



## AC Pro S-Series 9-12K User Manual

### Models

AWH09QC-A3DNA3D/I

AWH12QC-A3DNA3D/I

AWH09QC-D3DNA3D/I

AWH12QC-D3DNA3D/I

(Refrigerant R410A)

AWH09QC-A3DNA1D/O

AWH12QC-A3DNA1D/O

AWH09QC-D3DNA1D/O

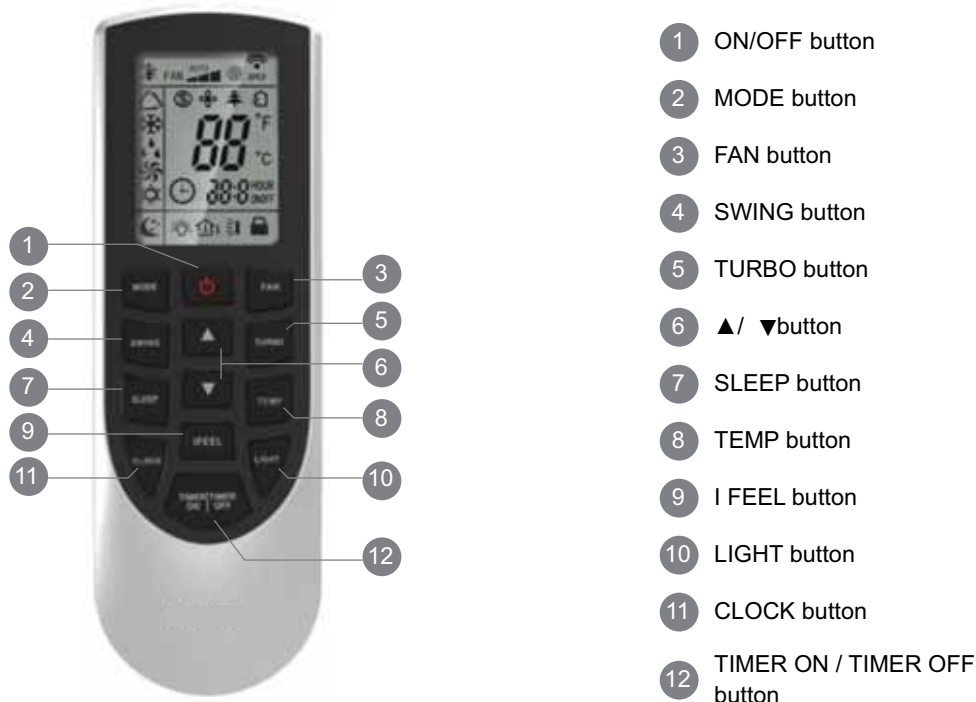
AWH12QC-D3DNA1D/O



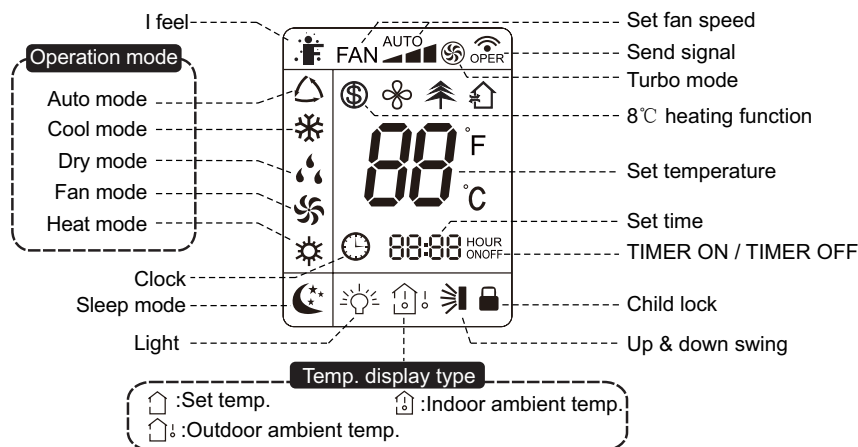
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# 1. Function and Control

## 1.1 Remote Controller Introduction



### Introduction for icons on display screen




### Introduction for buttons on remote controller

Note:

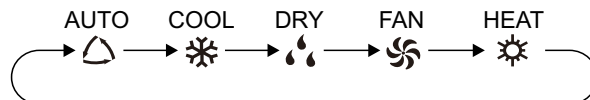
- After putting through the power, the air conditioner will give out a sound. Operation indicator "⏻" is ON (red indicator). After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon "📶" on the display of the remote controller will blink once and the air conditioner will give out a "de" sound, which means the signal has been sent to the air conditioner.
- Under the off status, set the temperature and clock icon will be displayed on the display of the remote controller (if timer on, timer off and light functions are set, the corresponding icons will be displayed on the display of the remote controller at the same time); Under on status, the display will show the corresponding set function icons.




## 1. On/Off Button

Press this button can turn on or turn off the air conditioner. After turning on the air conditioner, operation indicator "  " on indoor unit's display is ON (green indicator. The colour is different for different models), and indoor unit will give out a sound.

## 2. Mode Button

Press this button to select your required operation mode.






- When selecting auto mode, air conditioner will operate automatically according to ex-factory setting. Set temperature can't be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "SWING" button can adjust fan blowing angle.
- After Selecting cool mode, air conditioner will operate under cool mode. Cool indicator "  " on indoor unit is ON. Press "▲" or "▼" button to adjust the temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle
- When selecting dry mode, the air conditioner operates at low speed under dry mode. Dry indicator "  " on indoor unit is ON. Under dry mode, fan speed can't be adjusted. Press "SWING" button to adjust fan blowing angle.
- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating, All indicators are OFF. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle.
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator "  " on indoor unit is ON. Press "▲" or "▼" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "SWING" button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't start up the unit).

### Note:

- For preventing cold air, after starting up heating mode, indoor unit will delay 1-5 minutes to blow air (delay time is dependant on indoor ambient temperature).
- Set temperature range from remote controller. 60.8~86F; Fan speed: auto, low, medium, high speed.

## 3. FAN Button

Pressing this button can set fan speed circularly as: auto (auto), Low (  ), medium (  ), high (  ).

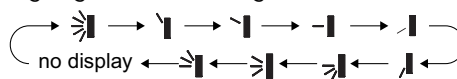


### Caution:










- Under Auto speed, air conditioner will select proper fan speed automatically according to ex-factory setting.
- Fan Speed under dry mode is low speed.

## 4. SWING Button




Press this button will select up or down swing angles. Fan blow angle can be selected circularly as seen below.



(horizontal louvers stops at current position)

- When selecting "  ", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "  ", "  ", "  ", "  ", air conditioner is blowing fan at fixed positions. Horizontal louver will stop at the fixed position.
- When selecting "  ", "  ", "  ", air conditioner is blowing fan at fixed angles. Horizontal louver will send air at the fixed angle.
- Hold "  " button above 2s to set your required swing angle. When reaching your required angle, release the button.

### Note:

- "  ", "  ", "  " may not be available. When air conditioner receives this signal, the air conditioner will blow automatically.

## 5. TURBO Button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. "  " icon is displayed on remote controller. Press this button again to exit turbo function and "  " icon will disappear.

## 5. ▲/▼ Buttons

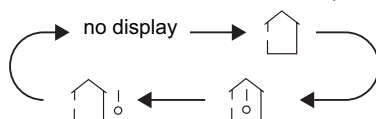
- Press "▲" or "▼" button once increase or decrease set temperature 1F. Holding "▲" or "▼" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▼" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons) When setting TIMER ON, TIMER OFF or CLOCK, press "▲" or "▼" button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

## 7. SLEEP Button

Under COOL, HEAT or DRY mode, press this button to start up sleep function. " " icon is displayed on remote controller. Press this button again to cancel sleep function and " " icon will disappear.

## 8. TEMP Button

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor unit's display. The setting on remote controller is selected circularly as below.



- When selecting " " or no display with remote controller, temperature indicator on indoor unit displays set temperature.
- When selecting " " with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
- When selecting " " with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

### Note:

- Outdoor temperature display is not available for some models. At that time, indoor unit receives " " signal, while it displays indoor set temperature.
- It's defaulted to display set temperature when turning on the unit. There is no display in the remote controller.
- Only for the models whose indoor unit has dual-8 display.
- When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

## 9. I FEEL Button

Press this button to start I FEEL function and " " will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and " " will disappear.

- Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.

## 10. LIGHT Button

Press this button to turn off display light on indoor unit. " " icon on remote controller disappears. Press this button again to turn on display light. " " icon is displayed.

## 11. Clock Button

Press this button to set clock time. " " icon on remote controller will blink. Press "▲" or "▼" button within 5s to set clock time. Each pressing of "▲" or "▼", clock time will increase or decrease 1 minute.. If hold "▲" or "▼" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "CLOCK" button to confirm the time. " " icon stops blinking.

### Note:

- Clock time adopts 24-hour mode
- The interval between two operation can't exceed 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

## 12. TIMER ON/ TIMER OFF Button

- TIMER ON button

"TIMER ON" button can set the time for timer on. After pressing this button. " " icon disappears and the word "on" on remote controller blinks. Press "▲" or "▼" button to adjust TIMER ON setting. After each pressing of "▲" or "▼" button, TIMER ON setting will increase or decrease 1 min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. " " icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.

### Note:

- Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
- Before setting TIMER ON or TIMER OFF, please adjust the clock time.
- After starting up TIMER ON or TIMER OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you don't need this function, please use remote controller to cancel it.

## Function introduction for combination buttons

### 1. Energy-Saving Function

Under cooling mode, Press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "TEMP" and "CLOCK" buttons simultaneously again to exit energy-saving function will cancel sleep function.

#### Note:

- Under energy-saving function, fan speed is defaulted at auto speed and it can't be adjusted.
- Under energy-saving function, set temperature can be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and energy-saving function can't operate at the same time. If energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.

### 2. 8C Heating Function

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8C heating function. When this function is started up, "⊞" and "8C" will be shown on remote controller, and the air conditioner keep the heating status at 8C. Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8C heating function.

#### Note:

- Under 8C heating function, fan speed is defaulted at auto speed and it can't be adjusted
- Under 8C heating function, set temperature can be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and 8C heating function can't operate at the same time. If 8C heating function has been set under cooling mode, press sleep button will cancel 8C heating function. If sleep function has been under cooling mode, start up the \*C heating function will cancel sleep function.
- Under F temperature display, the remote controller will display 46F heating.

### 3. Child Lock Function

Press "▲" or "▼" simultaneously to turn on or turn off child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, the "🔒" icon will blink three times without sending signal to the unit.

### 4. Temperature Display Switchover Function

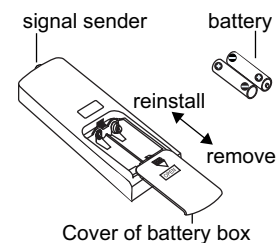
Under OFF status, press "▼" and "MODE" buttons simultaneously to switch temperature display between C and F.

#### Operation Guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode. AUTO, COOL, DRY, FAN, HEAT.
3. Press "▲" or "▼" button to set your required temperature (Temperature can't be adjusted under auto mode.)
4. Press "FAN" button to set your required fan speed: auto, low, medium, and high speed
5. Press "SWING" button to select fan blowing angle.

#### Replacement of batteries in remote controller

1. Press the back side of remote controller marked with "🔧", as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.



#### Note:

- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 8m, and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required
- When you don't use remote controller for a long time, please take out the batteries
- If the display on remote controller is fuzzy or there's no display, please replace batteries

## 1.2 Brief Description of Modes and Functions

### Basic System Functions

#### a. Cooling Mode

- Temperature setting range is 60.8°F - 86.0°F.
- Should the outdoor unit malfunction or should it go into Protection Mode, the indoor unit will maintain operational status.

#### b. Drying Mode

- Temperature setting range is 60.8°F - 86.0°F.
- The fan will operate at low speed and the swing will operate at normal speed.
- Should the outdoor unit malfunction or should it go into Protection Mode, the indoor unit will maintain operational status.
- Sleep function is not available in Drying Mode.

#### c. Heating Mode

- Temperature setting range is 60.8°F - 86.0°F.
- While in Heating Mode, the indoor unit will enter into cold air prevention status. When the unit stops (or is turned off), the indoor unit enters into residual heat blowing status.

#### d. Auto Mode

- Heating preset = 68°F. Cooling preset = 77°F. The unit will switch between cooling and heating automatically.
- Should the outdoor unit malfunction or should it go into Protection Mode, the indoor unit will maintain operational status.

#### e. Fan Mode

- Temperature setting range is 60.8°F - 86.0°F.
- The fan will operate at its user set speed on the indoor unit.
- Indoor fan can operate at HIGH, MEDIUM, LOW, or AUTO fan speed.

### Other Controls

#### a. Buzzer

- During start-up, the indoor unit will beep indicating it has been turned on.

#### b. Auto Button

- Pressing the AUTO button will put the unit in auto mode.
- The indoor unit fan will operate at auto fan speeds (variable based on ambient temperature) and swing will function while auto mode is on.

#### c. Auto Fan

- During auto heating mode, the auto fan speed will adjust the fan speed automatically based on ambient temperature.

#### d. Sleep

- Once Sleep Mode is engaged, the system will adjust the set temperature automatically based on ambient temperature.

#### e. Timer Function

- General timer and clock timer can be customized using the remote controller.

#### f. Memory Function

- This function can memorize temperature settings, modes, swing settings, light, fan speeds, and general timer setting.
- Unit can be turn on based on memory settings.
- Clock timer cannot be memorized.

#### g. Health Function

- While the indoor fan is engaged, you can set this function by use of the remote controller.
- Turning on the unit using the AUTO Button, will turn the health function on by default.
- Turning off the unit will cancel the Health Function.

#### **h. I Feel Control Mode**

- Pressing the I Feel Button programs the unit to ambient temperature settings.

#### **i. Compulsory Defrosting Function**

- While the unit is on, set Heating Mode using remote controller.
- Adjust the temperature to 60.8°F.
- Press "+, -, +, -, +, -," buttons successively within 5 seconds. This will put the system into Compulsory Defrosting status.
- The unit will exit Compulsory Defrosting status based on defrosting results. It will then resume normal heating function.

#### **j. Refrigerant Recovery Function – QUALIFIED TECHNICIAN ONLY**

- Power on the unit.
- Continuously press the LIGHT Button 3 times within 3 seconds to enter refrigerant cycling mode.
- When the recycling function has started, Fo will be displayed on the remote.
- Close liquid valve and wait 5 minutes.
- After 5 minutes has passed, depress valve. If no refrigerant comes out, close the gas valve immediately and turn off the unit in order to remove the connection pipe.
- Exit the Refrigeration Recycling Function.
- If the Refrigerant Recovery Function has been activated and not turned off, the unit will automatically exit Refrigerant Recovery Mode after 25 minutes.
- If the unit is in Standby Mode before Refrigerant Recovery Function is activated, it will return to Standby Mode upon completion of Refrigerant Cycling.

#### **k. Ambient Temperature Display Control Mode**

- Temperature setting range is 60.8°F - 86.0°F.
- The set temperature will be the default temperature displayed on the remote controller. If the user switches the temperature to view ambient temperature, ambient temperature will remain displayed for 3 seconds. Afterward, it will return to the set temperature.
- Indoor unit fan will operate at the user's set fan speed.
- Indoor fan can operate at HIGH, MEDIUM, LOW, or AUTO fan speed.

#### **l. Off-Peak Function**

- The default minimum stop time is 180 seconds meaning the time interval between two start-ups of the compressor cannot be less than 180 seconds.

#### **m. SE Control Mode**

- The unit operates at SE status.

#### **n. X-Fan Mode**

- When X-Fan function is engaged, the indoor fan will still operate at low speed for 2 minutes. After 2 minutes, the entire unit will shut down.

#### **o. 8°C/46°F Heating Function**

- In heating mode, you can set the 8°C/46°F heating function using the remote controller. The system will operate at 8°C/46°F set temperature.

#### **p. Turbo Fan Control Function**

- Set turbo function in cooling or heating mode. Press fan speed button to cancel turbo function.
- Turbo feature is not available in AUTO, DRY, or FAN mode(s).



## Outdoor Unit

### 1. Check the ambient temperature compensation function and the indoor ambient temperature compensation function.

- Cooling mode – Indoor ambient temperature computing control model = (T indoor ambient temperature -  $\Delta T$  cooling indoor ambient temperature compensation).
- Heating mode - Indoor ambient temperature computing control model = (T indoor ambient temperature -  $\Delta T$  heating indoor ambient temperature compensation).

### 2. Check effective judgment controls of parameters.

- Condition A – Exhaust Detection Temperature Change
  - After running the compressor for 10 minutes, check the compressor frequency. If the compressor frequency is  $f \geq 40\text{Hz}$  and the rising value  $T_{\text{exhaust}}$  (T exhaust after starting for 10 minutes – T exhaust before start up)  $\leq 35.6^\circ\text{F}$ , the outdoor exhaust temperature thermos-bulb can be judged not to be connected into place (judging once the power is on the first time).
- Condition B
  - Comparative judgement of exhaust detection temperature and condenser detection temperature (T pipe temperature = T outdoor pipe temperature in cooling mode, T pipe temperature = T indoor pipe temperature in heating mode).
  - After running the compressor for 10 minutes, check the compressor frequency. If the compressor frequency is  $f \geq 40\text{Hz}$  and (T pipe temperature  $\geq (T_{\text{exhaust}} + 37.4)$ ), the outdoor exhaust temperature thermos-bulb can be judged not to be connected into place (judging once the power is on).

### 3. Basic Functions

- Cooling Mode
  - Conditions and Processes of Cooling Operation:
    - If the compressor is shut down, and  $[T_{\text{setup}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})] \leq 32.9^\circ\text{F}$ , the cooling operation will start.
    - If cooling operation is  $32^\circ\text{F} \leq [T_{\text{setup}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})] < 35.6^\circ\text{F}$ , the cooling operation will continue to run.
    - If cooling operation is  $35.6^\circ\text{F} \leq [T_{\text{setup}} - (T_{\text{indoor ambient temperature}} - \Delta T_{\text{cooling indoor ambient temperature compensation}})]$ , the cooling operation will stop after reaching the temperature set point.
- Temperature Setting Range
  - If T outdoor ambient temperature  $\geq [T_{\text{low temperature cooling temperature}}]$ , the temperature can be set at  $61^\circ\text{F} - 86^\circ\text{F}$  (Cooling at room temperature).
  - If T outdoor ambient temperature  $< [T_{\text{low temperature cooling temperature}}]$ , the temperature can be set at  $77^\circ\text{F} - 86^\circ\text{F}$  (cooling temperature), that is the minimum temperature setting for the outdoor set to  $77^\circ\text{F}$ .

### 4. Dehumidifying Mode

- Temperature setting range is  $61.0^\circ\text{F} - 86.0^\circ\text{F}$ .
- Conditions of dehumidifying process: see cooling operations above.

### 5. Air Supplying Mode

- Temperature setting range is  $61.0^\circ\text{F} - 86.0^\circ\text{F}$ .
- Compressor, outdoor fans and four-way valves are switched to off.

### 6. Heating Mode

- Conditions and Processes of Heating Operation:
  - (T ambient temperature is the actual detection temperature of indoor environment thermos-bulb. Indoor ambient temperature compensation during heating operations).
  - If the compressor is shut down, and  $[(T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}) - T_{\text{setup}}] \leq 32.9^\circ\text{F}$ , start the unit to enter heating operations.
  - If heating operation is  $32^\circ\text{F} \leq [(T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor ambient temperature compensation}}) - T_{\text{setup}}] < 35.6^\circ\text{F}$ , the heating operation will continue to run.
  - If heating operation is  $35.6^\circ\text{F} \leq [(T_{\text{indoor ambient temperature}} - \Delta T_{\text{heating indoor temperature compensation}}) - T_{\text{setup}}]$ , the heating operation will stop after reaching the temperature set point.
- Temperature setting range is  $61.0^\circ\text{F} - 86.0^\circ\text{F}$

## 1. Special Functions

- a. Defrosting Control
  - Conditions for defrosting
  - After the time for defrosting is judged to be satisfied, if the temperature for defrosting is satisfied after detections for continuous 3 minutes, the defrosting operation will start.
  - Conditions of finishing defrosting
  - The defrosting operation can exit when any of the conditions below is satisfied.
  - $T_{\text{outdoor temperature}} \geq (T_{\text{outdoor ambient temperature}} - [T_{\text{temperature 1 of finishing defrosting}}])$ .
  - The continuous running time of defrosting reaches [maximum defrosting time].
- b. Control Logic
  - Compressor Control
    - Start the compressor after starting cooling, heating dehumidifying, operations and the outer fans start for 5 seconds. When the machine is shutdown, in safety stops and when switching to air-supplying mode, the compressor will stop immediately. In all modes: once the compressor starts up, it will not be allowed to stop until having run the [T minute compressor running time]. (Note: including cases of shutdown when the temperature point is reached; except the cases requiring stopping the compressor such as fault protection, remote shutdown, mode switching, etc.). In all modes: once the compressor stops, it will be allowed be restart after 3 minute delay. (Note: The indoor units have a function of power memory, the machine can be restarted after the remote shutdown and powering up again without delay).
- c. Cooling Mode.
  - Start the machine to enter cooling operation for cooling, the compressor is switched on.
- d. Dehumidifying Mode
  - Same as cooling mode.
- e. Air Supplying Mode
  - The compressor is switched off.
- f. Heating Mode
  - Start the machine to enter into heating operation for heating, the compressor is switched on.
  - Defrosting starts: the compressor is shut down and restarts it after 55-second delay.
  - Defrosting ends: the compressor stops, then starts after 55-second delay.

## 2. Outer Fans Control

- a. Only the outer fans run for at least 80 seconds in each air flow speed can the air flow be switched.
- b. After the outer fans run compulsively in high speed for 80 seconds when the machine starts up, control the air flow according to the logic.
- c. After remote shutdown, safety stops, and when the machine stops after reaching the temperature point, as well as after the compressor stops, extend 1 minute, the outer fans will stop (During the period in the 1 minute, the air flow of outer fans can be changed according to the outdoor ambient temperature changes). When running with force, the outdoor fans shall run in the highest air flow.

## 3. 4-Way Valve Control

- a. The 4-way valve control under the modes of cooling, dehumidifying and supplying air, closing.
- b. The status of 4-way valve control under the heating mode: getting power.
- c. When the 4-way valve is under power, the machine will start in heating mode, the 4-way valve will get power immediately.
- d. 4-way valve power turn off control under heating mode.
- e. When you should turn off the power or switch to other heating mode, the power of 4-way valve will be cut after 2 minutes of the compressor stopped.
- f. When all kinds of protection stops, the power of 4-way valve will be cut after delaying 4 minutes.
- g. Defrosting under heating mode begins when the power of 4-way valve will be cut after 50 seconds of entering into the defrosting compressor.
- h. Defrosting stops when the 4-way valve will get power after 50 seconds of exiting the defrosting compressor.

## 4. Evaporator Frozen Preventing Protection Function

- a. At the mode of cooling, dehumidifying: Evaporator frozen prevention protection function is allowed to begin after 6 minutes of starting the compressor.

## 1. Starting Estimation

- a. After the compressor stopped working for 180 seconds, if T inner pipe > [T frozen prevention frequency limited temperature (the temperature of hysteresis is 35.6°F)], the machine is only allowed to start for operating, otherwise it should not be started, and should be stopped to treat according to the frozen preventing protection: Clear the trouble under the mode of power turn-off/heating, and the protection times are not counted.

## 2. Frequency Limited

- a. [T frozen preventing normal speed frequency reducing temperature] ≤ [T inner pipe T frozen preventing frequency limited temperature], you should limit the frequency raising of compressor.

## 3. Reducing Frequency at Normal Speed

- a. If [T frozen preventing power turn-off temperature] ≤ [T inner pipe T frozen preventing normal speed frequency reducing temperature], you should adjust the compressor frequency by reducing 8Hz/90 seconds until the lower limit.

## 4. Reducing frequency at High Speed

- a. If [T frozen preventing power turn-off temperature] ≤ T inner pipe [T frozen preventing high speed frequency reducing temperature] you should adjust the compressor frequency by reducing 30Hz/ 90 seconds until the lower limit.

## 5. Power Turn-Off

- a. If the T inner pipe < [T frozen preventing power turn-off temperature], then frozen preventing protect to stop the machine. If T [frozen preventing frequency limited temperature] < T inner pipe, and the compressor has stopped working for 3 minutes, the whole machine should be allowed to operate.
- b. If the frozen preventing protection power turn-off continuously occurs for six times, it should not be resumed automatically and you should press ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the T evaporator frozen preventing protection times zero clearing time, the times of frozen preventing power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble cannot be resumed, mode transferring will not clear it).

## 6. Overload Protection Function

- a. After the compressor stopped working for 180 seconds, if T outer pipe < [T cooling overload frequency limited temperature] (the temperature of hysteresis is 35.6°F), the machine is allowed to start, otherwise it should be started, and should be stopped to treat according to overload protection. Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.
- b. If [T cooling overload frequency limited temperature] ≤ [T outer pipe T cooling overload frequency reducing temperature at normal speed], you should limit the frequency raising of compressor.
- c. If [T cooling overload frequency reducing temperature at high speed] ≤ T outer pipe [T cooling overload power turn-off temperature], you should adjust the compressor frequency by reducing 8Hz/90 seconds until the lower limit. After it was running 90 second at the lower limit, if [T cooling overload frequency reducing temperature at normal speed] ≤ T outer pipe, then cooling overload protects machine stopping.
- d. If [T cooling overload frequency reducing temperature at high speed] ≤ T outer pipe [T cooling overload power turn-off temperature], you should adjust the compressor frequency by reducing 30Hz/ 90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if [T cooling overload frequency reducing temperature at normal speed] ≤ [T outer pipe], then cooling overload protects machine stopping.
- e. If the [T cooling overload power turn-off temperature] ≤ T outer pipe, then cooling overload protects machine stopping. If [T outer pipe] ≤ [T cooling overload frequency limited temperature] and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.
- f. If the cooling protection overload power turn-off continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the running time of compressor exceeds the T overload protection times zero clearing time, the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble cannot be resumed, transferring mode will not clear it).

## 7. Overload Protection Function in Heating Mode.

- a. After the compressor stopped working for 180 seconds, if T inner pipe T heating overload frequency limited temperature (the temperature of hysteresis is 35.6°F), the machine is allowed to start, otherwise, it should not be started, and should be stopped to treat according to the overload protection.
- b. Clear the trouble at the mode of power turn-off / heating, and the protection times are not counted.

- c. Frequency Limited
  - If  $[T \text{ heating overload frequency limited temperature}] \leq T \text{ inner pipe} < [T \text{ heating overload frequency reducing temperature at normal speed}]$ , you should limit the frequency raising of the compressor.
- d. Reducing Frequency at Normal Speed and Stopping Machine
  - If  $[T \text{ heating overload frequency reducing temperature at normal speed}] \leq T \text{ inner pipe} < [T \text{ heating overload frequency reducing temperature at high speed}]$ , you should adjust the compressor frequency by reducing 8Hz/90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if  $T \text{ heating overload frequency reducing temperature at normal speed} \leq T \text{ inner pipe}$ , then overload protects machine stopping.
- e. Reducing Frequency at High Speed and Power Turn-off
  - If  $[T \text{ heating overload frequency reducing temperature at high speed}] \leq T \text{ inner pipe} < [T \text{ heating overload power turn-off temperature}]$ , you should adjust the compressor frequency by reducing 30Hz/90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if  $T \text{ heating overload frequency reducing temperature at normal speed} \leq T \text{ outer pipe}$ , then cooling overload protects machine stopping.
- f. Power Turn-off
  - If  $[T \text{ heating overload power turn-off temperature}] \leq T \text{ inner pipe}$ , then overload protects machine stopping. If  $T \text{ inner pipe} < T \text{ heating overload frequency limited temperature}$  and the compressor has been stopped working for 3 minutes, the machine should be allowed to operate.
  - If the overload protection power turn-off continuously occurs six times, it should not be resumed automatically and you should press the ON/OFF button to resume if the fault keeps on. During the process of running, if the run time of compressor exceeds the  $T \text{ overload protection times zero clearing time}$ , the times of overload protection power turn-off should be cleared to recount. The mode of stopping the machine or transferring to supply air will clear the trouble times immediately (if the trouble cannot be resumed, transferring mode will not clear it). Protective function for discharge temperature of compressor.
- g. Starting Estimation
  - After the compressor starts working for 180 seconds, if  $T \text{ discharge} < \text{discharge limited temperature}$  (the temperature of hysteresis is  $35.6^{\circ}\text{F}$ ), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the discharge temperature. The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.
- h. Frequency Limited
  - If  $[T \text{ limited frequency temperature during discharging}] \leq T \text{ discharge} < [T \text{ frequency reducing temperature at normal speed during discharging}]$ , you should limit the frequency raising of the compressor.
- i. Reducing Frequency at Normal Speed and Stopping Machine
  - If  $[T \text{ frequency reducing temperature at normal speed during discharging}] \leq T \text{ discharge} < [T \text{ frequency reducing temperature at high speed during discharging}]$ , you should adjust the compressor frequency by reducing 8Hz/90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if  $[T \text{ frequency reducing temperature at normal speed during discharging}] \leq T \text{ discharge}$ , you should discharge to protect machine stopping.
- j. Reducing Frequency at High Speed and Power Turn-off
  - If  $[T \text{ frequency reducing temperature at high speed during discharging}] \leq T \text{ discharge} < [T \text{ stop temperature during discharging}]$ , you should adjust the compressor frequency by reducing 30Hz/90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if  $[T \text{ frequency reducing temperature at normal speed during discharging}] \leq T \text{ discharge}$ , you should discharge to protect machine stopping.
- k. Power Turn-off
  - If  $[T \text{ power turn-off temperature during discharging}] \leq T \text{ discharge}$ , you should discharge to protect machine stopping. If  $T \text{ discharge} < [T \text{ limited frequency temperature during discharging}]$  and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.
  - If the discharging temperature protection of compressor continuously occurs 6 times, it should not be resumed automatically and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the  $T \text{ protection times clearing of discharge}$ , the discharge protection is cleared to recount. Stopped or transferred to supply air mode will clear the trouble times immediately (if the trouble protection cannot be resumed, mode transferring also will not clear it.).
- l. Frequency Limited
  - If  $[I \text{ limited frequency when overcurrent}] \leq I \text{ AC electric current} < [I \text{ frequency reducing when overcurrent}]$ , you should limit the frequency raising of compressor.
- m.Reducing Frequency
  - If  $[I \text{ frequency reducing when overcurrent}] \leq [I \text{ AC electric current } I \text{ power turn-off when overcurrent}]$ , you should reduce the compressor frequency until the lower limit or exit the frequency reducing condition.
- n. Power Turn-Off
  - If  $[I \text{ power turn-off machine when overcurrent}] \leq [I \text{ AC electric current}]$ , you should carry out the overcurrent stopping protection. If  $I \text{ AC electric current} < [I \text{ limited frequency when overcurrent}]$  and the compressor and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.

- If the overcurrent protection continuously occurs 6 times, it should not be resumed automatically and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [T protection times clearing of overcurrent], the discharge protection is cleared to recount.

## 8. Voltage Sag Protection

- After starting the compressor, if the time of DC link voltage sag [U sagging protection voltage] is measured to be less than T voltage sag protection time the machine should be stopped at once, hand on the voltage sag trouble, reboot automatically after 30 minutes.

## 9. Communication Fault

- When a signal fails to come from the indoor unit within 3 minutes, the machine will stop for a communication fault. When you have not received a signal from the driver IC (aim the remote controller for the separating of main control IC and driver IC), and the machine will stop for communication is resumed, the machine will be allowed to operate.

## 10. Module Protection

- Testing the module protective signal immediately after started, once the module protective signal is measured, stop the machine with module protection immediately. If the module protection is resumed, the machine will be allowed to operate, if the module protection continuously occurs 3 times, it should not be resumed automatically, and you should press the ON/OFF button to resume. If the running time of compressor exceeds the [T protection time clearing of module], the module protection is cleared to recount.

## 11. Module Overheating Protection

- Starting Estimation
  - After the compressor stopped working for 180 seconds, if  $T_{\text{module}} < [T_{\text{module frequency limited temperature}}]$  (the temperature of hysteresis is 35.6OF), the machine is allowed to start, otherwise it should not be started, and should be stopped to treat according to the module overheating protection. The machine should be stopped or transferred to supply air, the trouble should be cleared immediately, and the protection times are not counted.
- Frequency Limited
  - If  $[T_{\text{limited frequency temperature of module}}] \leq T_{\text{module}} < [T_{\text{frequency reducing temperature at normal speed of module}}]$ , you should limit the frequency raising of compressor.
- Reducing Frequency at Normal Speed and Power Turn-off
  - If  $[T_{\text{frequency reducing temperature at normal speed of module}}] \leq T_{\text{module}} < [T_{\text{frequency reducing temperature at high speed of module}}]$ , you should adjust the compressor frequency by reducing 8Hz/90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if  $[T_{\text{frequency reducing temperature at normal speed of module}}] \leq T_{\text{module}}$ , you should stop the machine for module overheating protection.
- Reducing Frequency at High Speed and Power Turn-off
  - If  $[T_{\text{frequency reducing temperature at high speed of module}}] \leq T_{\text{module}} < [T_{\text{power turn-off temperature of module}}]$ , you should adjust the compressor frequency by reducing 30Hz/90 seconds until the lower limit. After it was running 90 seconds at the lower limit, if  $[T_{\text{frequency reducing temperature at normal speed of module}}] \leq T_{\text{module}}$ , you should stop the machine for module overheating protection.
- Power Turn-off
  - If the  $[T_{\text{power turn-off temperature of module}}] \leq T_{\text{module}}$ , you should stop the machine for module overheating protection. If  $T_{\text{module}} < [T_{\text{limited frequency temperature of module}}]$  and the compressor has been stopped for 3 minutes, the machine should be allowed to operate.
  - If protection continuously occurs 6 times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [T protection times clearing of module], the discharge protection is cleared to recount. Stopped or transferred to supply mode will clear the trouble times immediately (if the trouble cannot be resumed, mode transferring also will not clear it).
- Compressor Overloads Protection
  - If you measure the compressor overload switch action in 3 seconds, the compressor should be stopped for overloading. The machine should be allowed to operate protection was measured to resume. If the overloading protection continuously occurs for three times, it should not be resumed automatically, and you should press the ON/OFF button to resume. The protection times of compressor is allowed to clear after the compressor run [T protection times clearing of compressor overloading].
- Phase Current Overcurrent Protection of Compressor
  - During the running process of compressor, you could measure the phase current of the compressor, and control it according to the following steps:
    - Frequency limited – If  $[I_{\text{limited frequency phase current}}] \leq [I_{\text{phase current T frequency reducing phase current}}]$ , you should limit the frequency raising of compressor.

- Reducing frequency – If [I frequency reducing phase current]  $\leq$  I phase current  $<$  [I phase turn-off phase current], the compressor shall continue to reduce frequency until the lowest frequency limit or out of the condition of reducing frequency.
- Power turn-off – If [I phase current]  $\geq$  [I power turn-off phase current], the compressor phase current shall stop working for overcurrent protection, if [I phase current]  $\leq$  [I frequency reducing phase current], and the compressor have stopped working for 3 minutes, the machine shall be allowed to operate.
- If the overcurrent protection of compressor phase current continuously occurs for six times, it should not be resumed automatically, and you should press the ON/OFF button to resume. During the process of running, if the running time of compressor exceeds the [T clearing time of compressor phase current times], the overcurrent protection is cleared to recount.

## 12. Starting-up Failure Protection for Compressor

- a. Stop the compressor after its starting-up fails, restart it after 20 seconds if the fault does not show, and if they are all failing for the successive start 3 time, it shall be reported as starting-up failure, and then restart after 3 minutes. When it still not be able to operate through carry out the above process for 5 times, it is available if press ON/OFF. And the compressor should be cleared the times after it run 2 minutes.

## 13. Out-of-Step Protection for Compressor

- a. The out-of-step protection signal should be detected immediately after starting-up compressor, and once find the out-of-step protection signal, the out-of-step protection shall be stopped, if it can run for lasting power turn-off 3 minutes, the machine shall be allowed to operate. If it still can't run automatically when the out-of-step protection for compressor happens to stop working for 6 times in succession, it needs to press ON/OFF to operate. And if the running time is more than 10 minutes, the power turn-off times for out-of-step protection shall be cleared and recounted.

## 14. Voltage Abnormality Protection for DC Bus

- a. To detect voltage abnormality for DC bus after completing the pre-charge.
  - i. Over-high Voltage Protection for DC Bus: If it found the DC bus voltage  $UDC > [UDC \text{ Jiekuangchun protection}]$ , turn off PFC and stop the compressor at once, and it shall show the DC over-high voltage failure, it should clear out the failure when the voltage dropped to  $UDC < [UDC \text{ Jiekuangchun recovery}]$  and the compressor stopped for 3 minutes.
  - ii. Over-low Voltage Protection for DC Bus: If it found the DC bus voltage  $UDC < [UDC \text{ Jiekuangchun protection}]$ , turn off PFC and stop the compressor at once, and it shall show the DC over-low voltage, and it should clear out the failure when the voltage is raised  $UDC > [UDC \text{ Wantuochun recovery}]$  and the compressor stopped for 3 minutes.
  - iii. To Detect Voltage Abnormality Protect for DC Bus When Getting Electricity: If it found the DC bus voltage  $UDC > [UD \text{ over-high voltage}]$ , turn off the relay at once, and shows voltage abnormality failure for DC bus. And the failure cannot recover except to break-off and get the electricity.
- b. Abnormality Protection for Four-Way Valve
  - i. Under the model of heating operation in good condition, the compressor is detected [T inner pipe  $<$  (T inner ring – T abnormality temperature difference for four-way valve reversion)], during the running, it should be regarded as four-way valve reversion abnormality. And then it can run if stop the reversion abnormality protection for four-way valve 3 minutes, and if it still cannot run when the reversion abnormality protection for four-way valve happens to stop working for 3 times in succession it is available for ON/OFF.
  - ii. Attention: the protection shall be shielded during the testing mode and defrosting process, and it shall be cleared out the failure and its times immediately when turning off or delivering wind/cooling/dehumidifying mode conversed (the inverted mode does not clear out the failure when it cannot recover to operate).
- c. PFC Protection
  - i. After you start the PFC, it should detect the protection signal of the PFC immediately. Under the condition of PFC protection, it should turn-off the PFC and compressor at one time.
  - ii. It shows the failure is cleared out if PFC protection stopped working 3 minutes and recovers to run automatically.
  - iii. If it still cannot run when it occurs PFC protection for 3 times in succession, it is available if presses ON/OFF and clear the PFC protection times when start-up PFC from 10 minutes.
- d. Failure Detection for Sensor
  - i. Outdoor Ambient Sensor
    1. Detects the failure of sensor at all times.
  - ii. Outdoor Tube Sensor
    1. You should not detect the failure of outdoor tube sensor within 10 minutes heating operation compressor except the defrosting and you could detect it at other times.
  - iii. Outdoor Exhaust Sensor
    1. The compressor only detects the sensor failure after it starts for 3 minutes in normal mode.
    2. It should detect the exhaust sensor failure immediately in the testing mode.

iv. Module Temperature Sensor

1. Short circuit detection: the compressor should be detected immediately when the module temperature sensor occurs short-circuits.
2. Open circuit detection: the compressor should be detected on open circuit when it runs 3 minutes (it does not need to have 30 seconds avoiding the module overheated).
3. Detect the sensor failure at all times in the testing mode.

v. Disposal Sensor Protection

1. When the short circuit of sensor is detected within 30 seconds, it is regarded as the temperature of sensor over-high (or infinitely high), and now according to the over high sensor, the machine should be carrying out the corresponding protection stop working and show the corresponding temperature shutdown protection and sensor failure at the same time (for example: the compressor stops immediately when the outdoor tube sensor short circuit, and the machine shall show the overload protection and outdoor tube failure).
2. When the open-circuit of sensor is detected with-in 30 seconds. The protection shall be stopped and it shall show the corresponding sensor failure.

**15. Electric Heating Function of Chassis**

- a. When  $T_{\text{outdoor amb.}} \leq 32^{\circ}\text{F}$ , the electric heating of chassis will operate.
- b. When  $T_{\text{outdoor amb.}} > 35.6^{\circ}\text{F}$ , the electric heating of chassis will keep original status.
- c. When  $32^{\circ}\text{F} < T_{\text{outdoor amb.}} \leq 35.6^{\circ}\text{F}$ , the electric heating of chassis will keep original status.

**16. Electric Heating Function of Compressor**

- a. When  $T_{\text{outdoor amb.}} \leq 23^{\circ}\text{F}$ , compressor stops operation, while the electric heating of compressor starts operation.
- b. When  $T_{\text{outdoor amb.}} > 28.4^{\circ}\text{F}$ , the electric heating of compressor stops operation.
- c. When  $23^{\circ}\text{F} < T_{\text{outdoor amb.}} \leq 28.4^{\circ}\text{F}$ , the electric heating of compressor will keep original status.

## 1.3 GREE + APP OPERATION MANUAL

### Control the comfort - With your smartphone!

For the ultimate in convenience, selected AC Pro Heat Pump and Air Conditioner models feature a built-in intelligent WiFi capability and GREE+ SmartPhone app. This allows you to operate the unit through your smartphone anywhere a WIFI network can be found. The GREE+ app is compatible with devices using standard Android or iOS operating systems.

#### Operating System Requirements for Your Smartphone



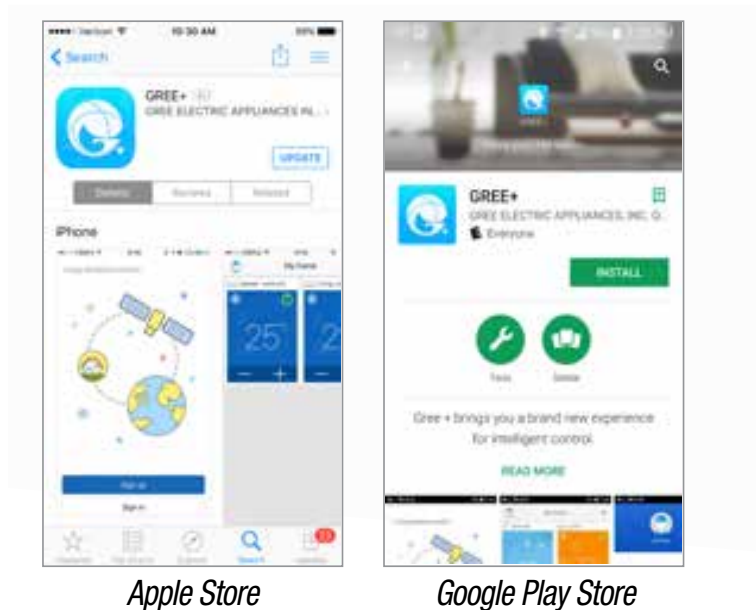
iOS System supports iOS 7.0 and above.



Android System supports Android 4.0 and above.


### Adding the Gree + App to Your Phone

Download the Gree + app directly to your phone from the Apple Store or Google Play Store. When the GREE+ app has successfully downloaded to your phone, close the Apple Store or Google Play Store app.



### Registering your AC Pro Unit to Wifi System

#### Step 1: Turn on the Units wifi interface

Remote Controls with a "WIFI" button: turn ON the Gree system. Press and hold the "WIFI" button for 1 second until the unit beeps for the second time and the WIFI icon  appears on the display. Repeat the procedure to turn WIFI mode OFF.

Remote controls without a "WIFI" button: press and hold both the "Mode" and "Turbo" buttons for 10 seconds until the unit beeps for the second time and the WIFI icon  appears on the display. Repeat the procedure to turn WIFI mode OFF.



## Step 2: Launch the GREE+ app on your smartphone.

Locate the GREE+ icon on your phone. Tap the icon to launch the app.



## Step 3: Sign up for Gree Universal WIFI access.

The GREE+ Login screen will be displayed.

For first-time users, select the "Sign Up" button to create an account and register your AC Pro unit on the WIFI System.

On the Sign Up screen, you should

- Create a User Name
- Enter your email address
- Create a password
- Select region (i.e., North America)

Then tap "Sign Up" button.



*Login Screen*



*1st Time Sign Up Screen*

For future reference, record the user name, email address and password used to set up your account.

User Name: \_\_\_\_\_

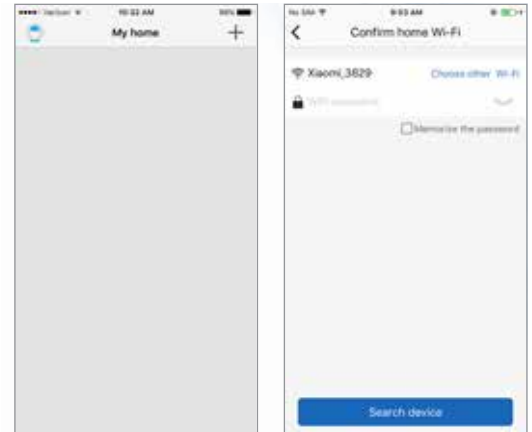
Email Address: \_\_\_\_\_

Password: \_\_\_\_\_

#### Step 4: Add your WIFI network to the GREE+ app.

The GREE+ Login screen will be displayed.

This is the local WIFI network the AC Pro unit will be connected to and communicating through. From the My Home screen, tap the "+" button to add your WIFI network. Select your home or office WIFI network and enter the WIFI network password. If you want GREE+ to remember your network password, check the box (optional). Tap the "Search for Device" button.




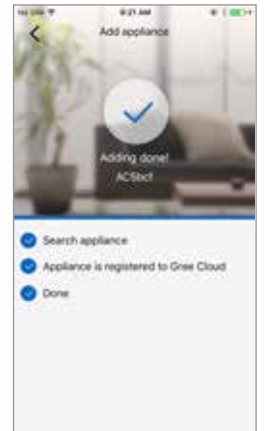
WIFI Network Screen

#### Step 5: Add your AC Pro unit to the GREE+ app.

GREE+ will search your WIFI network for AC Pro units. When a AC Pro unit is found, it will automatically be registered on the WIFI system. GREE+ will display the device name (ex., AC5bcf) of your AC Pro unit.

#### Step 6: Return to the Home Screen

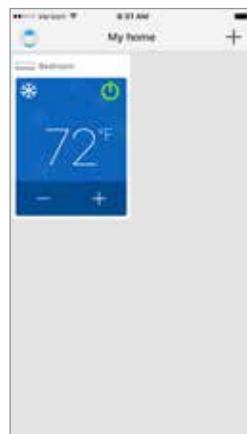
Tap the back "<" button to return to the My Home screen. Your unit will be displayed on the My Home screen. Turn your unit "ON" and "OFF" by tapping the  circle button. For a full screen display, tap the unit display.



Registration Confirmation Screen



Unit "OFF" My Home Screen




Unit "ON" My Home Screen



Unit "ON" Full Screen

## Customize the GREE+ app on your smartphone.

### Step 1: Settings

Tap the "Settings"  button to open the settings screen. From the settings screen, you can customize the unit name, lock the device and check your version of Firmware.



Settings Screen

### Step 2: Customize

Set a custom name for your Gree unit for easy and quick identification (ex., Living Room, Den, Bedroom). To change the device name, tap on the current device name and then type in a new name.

### Step 3: Turn On/Off Privacy Lock Mode

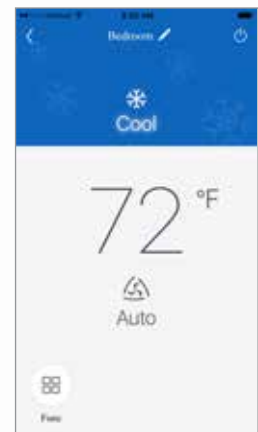
Privacy Lock Mode prevents unauthorized access to the unit controls and prevents unauthorized users from tampering with system settings. Turn Lock on and off by sliding the Device Lock button to the right or left to lock or unlock.

### Step 4: Return to Full Screen Display.

Tap the "Save" button.

### Step 5: Return to my home screen.

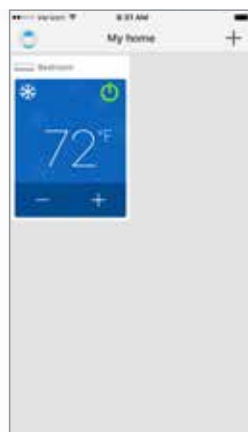
Tap the "<" button to return to this screen.



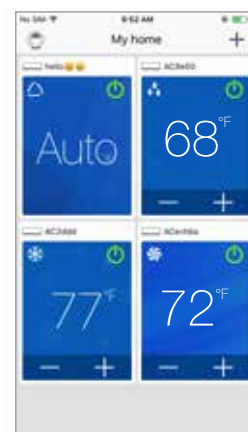
Home Screen

## Add up to four units to the GREE+ app on your smartphone.

Repeat the "Registering your AC Pro unit on the WIFI System" section above for each new device.



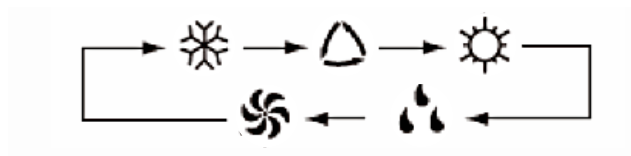
Single Unit Screen



Multiple Units Screen

## OPERATING MODE

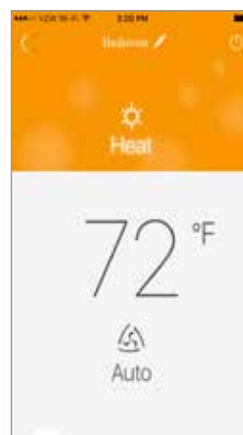
Select "Auto", "Cool", "Dry", "Fan" or "Heat" by sliding the mode icon right or left on the smartphone display. The modes will be displayed as follows:



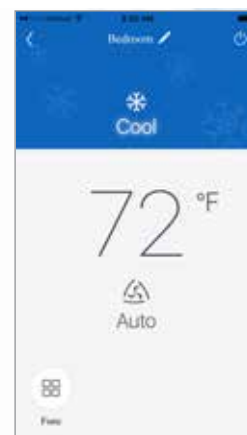
See Remote Controller instructions for detailed operation of these modes.

## ADJUST TEMPERATURE SETTING

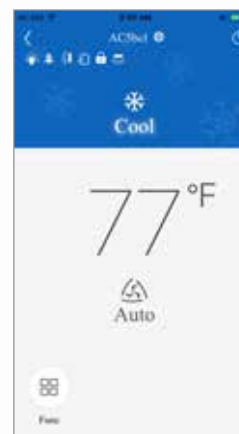
Room temperature setting can be adjusted between 61°F to 86°F by scrolling to the room temperature icon right or left on the smartphone display.



*Heat Mode*



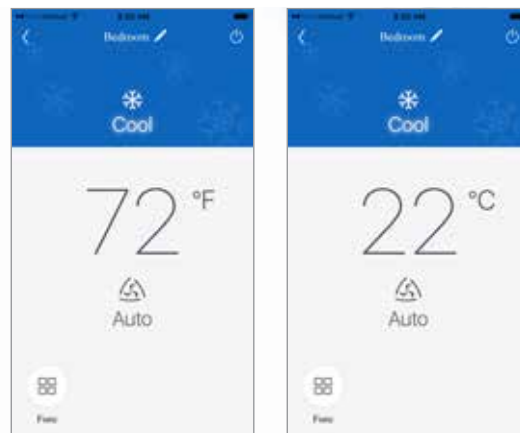
*Cool Mode*



*Temperature Setting*

## FAHRENHEIT °F/CELSIUS °C SCREEN

Initially, the GREE+ app will display temperatures in °F.  
To switch the display to °C, tap the °F icon on the smartphone Screen. Repeat the procedure to switch the display back to °F.



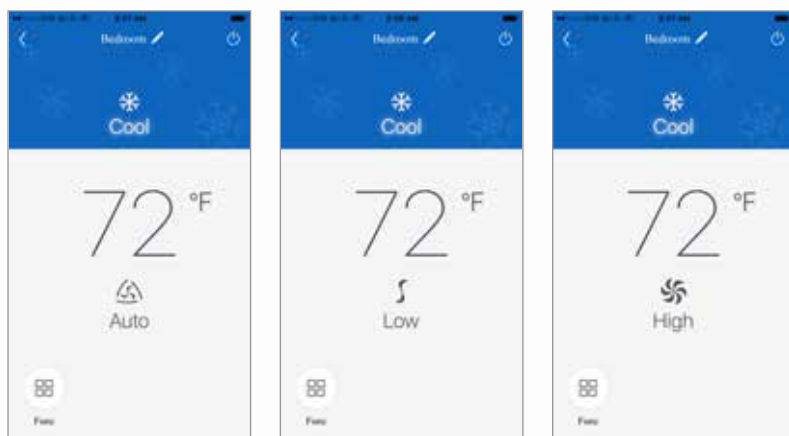
*Fahrenheit °F/Celsius °C Screen*

## Fan Modes

Fan mode can be adjusted by sliding the fan icon right or left on the smartphone screen. The fan modes will be displayed as follows:




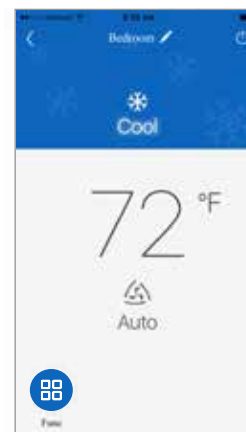
See Remote Controller instructions for detailed operation



*Fan Mode Screens*

## OPEN SPECIAL FUNCTIONS

The GREE+ app has multiple special functions to improve your comfort, save time and lower energy usage. Tap the "Function" icon  to open the Special Function window.



*Special Functions*



## Ventilate

This function is not included with your system.



*Ventilate Mode*



## X-FAN MODE

When operating in humid areas, the unit has a DRY COIL function called X-Fan. This function will allow the indoor fan to run for a pre-determined amount of time after the unit is turned off (cooling or dry modes) to ensure that additional moisture is removed from coil. Turn the X-Fan feature on by tapping the "Function"  button and then the "X-Fan"  button. Tap again to turn off.



*X-Fan Mode*

## UNIT DISPLAY LIGHT ON/OFF

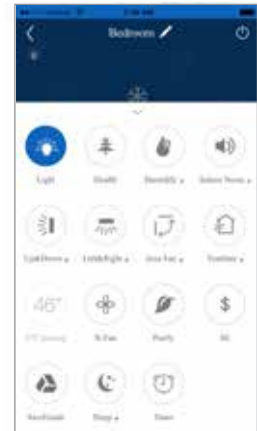
Turn the indoor unit display on by tapping the "Function"  button and then the "Light"  button. Tap again to turn it back off.



*Unit Screen OFF*




*Unit Screen ON*



*Unit Screen Control*



## ENERGY SAVING MODE

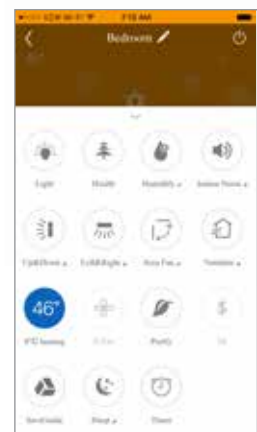
Energy Saving mode will automatically select the optimal compressor and fan speeds to allow for energy savings while operating in Cooling or Heating modes. The compressor and fan will automatically slow down as the room temperature reaches the set point. Turn the Energy Saving on and off by tapping the "Function"  button and then the "SE" \$ button.



*Energy Saving Mode*



## FREEZE GUARD (46°F Heating)

Freeze Guard mode (or vacation mode) will automatically maintain room temperature above 46°F. Turn Freeze Guard on and off by tapping the "Function"  button and then the "46°F"  heating button. Freeze Guard can only be activated in heat mode.



*Freeze Guard Mode*



## VERTICAL SWING LOUVERS

Turn the Vertical (Up & Down) Swing Louvers on and off by tapping the "Function"  button and then the "Vertical Swing Louver"  button. To adjust the discharge air direction, tap on the Up & Down button under the icon to bring up the Swing Louver Setting screen. Then, tap the desired vertical air discharge direction.

**Note: Multiple air directions can be selected by sliding across the screen icons**




## SLEEP MODE

Sleep mode will automatically adjust room temperature during your sleep time. This slight change in temperature will not affect your comfort level due to the natural effects that sleeping has on the body, but it will save on energy consumption and lower your electric bill. For more information, see Sleep Modes in the remote controller instructions. Turn Sleep Mode ON and OFF by tapping the "Function"  button and then the "Sleep"  Button

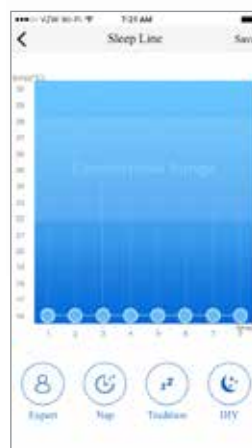


## SLEEP MODE SETTINGS

The Gree unit contains between 1 to 4 different Sleep mode functions depending on the model. To select a Sleep Mode, tap the "Sleep" title under the Sleep icon  to open the Sleep Setting screen.

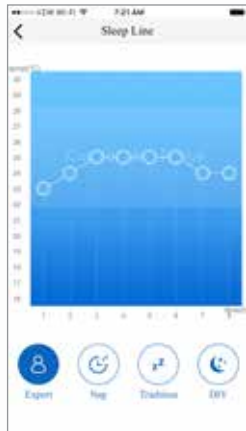


From the Sleep Setting screen, you can select a desired sleep function. You can select the Expert, Nap, Tradition or DIY Sleep functions by tapping the buttons at the bottom of the screen.



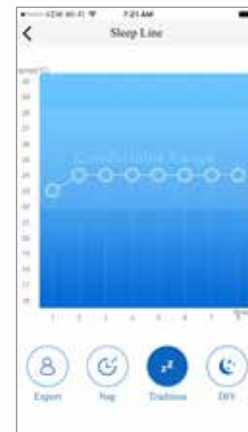
### Sleep Setting Screen

## EXPERT SLEEP MODE



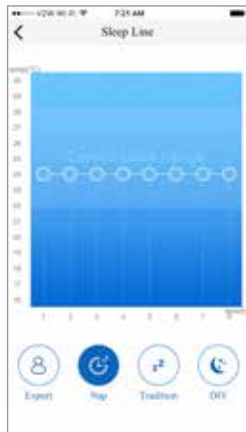
*Expert Sleep Mode Screen*

## TRADITION SLEEP MODE



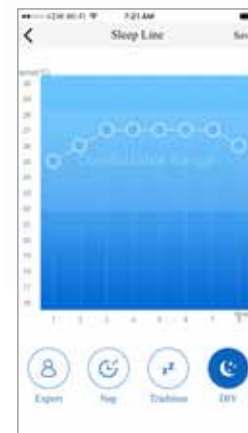
*Tradition Sleep Mode Screen*

## NAP SLEEP MODE



*Nap Sleep Mode Screen*

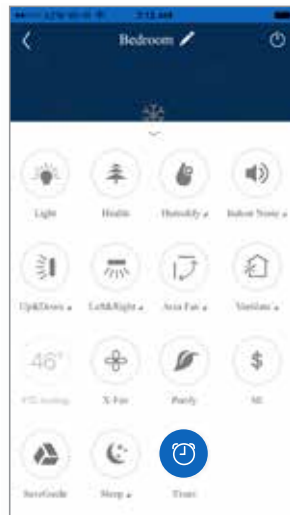
## DIY SLEEP MODE






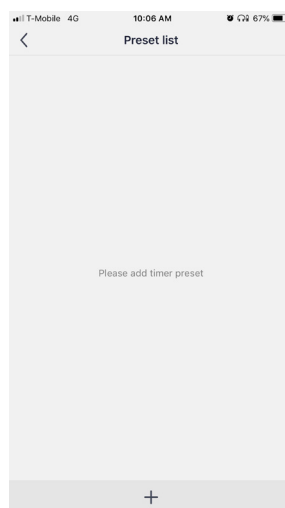
*DIY Sleep Mode Screen*

## TIMER MODE

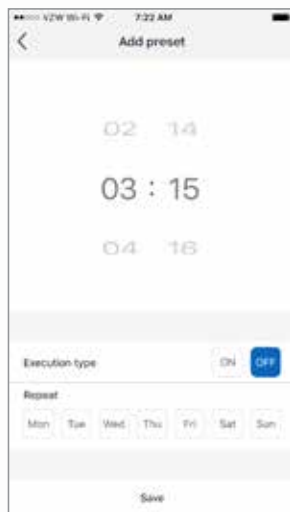
Timer mode will automatically turn the unit ON or OFF on a selected day and time to save on energy consumption and lower your electric bill.



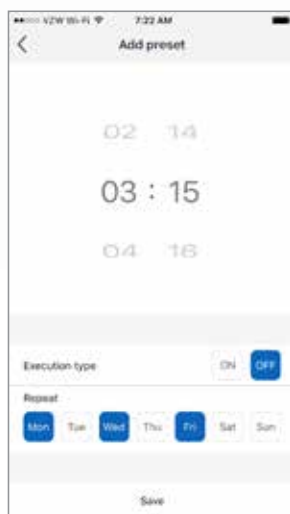
Program Timer Mode by tapping the "Function"  button and then the "Timer"  button. This will bring up the Preset List screen. The Preset List will be empty the first time using Timer Mode. Afterwards, this screen will be a quick reference to the daily Timer program. To create a Timer program, tap the "Plus Sign"  button at the bottom of the screen to launch the Add Preset screen.



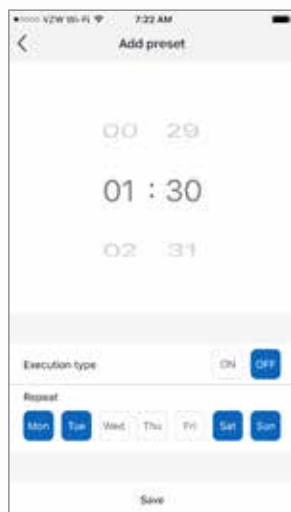
In the Add Preset screen, the unit can be programmed to turn ON and OFF on specific days of the week and time of day.



Select the specific days of the week the unit will turn ON or OFF by tapping the buttons at the bottom of the screen.



Select the specific time of day the unit will turn ON or OFF by scrolling the Hour and Minute screen UP and DOWN.





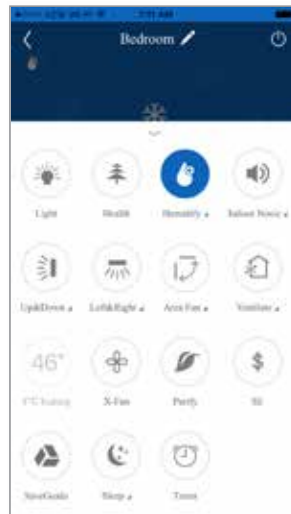
To have the unit turn ON at the programmed time, tap the "ON" button or tap the "OFF" button for the unit to turn OFF.



Then tap the "Save" button to save the program and return to the Preset List screen.


## HUMIDIFY MODE

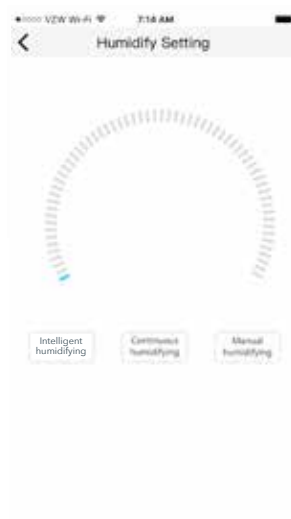
Humidify mode will automatically control the humidity in the room. Turn Humidify Mode ON and OFF by tapping the "Function"  button and then the "Humidify"  button.



*Humidify Mode Screen*

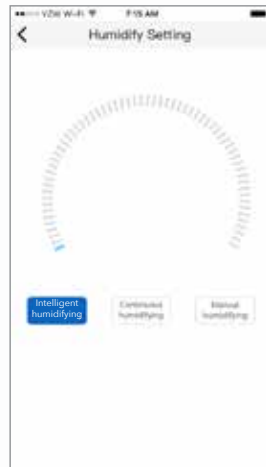
## HUMIDIFY MODE SETTING

To set a humidity level, tap the "Humidify" title under the Humidify  icon to open the Humidify Setting screen. From the Humidify Setting screen, you can select a humidify function. You can select the Intelligent, Continuous, or Manual Humidifying functions by tapping the buttons at the bottom of the screen.



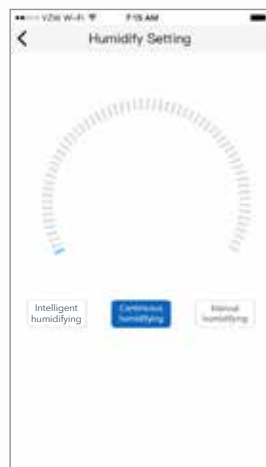
*Humidify Setting Screen*

## INTELLIGENT HUMIDIFYING



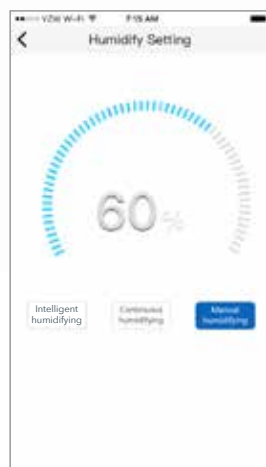
*Intelligent Humidifying Mode Screen*

## CONTINUOUS HUMIDIFYING



*Continuous Humidifying Mode Screen*



## MANUAL HUMIDIFYING

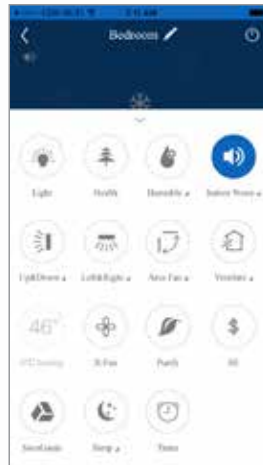


*Manual Humidifying Mode Screen*

Tap the Back "<" button to return to the full screen.


## INDOOR NOISE MODE

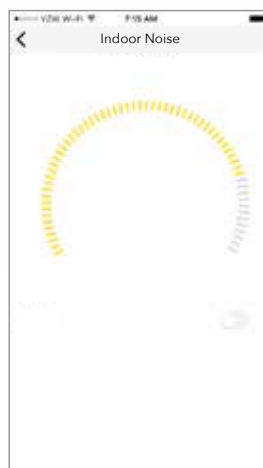
Indoor Noise Mode will automatically control the unit noise in the room. Turn Indoor Noise Mode ON and OFF by tapping the "Function"  button and then the "Indoor Noise"  button.



*Indoor Noise Mode Screen*

## INDOOR NOISE MODE SETTING

To set an indoor noise level, tap the "Indoor Noise" title under the Indoor Noise icon  to open the Indoor Noise Setting display.



*Indoor Noise Setting Screen*





From the Indoor Noise Setting screen, the Indoor Noise Function can be turned ON and OFF by sliding the ON/OFF button right or left. With the Indoor Noise function ON, the Indoor Noise level can be set by sliding Noise Level scale to the desire level.

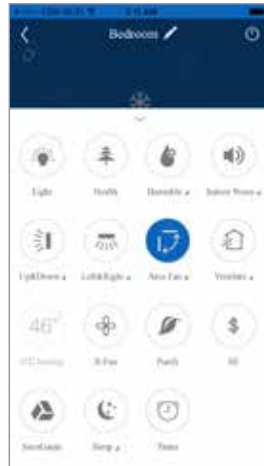


*Indoor Noise Setting Screen*

Tap the Back "<" button to return to the full screen.

## AREA FAN

Area fan mode allows you to customize the unit airflow in the room to greater overall comfort. Turn Area Fan Noise Mode ON and OFF by tapping the "Function"  button and then the "Area Fan"  button.



*Area Fan Mode Screen*

## AREA FAN SETTING

To customize the indoor air flow, tap the "Area Fan" title under the Area Fan icon  to open the Area Fan Setting display.



*Area Fan Setting Screen*

First, turn Area Fan ON by sliding the "Area Fan" button on the right and a person icon will appear on the screen.



Next, configure the room airflow sliding the person icon to the approximate main living area in the room. Then, slide the unit right or left to the approximate mounting location on the wall. This will direct unit airflow to the specific area in the room.



To avoid unit airflow directly at the main living area in the room, slide the "No BLOW Person" button to the right. This will direct the airflow around the specific area. Tap the Back "<" button to return to the full screen. will direct unit airflow to the specific area in the room.