
 - Settings on the AirTouch 3 screen: Untick Thermistor on AC in the Installer's AC setting on AirTouch 3
 - If Samsung wall controller is present, change it to slave
 - Restart the AC and gateway first and then power up AirTouch 3. Or power them up at the same time.

7.9.2 On/Off Control AC Wiring

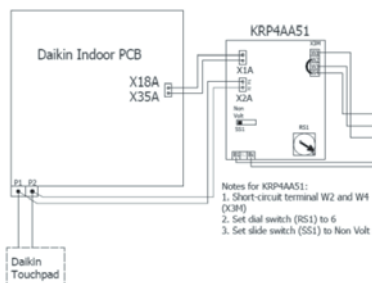
Note: The following AC ON/OFF Control Drawings are not applicable when an AC gateway & RS485 Cable for Full AC Control have been supplied.

Please see previous pages for the Gateway Drawings.

a. Generic Wiring Diagram

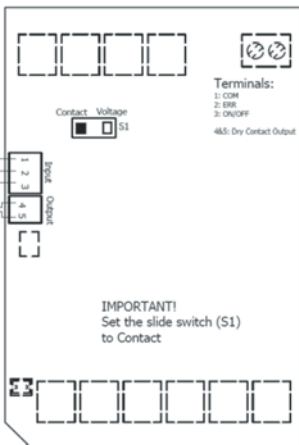


b. Wiring Diagram for Daikin



Note:

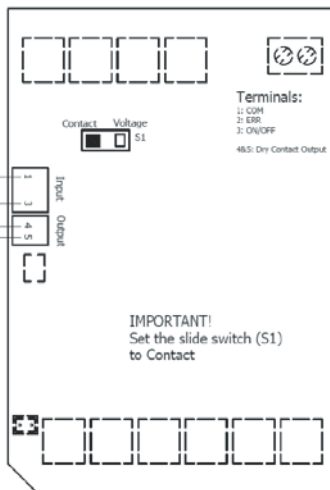
If there are two Daikin wall controllers connected to the indoor PCB, connecting AirTouch 3 as shown here may cause irregular communications between Daikin wall controllers and indoor PCB.



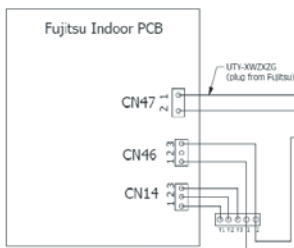
c. Wiring Diagram for Fujitsu



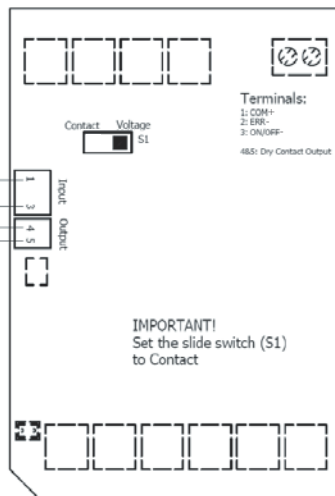
Note:
Different Fujitsu models may have different terminals for external control and status display. Please check indoor PCB wiring diagrams before connecting.
If not sure, please consult Fujitsu or Polyaire tech support.



For ARTGxxLHTA

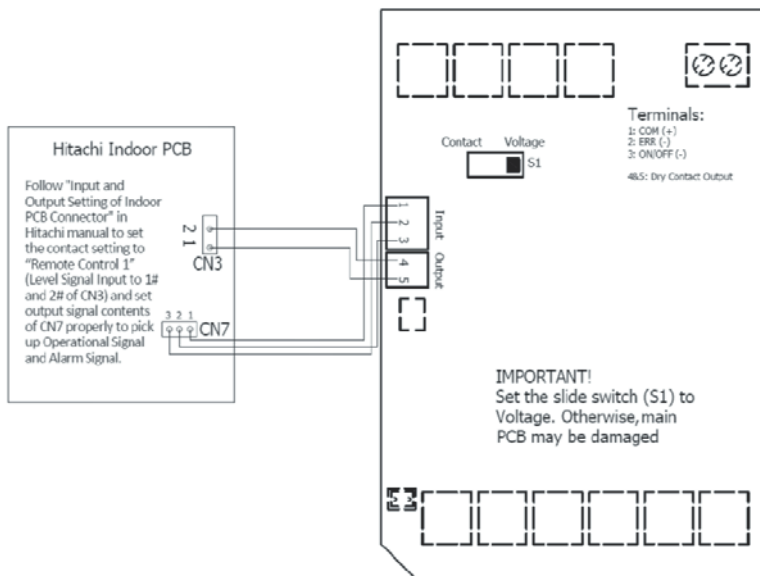


Note:
Different Fujitsu models may have different terminals for external control and status display. Please check indoor PCB wiring diagrams before connecting.
If not sure, please consult Fujitsu or Polyaire tech support.

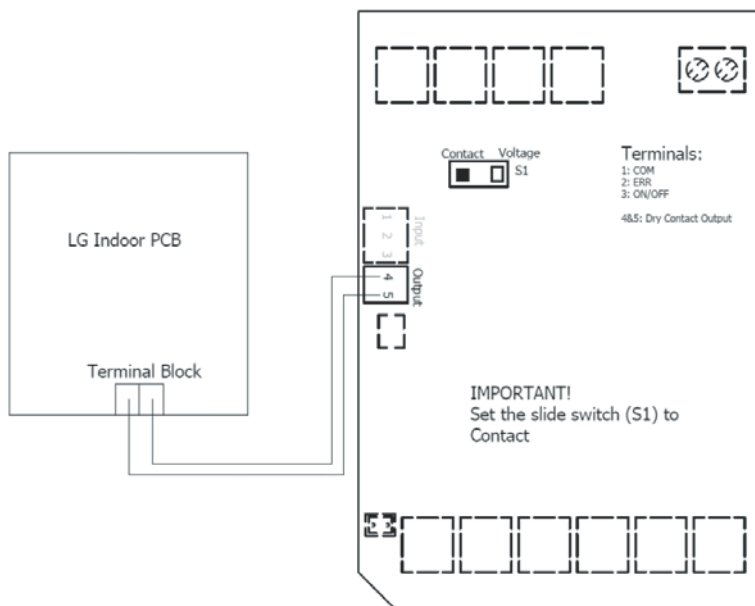


For ARTGxxLDTA

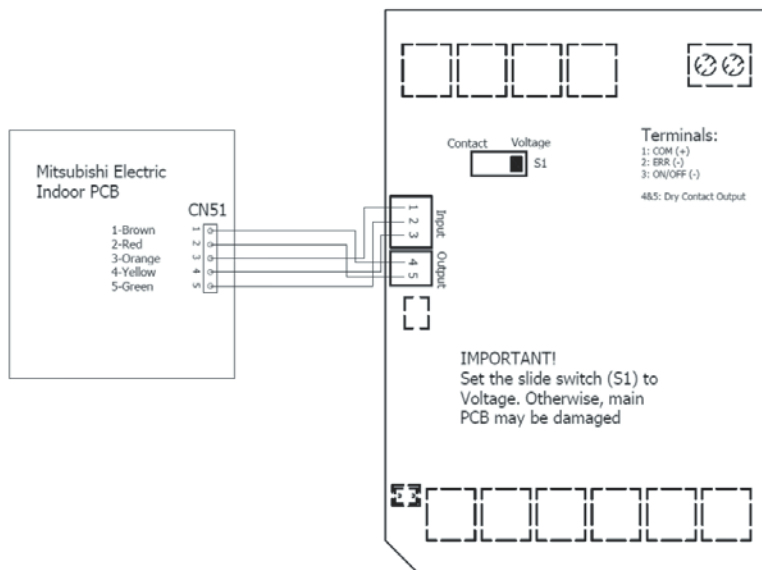
d. Wiring Diagram for Hitachi



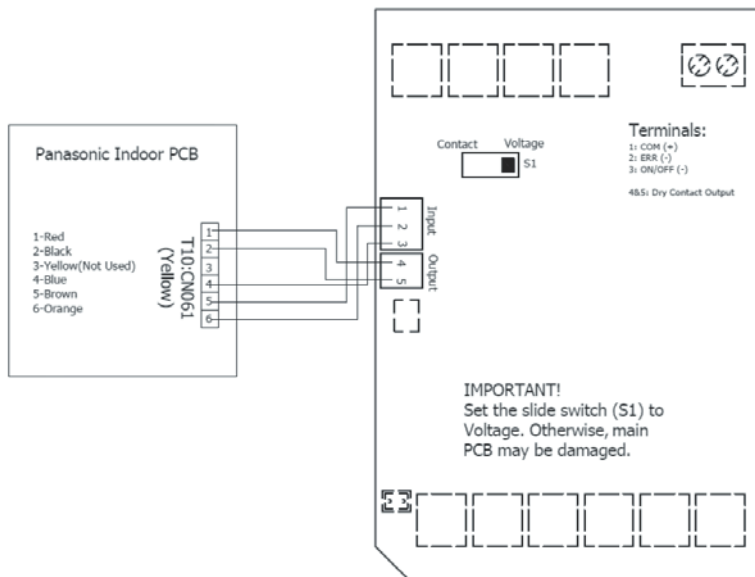
e. Wiring Diagram for LG



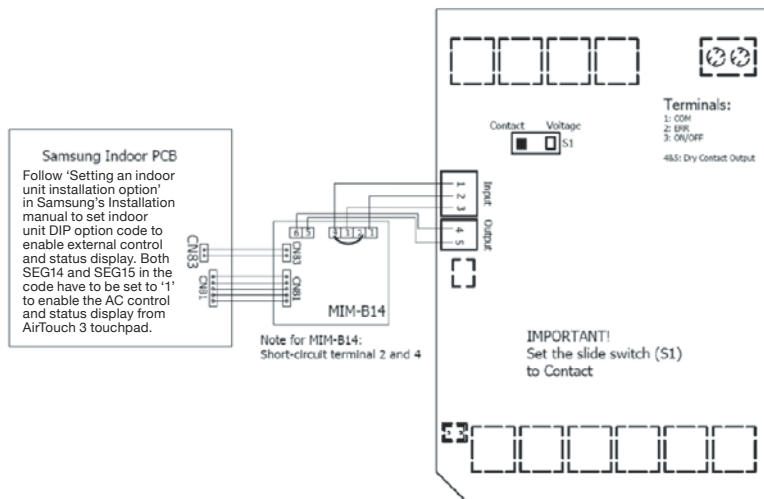
f. Wiring Diagram for Mitsubishi Electric



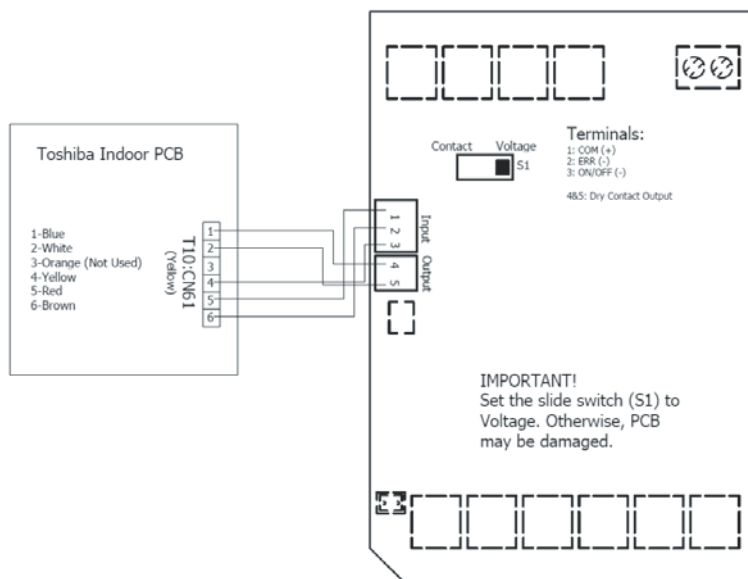
g. Wiring Diagram for Panasonic S Series



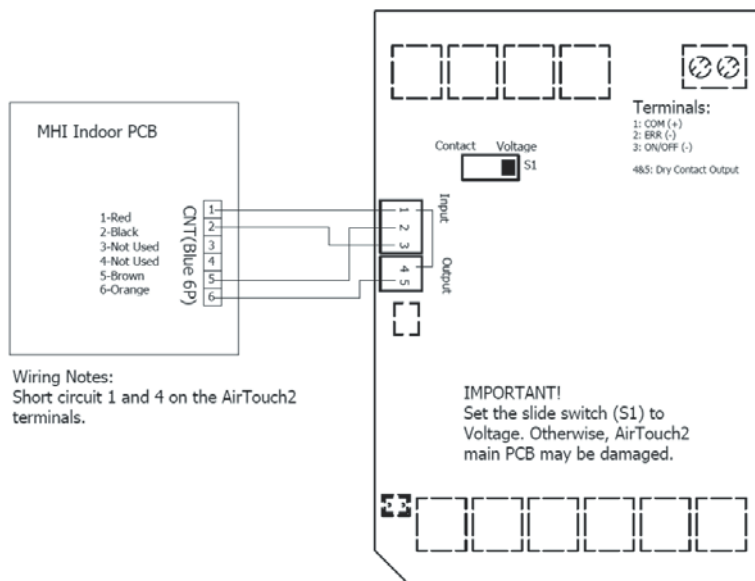
h. Wiring Diagram for Samsung with MIM-B14



i. Wiring Diagram for Toshiba



j. Wiring Diagram for Mitsubishi Heavy Industries



7.10 Downloading and Installing AirTouch 3 Application on Mobile

AirTouch 3 application can be downloaded from the following location. The application is available for free of charge.

For Android Phones: Go to Market / Google Play store from your Android phone and search for AirTouch 3 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 3 app supports is Android 3.0.

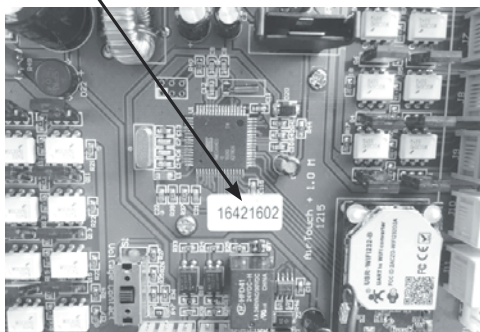
For iPhones: Go to the App store and search for AirTouch 3 application developed by Zonemaster. Tap on the AirTouch 3 app and press Install. Enter your iTunes password and the AirTouch 3 app will be automatically downloaded and installed on your iPhone. The lowest iOS system AirTouch 3 app supports is iOS 8.0.

When mobiles and AirTouch 3 are all connected to the same WiFi, the AirTouch 3 app will run straight away and the control interface will come up. If the mobiles and AirTouch 3 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 3 before, you will need the device ID which is an eight digit number and password to run the app successfully. The default password is 'Polyaire'

The device ID can be found:

1. On the touch screen when you get to the Installer's setting page
2. On the PCB of main module of AirTouch 3 as shown below

Device ID



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

8) Troubleshooting Guide for Installers

No	PROBLEM	SOLUTION
1.	WiFi setup does not display the required router	<ol style="list-style-type: none"> Check if the power is turned ON to the router. Check the WiFi module on the main board is plugged in properly Check if the antenna is attached to the WiFi module securely Move the AirTouch 3 module as close as practical to the router (1.5-2 metre distance) and carry out the WiFi setup process. Adjusting the antenna or the AirTouch 3 main module position will help connect the router with the AirTouch 3 system. Check the router settings for the following <ul style="list-style-type: none"> DHCP server settings is turned ON SSID (Wireless Network name) is visible. If the Mac filter is enabled, enter the Mac address of the AirTouch 3 system (located on the back casing of the AirTouch 3 module) to the Router Mac Filter settings to allow the router to communicate with the AirTouch 3 module.
2.	WiFi setup displays 'CONNECTION FAILED'	<ol style="list-style-type: none"> Check if the password is correct Check if the SSID name is too long (should be less than 22 characters) or password is too long (should be less than 20 characters) Use manual input for correct SSID and password and choose proper security mode
3.	AC unit does not respond from the AirTouch 3 touch screen	<ol style="list-style-type: none"> Check if the Power to the AC unit is switched ON. Check if the AC unit has been connected to the AirTouch 3 system according to the appropriate wiring diagram. Check if the correct brand of the AC unit has been selected in the AC setup (Page 22). Check the AC unit instruction to ensure if a third party controller is enabled to turn the unit ON/OFF. In case of gateway connection, check dip switches on the gateway are set to correct position and the green LED is flashing regularly.



Polyaire Pty Ltd

11-13 White Road
Gepps Cross
South Australia, 5094

Tel: (08) 8349 8466

Fax: (08) 8349 8446

airtouch.net.au