Daikin *One*+ Smart Thermostat Installation & Commissioning

Technical Training Module TRC-3

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Agenda

- Daikin *One*+
- System Configurations
- Installing Daikin *One*+
- Commissioning Daikin *One*+
- Full Set-up
- Dealer Navigation
- Homeowner Navigation
- Mobile Apps

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Daikin *One*+ Smart Thermostat

- Premium control that provides optimal comfort.
- Easy to use, energy efficient, reliable, and ensures that the system is set up properly.
- Designed to regulate and communicate with HVAC equipment.
- The user will be able to control the indoor unit remotely through the Daikin *One* Home app.

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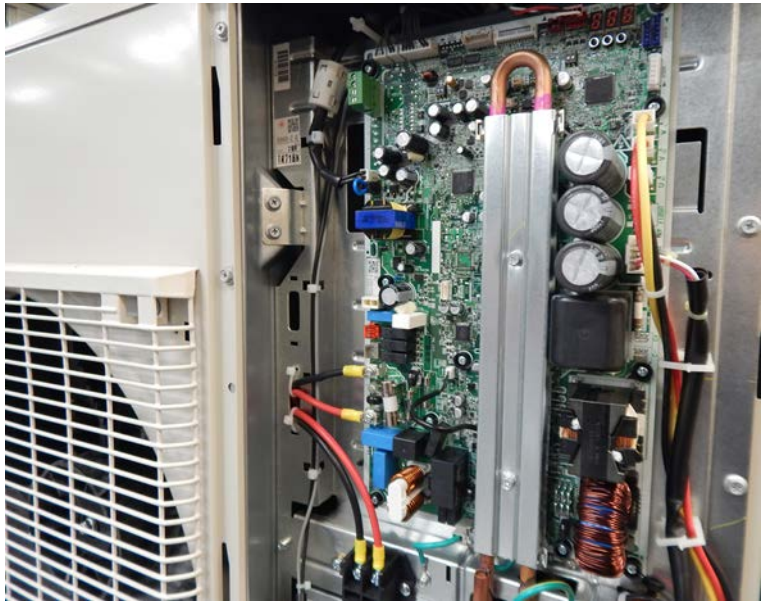
Daikin *One*+ Smart Thermostat

- Offers two-way communication when combined with:.
  - Daikin *FIT* system; air conditioners and heat pumps, residential inverters; air conditioners and heat pumps, and two stage system; air conditioners and heat pumps.
  - Also includes the Daikin *One* ecosystem which provide an integrated solution for temperature control and air quality.
    - Daikin *One* home air monitor (recommend adding the MERV 15 filter)
- Serves as a cloud-connected hub and controller for communicating HVAC systems.



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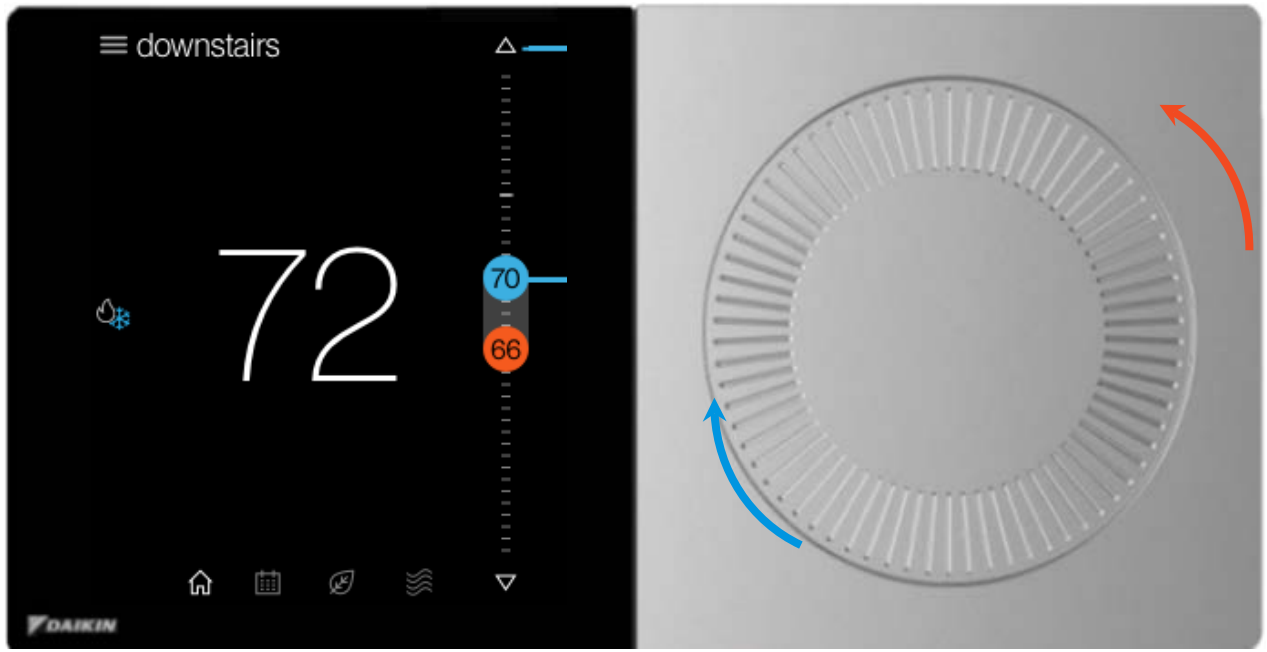
Daikin *One*+ Interface

- The thermostat has a physical dial on the right used for manual setpoints adjustments.
- Pressing the center of the dial at any time during normal mode acts as a home button, displaying the primary screen.
- The high-resolution touch screen on the left supports tactile-based interactions.
- Navigating to each screen is done by tapping an icon.



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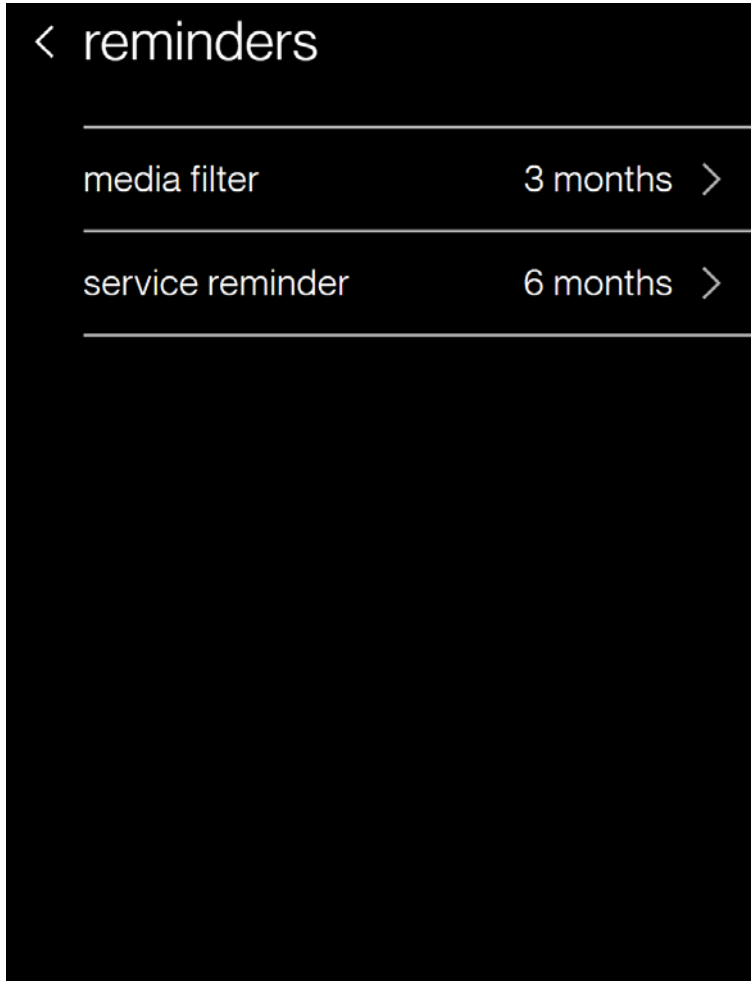
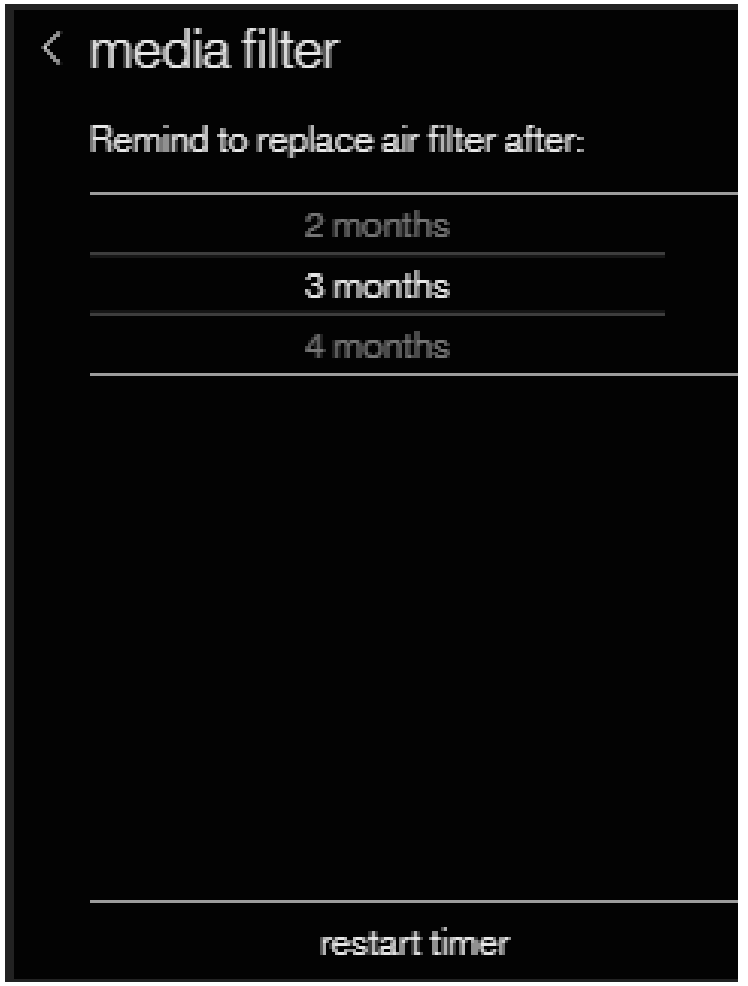
Service Reminders

- Set service reminders to maintain your system.
- Preset reminder options include:
  - Media filter
  - Humidifier Pad
  - Service reminders





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Messaging

- Daikin *One*+'s messaging updates, confirms, and informs about selections you make during set-up and operation.
- There are four types of messages:
  - Status
  - Alerts
  - Reminders and Prompts
  - Learn more/tips

Note: Alerts have priority over all other messages in the system.

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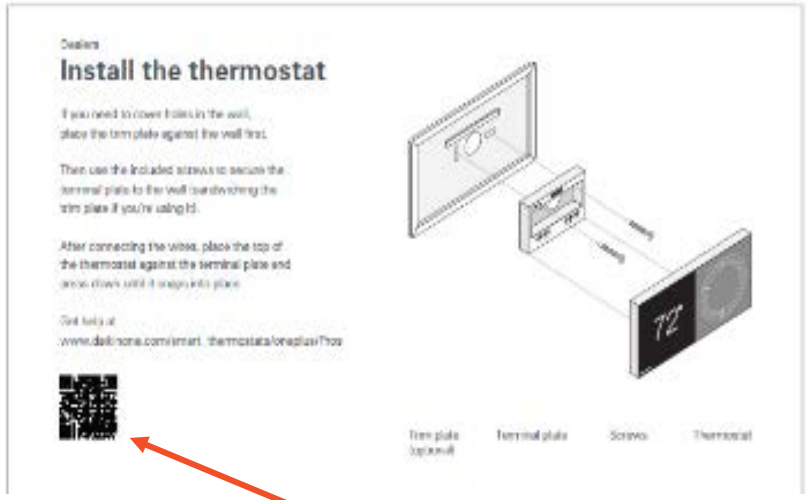
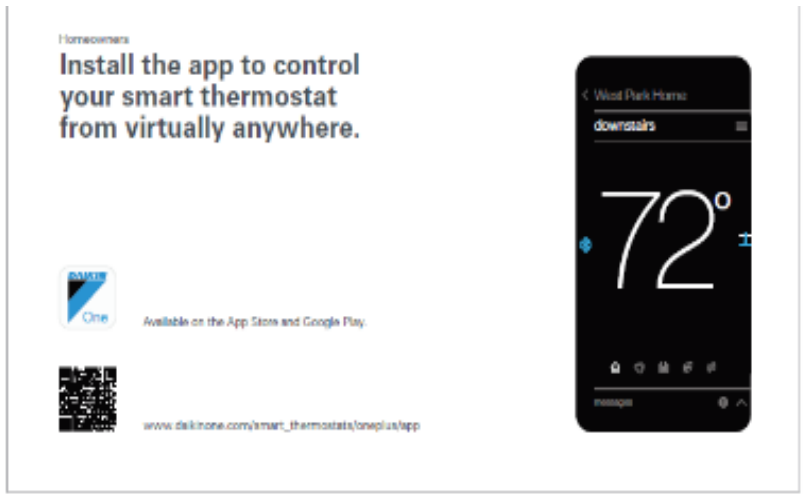
Quick Reference Card

- Quick reference cards are packaged with the thermostat to help answer questions during the installation and commissioning.





Scanning the bar code on the **bottom left** corner will link you to a website related to the title of the card.
https://daikinone.com/smart_thermostats/oneplus/pros/

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Valid System Configurations

Communicating Indoor

- Air handler.
- Furnace.
- EEV coil.

Communicating Outdoor

- Heat pump.
- Air Conditioning.

Non-communicating Indoor

- Furnace
  - Utilizing a D24V Gateway

Non-communicating Outdoor*

- 24V single-stage condenser.

*Added equipment.

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Installing Daikin *One*+ Smart Thermostat

DO NOT Install The Thermostat Where It Can Be Affected By:

- Drafts or dead spots behind doors and in corners.
- Hot or cold air from ducts or ceiling fans.
- Radiant heat from the sun or appliances.
- Concealed pipes and chimneys.
- Unheated (uncooled) areas such as an outside wall.

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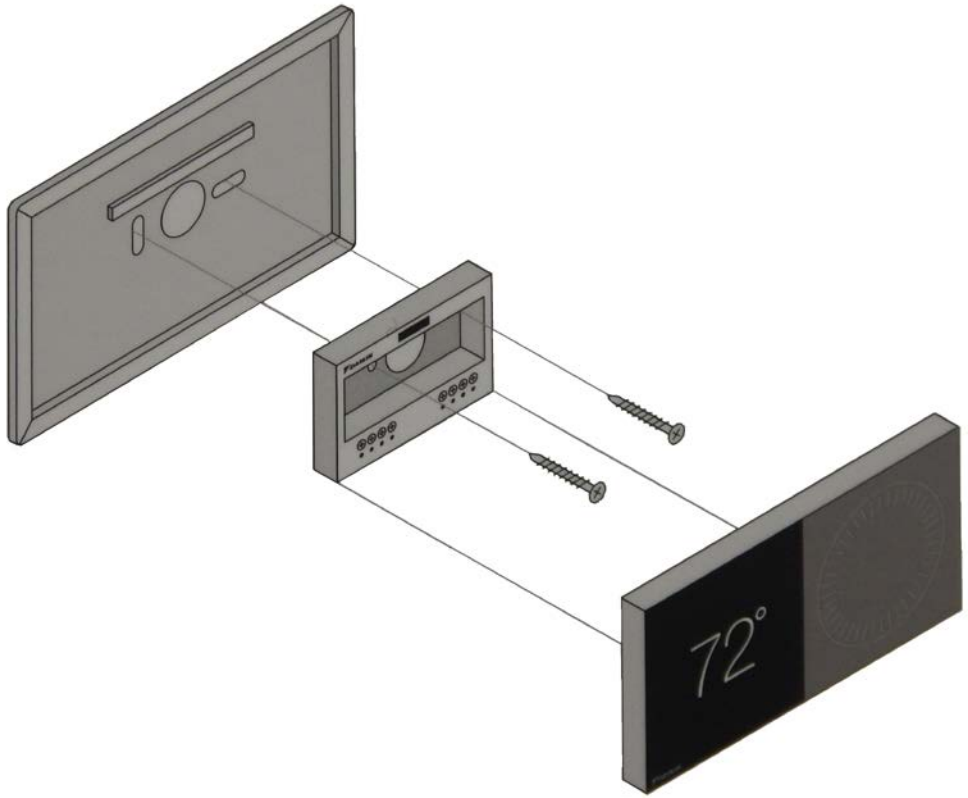
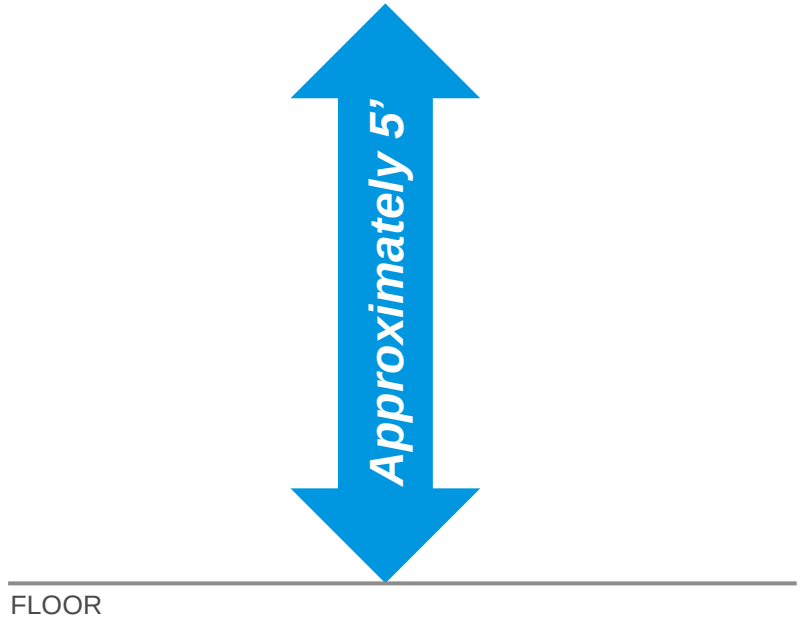
Installing Daikin *One*+ Smart Thermostat

- Mount the thermostat to be
  - Leveled.
  - Approximately 5’ from the floor.
  - On an interior wall using the included screws.





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Installing Daikin *One*+ Smart Thermostat

- Maximum wire distance between the Daikin *One*+ and the indoor unit should not exceed **125 feet using 18 gauge wire.**
- **Check for proper voltage before and after wiring is installed.**
  - 0.6VDC between Data 1 and 2
- Wiring communicating indoor unit to communicating outdoor units.
  - Connect **1, 2, C and R** from the **Daikin One+**, to **1, 2, C and R** at the **indoor** unit.
  - Connect wires **1 and 2** from the **indoor** unit to **1 and 2** at the **outdoor** unit.
- Wiring communicating indoor unit to non-communicating outdoor units.
  - Connect **1, 2, C and R** from the **Daikin *One*+**, to **1, 2, C and R** at the **indoor** unit.
  - Connect wire **Y1** from the **indoor** unit to **Y1** at the **outdoor** unit.

1 **Data Line 1**

2 **Data Line 2**

C **24 volt common**

R **24 volt power**

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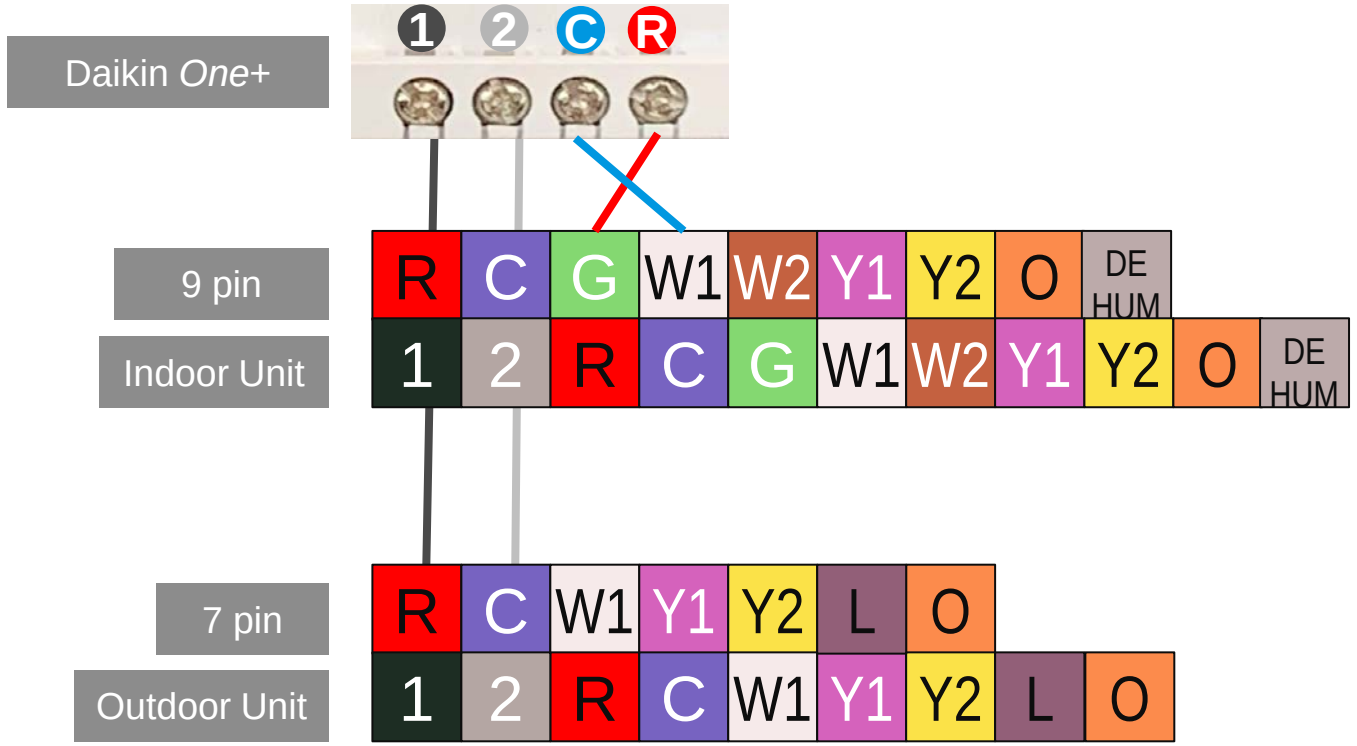
Wiring thermostat to communicating systems

- Communicating indoor units supplied with a **9 pin** connector **only**, will move the connector to the far **left** to pair **R, C, G, W1** on the 9 pin with **1, 2, R, C** on the **indoor PCB.**
- Communicating outdoor units supplied with a **7 pin** connector **only**, will move the connector to the far **left** to pair **R, C** on the 7 pin with **1, 2** on the **outdoor PCB.**

Note: The Daikin *One*+ is labeled **1, 2, C, R. If wired incorrectly, you will receive a communication error, or your equipment may not be recognized and displayed**



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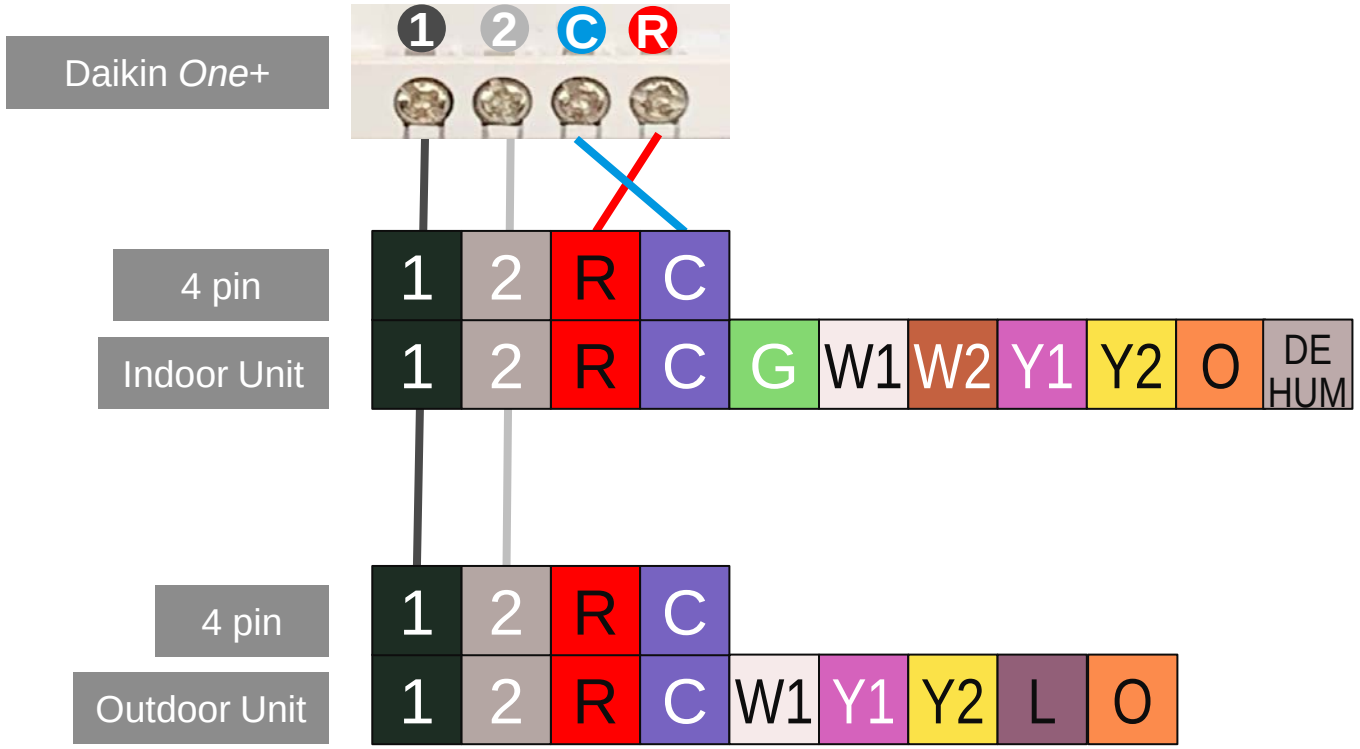
Wiring thermostat to communicating systems

- Communicating indoor units with a **4 pin** connector **supplied**, will match **1, 2, R, C** on the 4 pin with **1, 2, R, C** on the **indoor PCB.**
- Communicating outdoor units with a **4 pin** connector **supplied**, will match **1, 2** on the 4 pin with **1, 2** on the **outdoor PCB.**

Note: The Daikin *One*+ is labeled **1, 2, C, R. If wired incorrectly, you will receive a communication error, or your equipment may not be recognized and displayed.**



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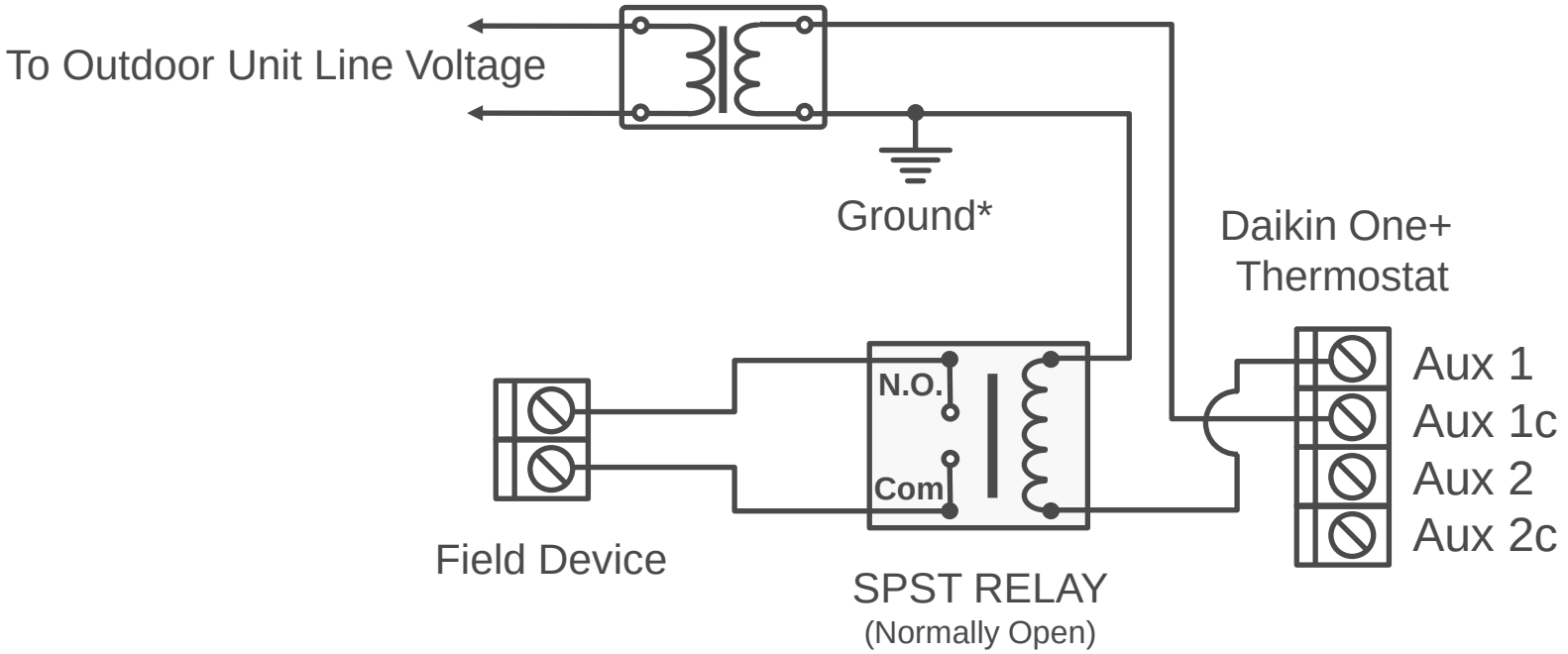
Aux wiring

- The thermostats Aux outputs are dry contacts that close the connection to turn on the Aux equipment.
- A 24V AC control signal must be routed through one of the aux contacts of the thermostat.



*The terminals are selected in the Daikin *One*+ installer wizard.
Note: It is recommended to use a minimum of 18-gauge wire. Maximum operating length of wire is 125 ft.

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Daikin *One*+

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Homeowner Navigation

Mobile Apps

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Commissioning Daikin *One*+ Smart Thermostat

- Begin set-up: walks installers through the entire commissioning process to ensure the system is configured properly and ready for the homeowner to use.
  - Enables random access to any setting.
  - Remembers settings as they are entered.
  - Individual may stop and restart as needed.
- The screens are populated based on the model numbers of the equipment, matched to a database of device configuration settings.

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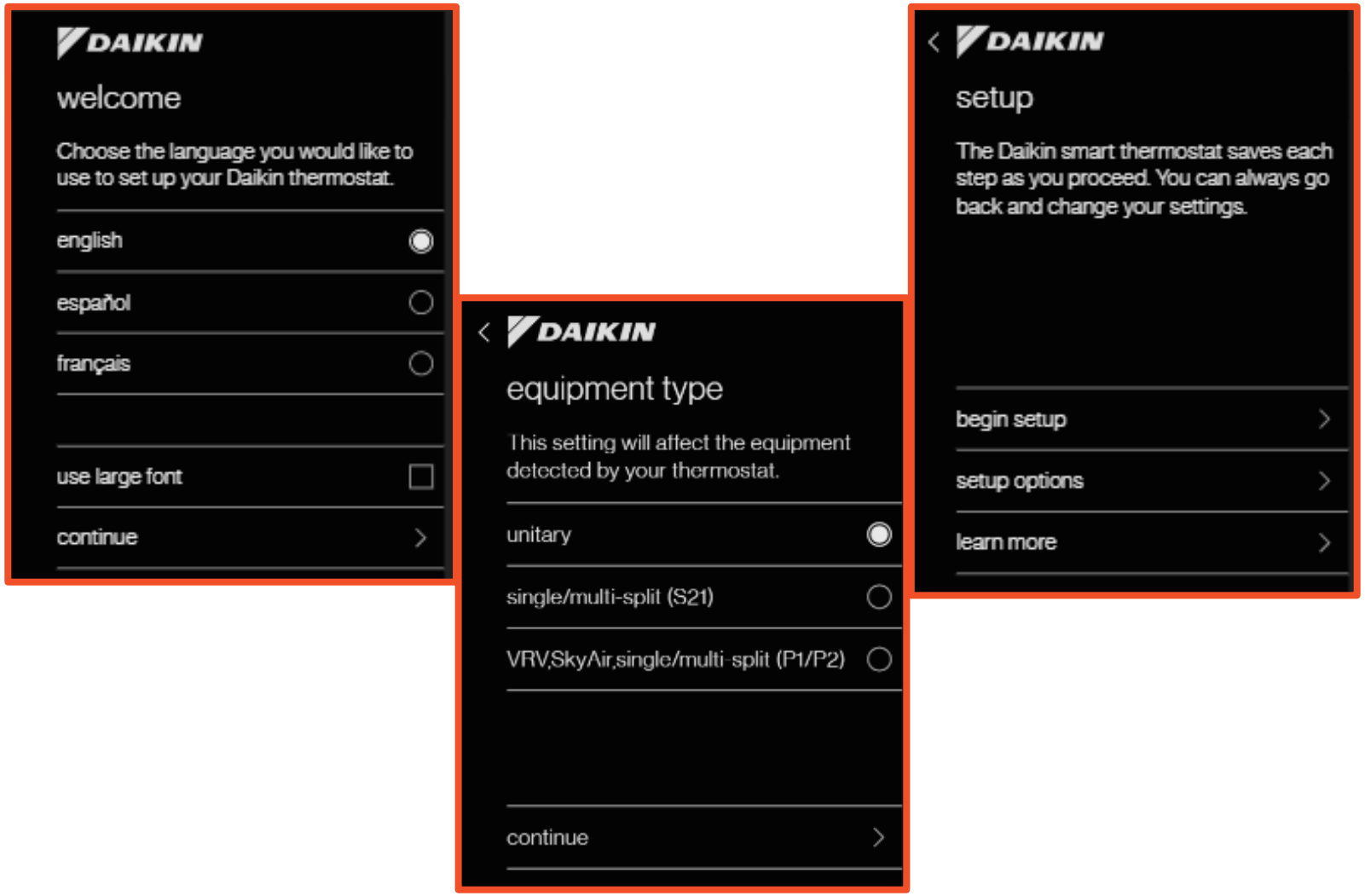
Commissioning Daikin *One*+ Smart Thermostat

- Start-up screen is displayed upon powering the thermostat.
- The welcome screen displays preferences to choose from.
- Select Unitary (default) before moving to the setup screen.
- Version of the thermostat is displayed on the learn more screen.
- Selecting setup options allows you to factory reset the thermostat.



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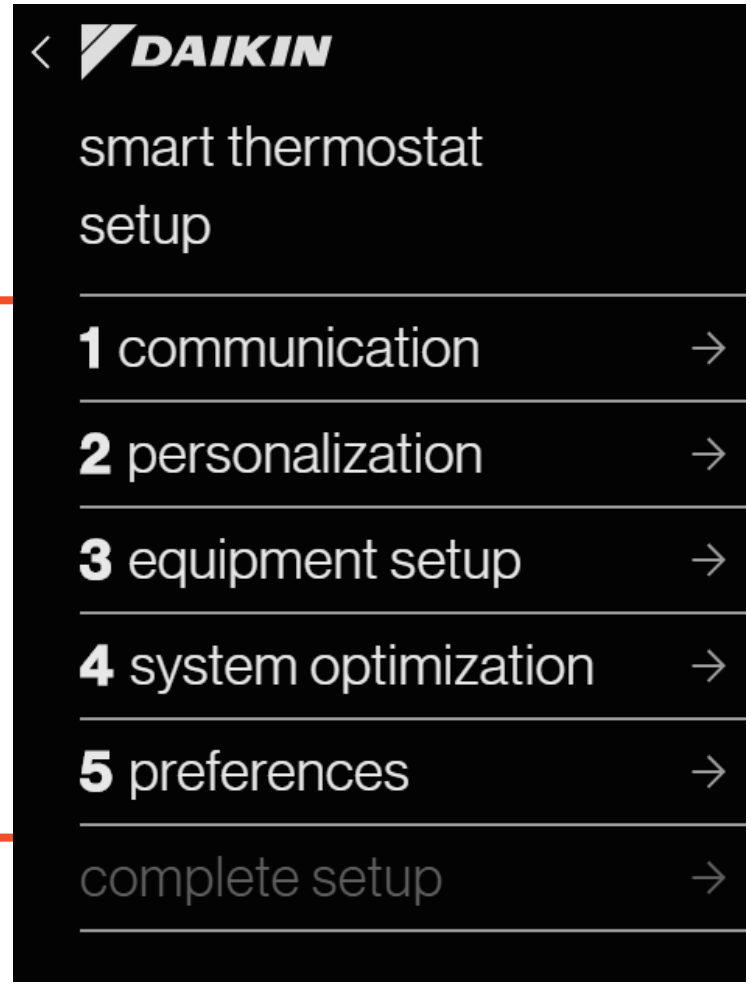
Full Set-up

Start-up

- **Tapping begin set-up starts the five step set-up process:**
  - Communication.
  - Personalization.
  - Equipment Set-up.
  - System Optimization.
  - Preferences.

- **Note:** All steps must be completed and reviewed before completing set-up to ensure the system is configured properly and ready for the homeowner to use.

For detailed menu settings
https://daikinone.com/smart_thermostats/oneplus/pros/



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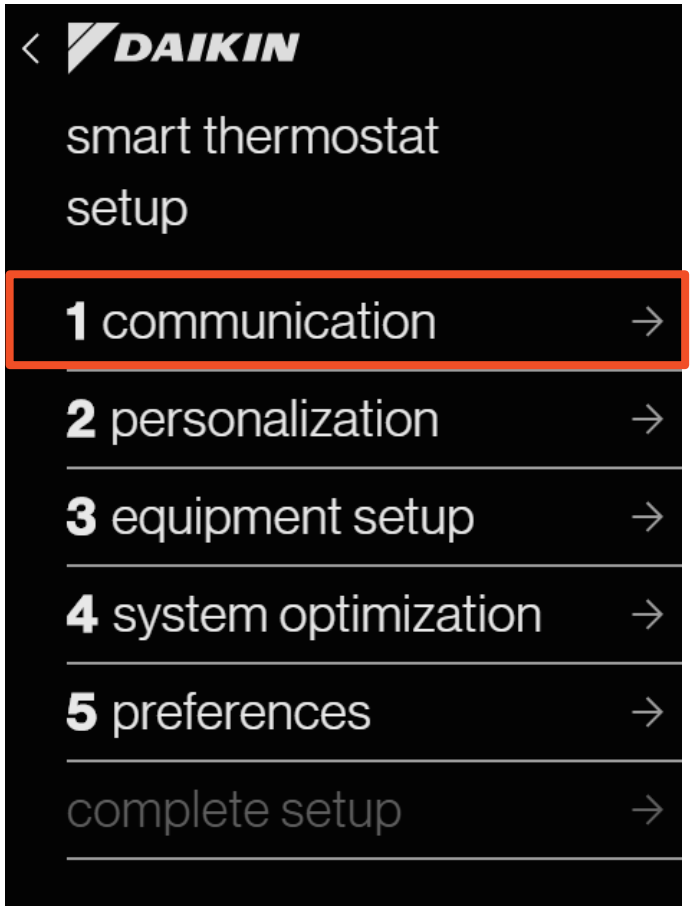
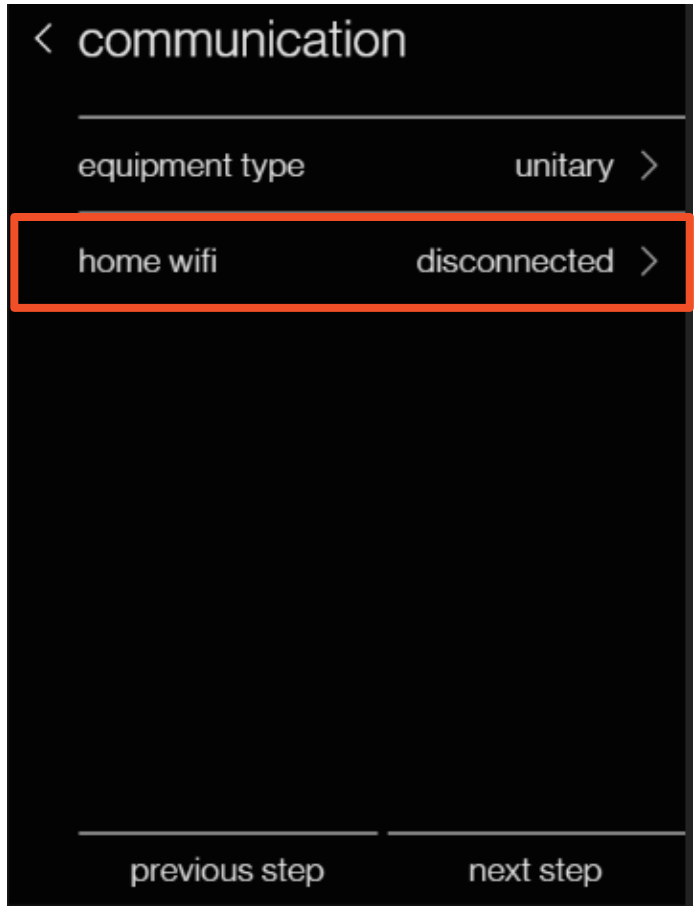
Step 1 - Communication

- Configures **Communication Networks**.
- Select home Wi-Fi to search for networks.
- With **Wi-Fi configured**, the system can check the software version and update software to the **latest** version **automatically**.

Note:

- Wireless router must be password protected.
  - Compatible with 5Ghz routers which supports 2.4Ghz
- Equipment type displays the equipment selected on start up.





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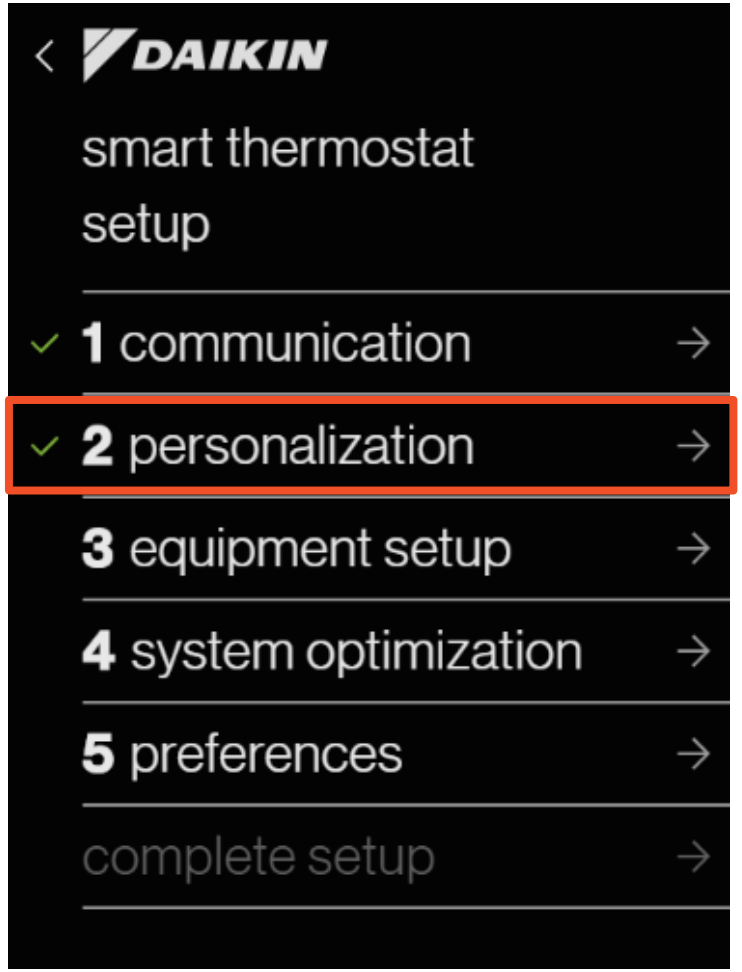
Step 2 - Personalization

- Tapping the **personalization tab** allows you to edit default information.
- Personalization displays:
  - Language.
  - Large font selection.
  - Date & Time.
    - If Wi-Fi is connected, date & time sets automatically.
  - Thermostat Name.
  - Degree Units.

Note: A green check mark appears next to items reviewed from the set-up menu.



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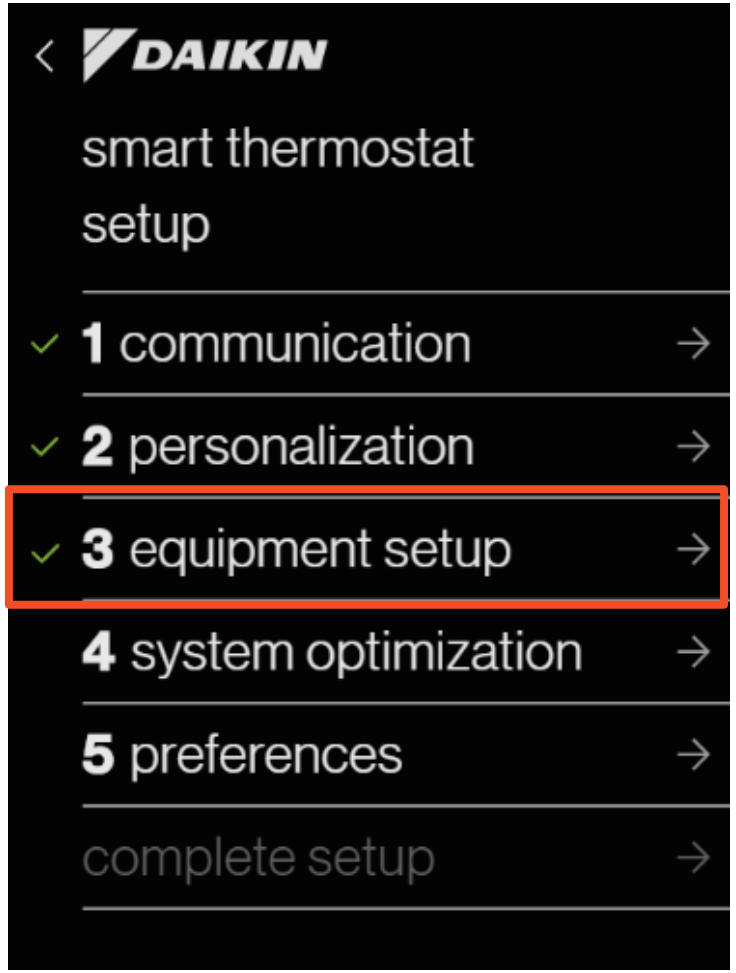
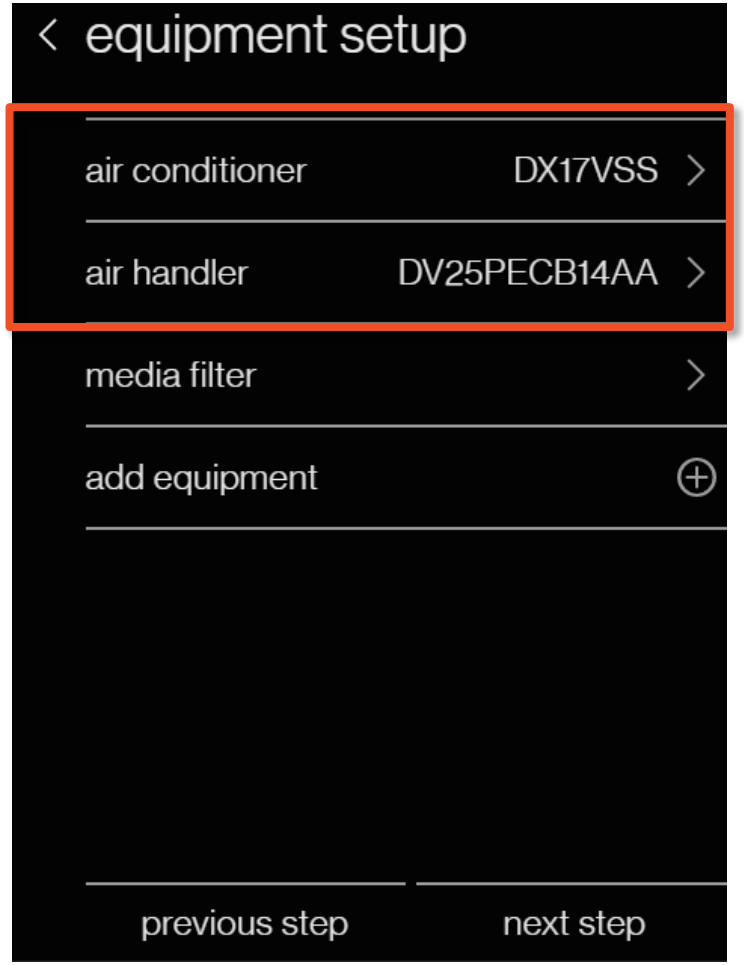
Step 3 - Equipment Set-up

- Displays equipment found by searching the communication network, or by adding/removing equipment and accessories from the preset list.
- The unit that is identified determines the list of configurations that will be displayed
  - View unit Specifications.
  - Configure
    - **Cool settings**
    - **Heat Settings**
    - **Heat Pump Settings**
    - **Humidifier Relay**
    - **Aux alarm**
    - **Heater Kit**





DaikinOnePlusCommissioningMenuOutline-Unitary

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Full Set-up

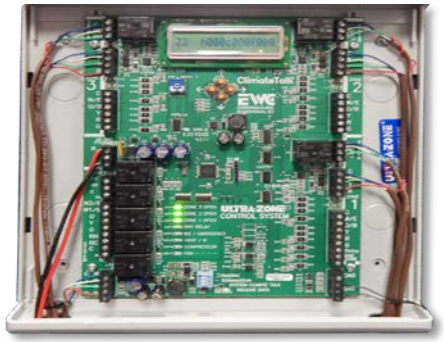
Added Equipment

- The Daikin *One*+ smart thermostat is compatible with multiple accessories.
  - Air quality sensor
  - Humidifier
  - Dehumidifier
    - You can Install the humidifier and dehumidifier by using aux 1 or 2
      - Recommend using an isolation relay between auxiliary device and thermostat.
  - UV Bulb
  - Electronic Filter
  - HEPA filter
  - EWC Zone Board.

Humidifier

Air Quality Sensor

EWC Zone Board



Dehumidifier

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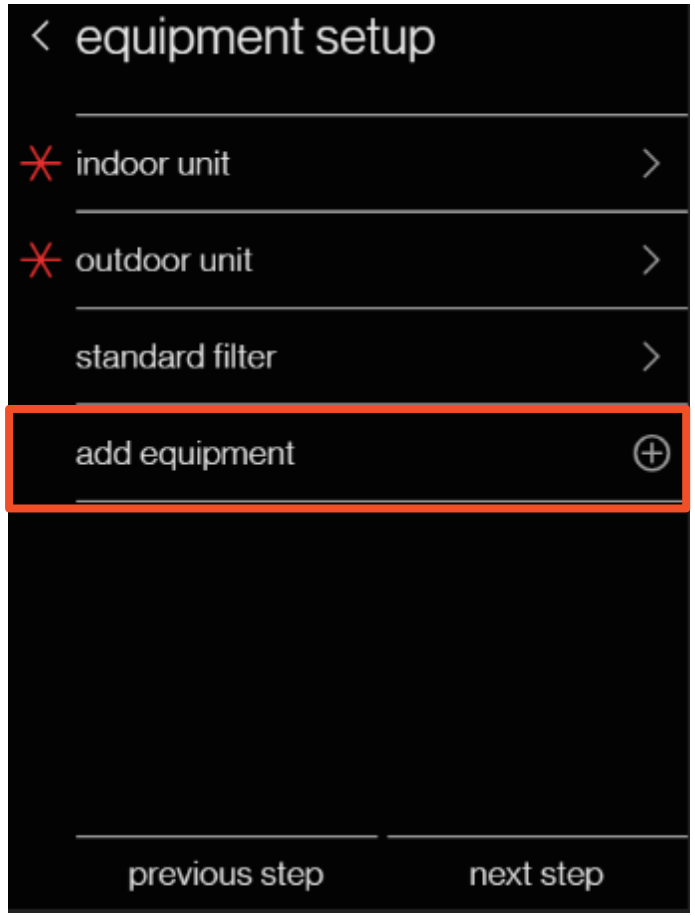
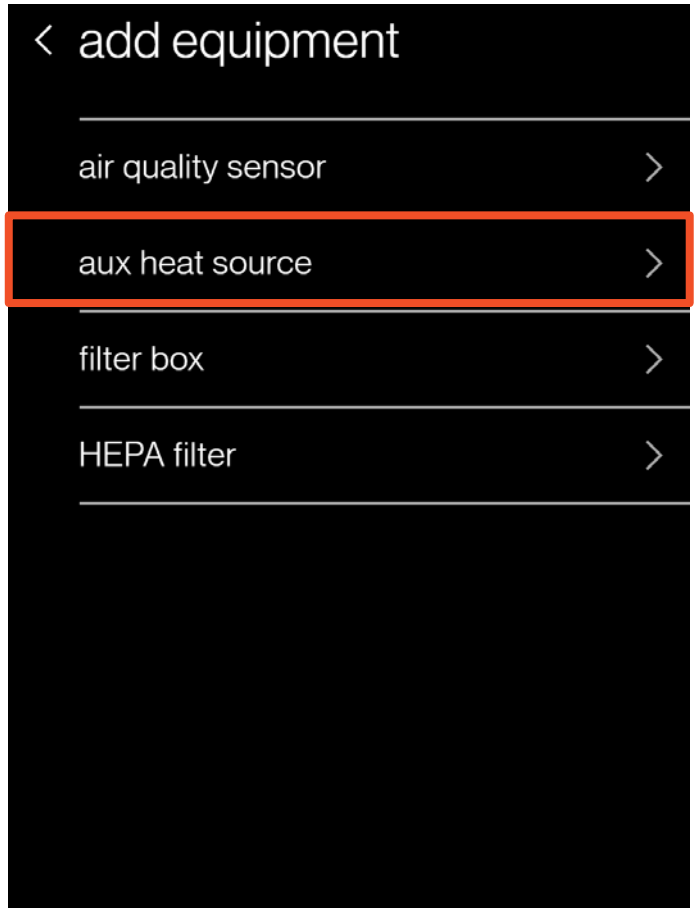
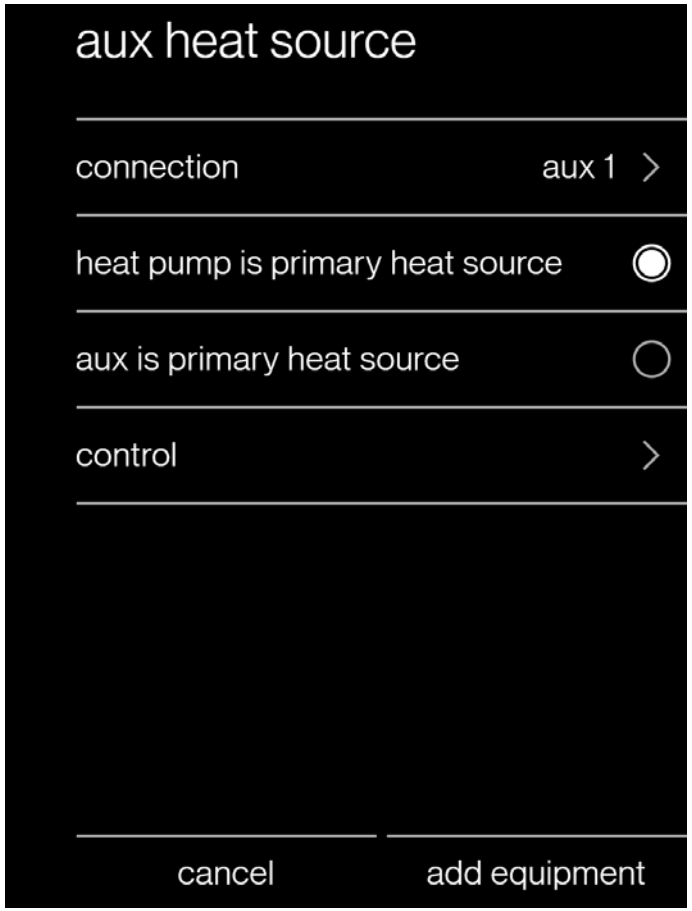
Add Equipment – Auxiliary Heat

- Selecting add equipment will allow you to configure an auxiliary heat source.







***Aux heat source is the only option for an AC only outdoor unit.**

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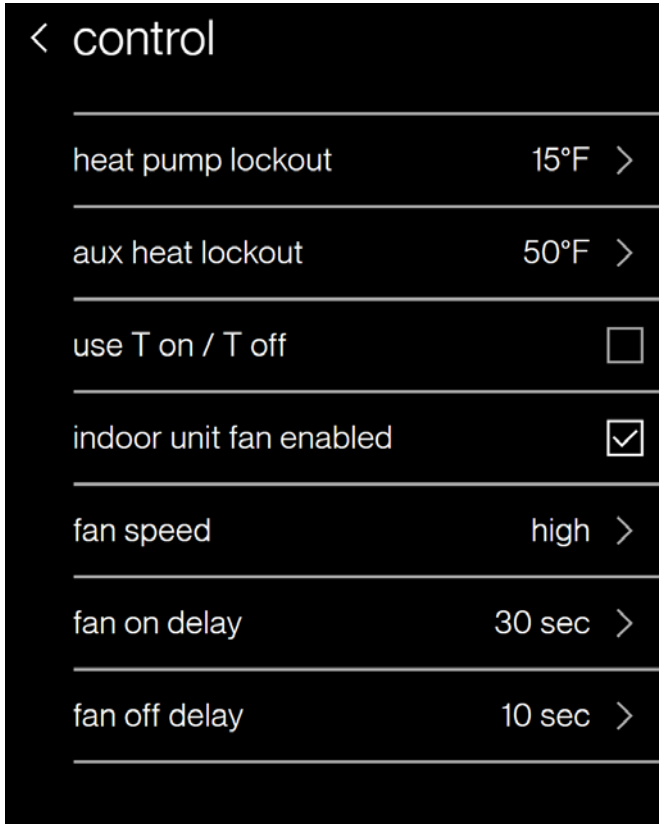
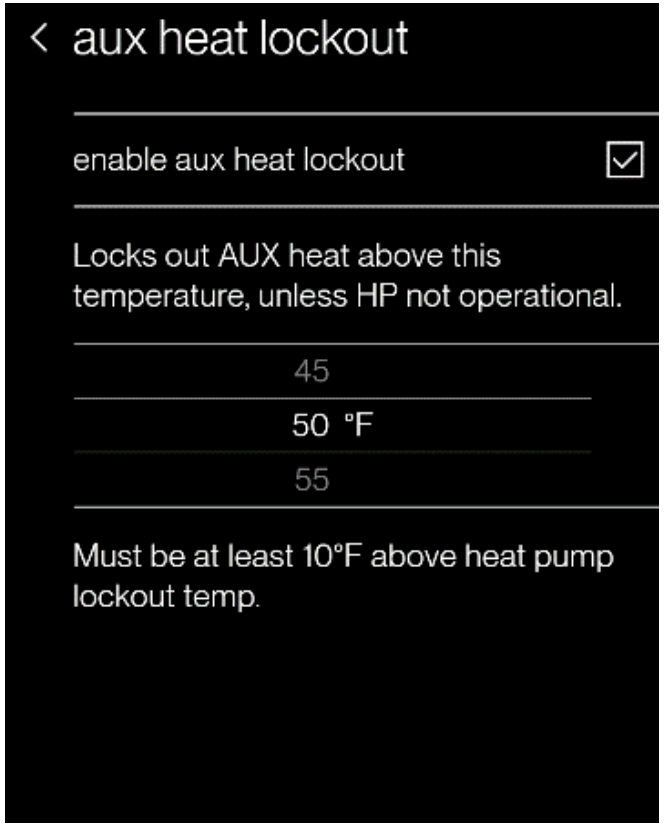
Aux Heat Setup on Daikin One+

Secondary Heat Settings

- The control section will allow you to adjust settings such as lockouts and secondary heat activation temperature.





***Emergency Heat mode will appear as a system mode when connected to heat pump units and can be used to directly turn on the aux heat source if enabled.**

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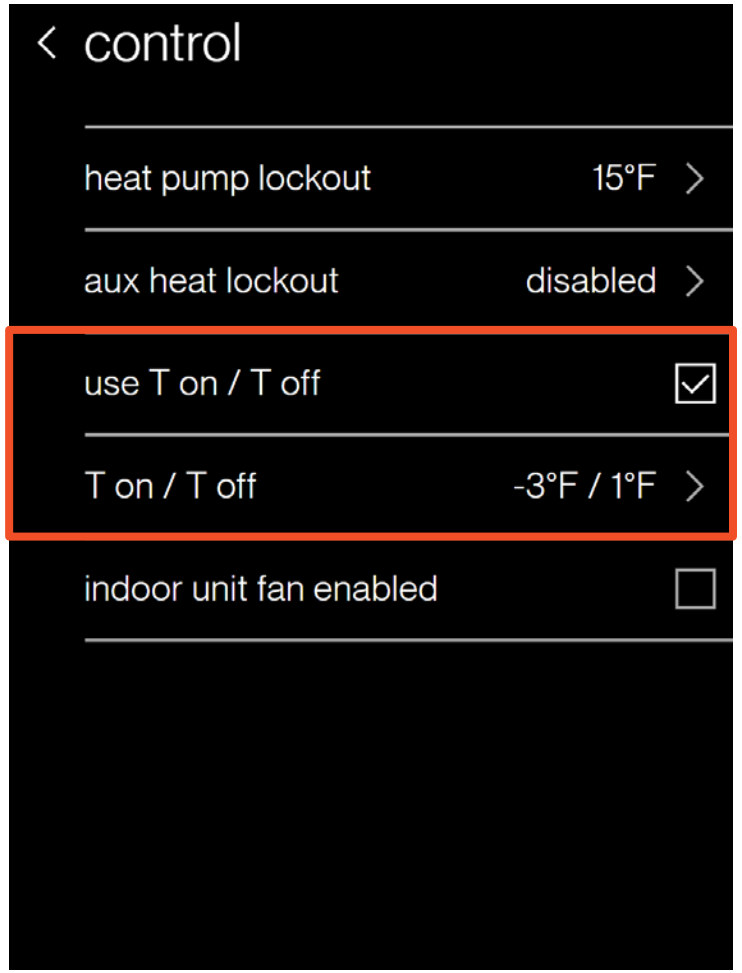
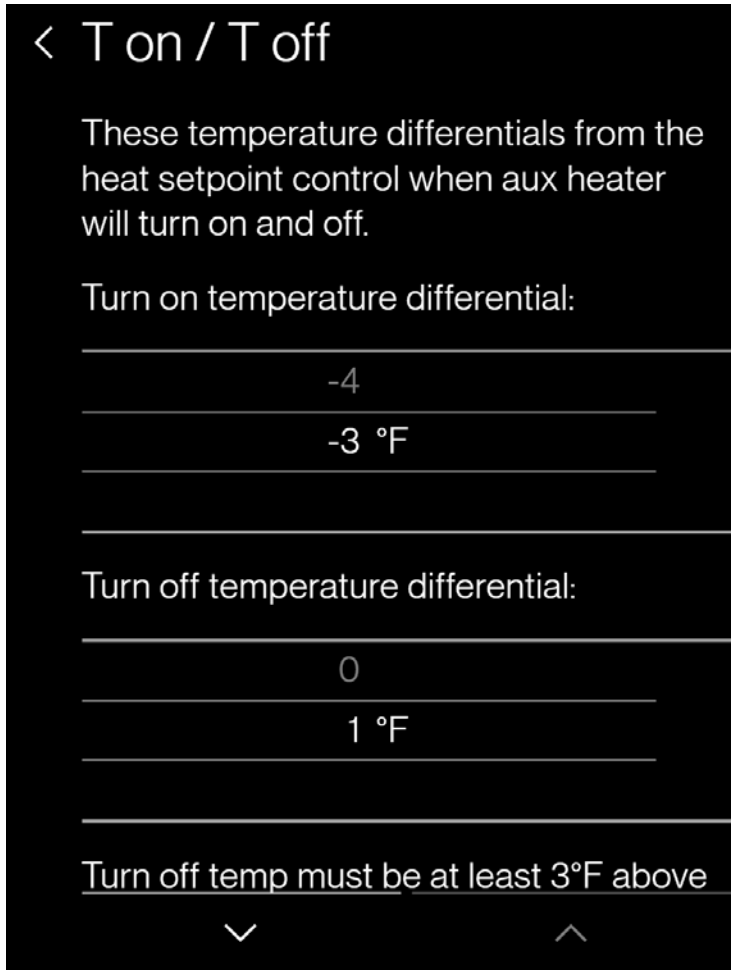
T on/T off Control

- T on and T off provide an alternative control method to have the main AC/heat pump control the aux heat source using its PI control algorithm.
- T on/T off is the only control option for AC- only outdoor units
  - If the indoor unit is a gas furnace, or is an air handler with a heater strip, these heat sources will be controlled around the heat setpoint by the demand-based algorithm.
  - The aux heat source will be controlled independently.





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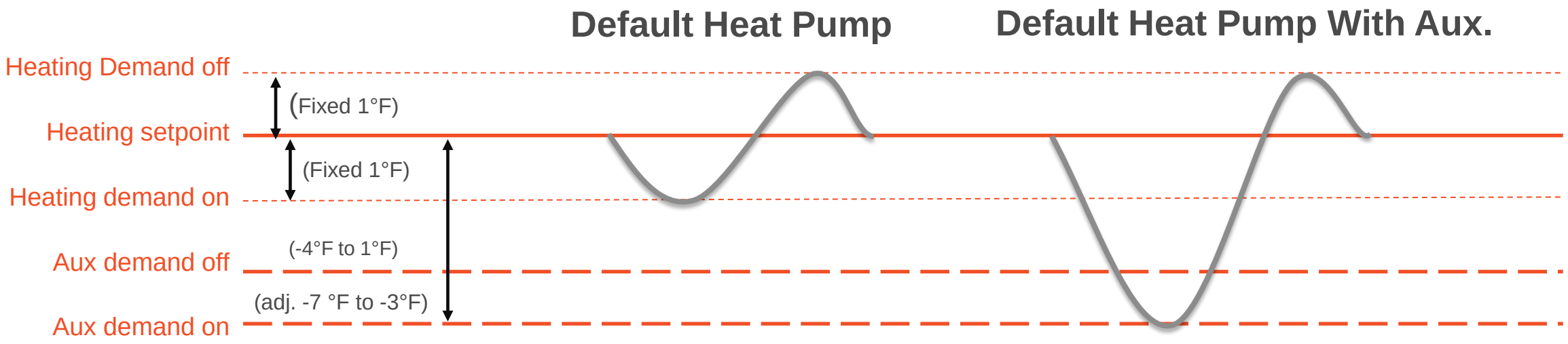
Aux Heat Control

- When heat pump is the primary heat source:
  - Heat pump lockout temperatures are adjustable from -20°F to 65°F in 5°F increments. (default 15°F)
  - Auxiliary heat lockout temperatures are adjustable from -10°F to 75°F in 5°F increments. (default 50°F)

  Auxiliary heat demand:
    - T on differential is adjustable from -7°F to -3°F in 1°F increments (default -3°F)
    - T off differential is adjustable from -4°F to 1°F in 1°F increments (default 1°F)



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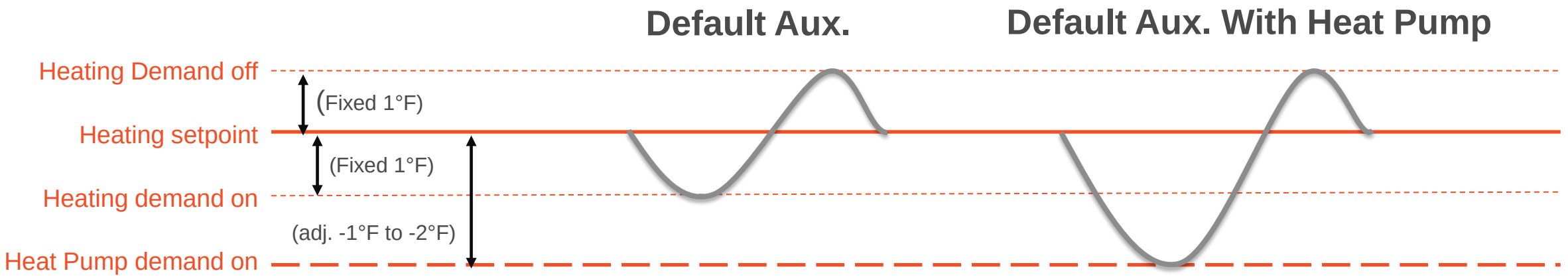
Aux Heat Control

- When auxiliary heat is the primary heat source:
  - Heat pump lockout temperatures are adjustable from -20°F to 65°F in 5°F increments. (default 15°F)
  - Setpoint differential can be set at -9°F, -7°F, -4°F, and -2°F (default -2°F)

  Heat pump demand:
    - T on differential can be set at -1°F or -2°F (default -1°F)
    - T off differential 1°F fixed



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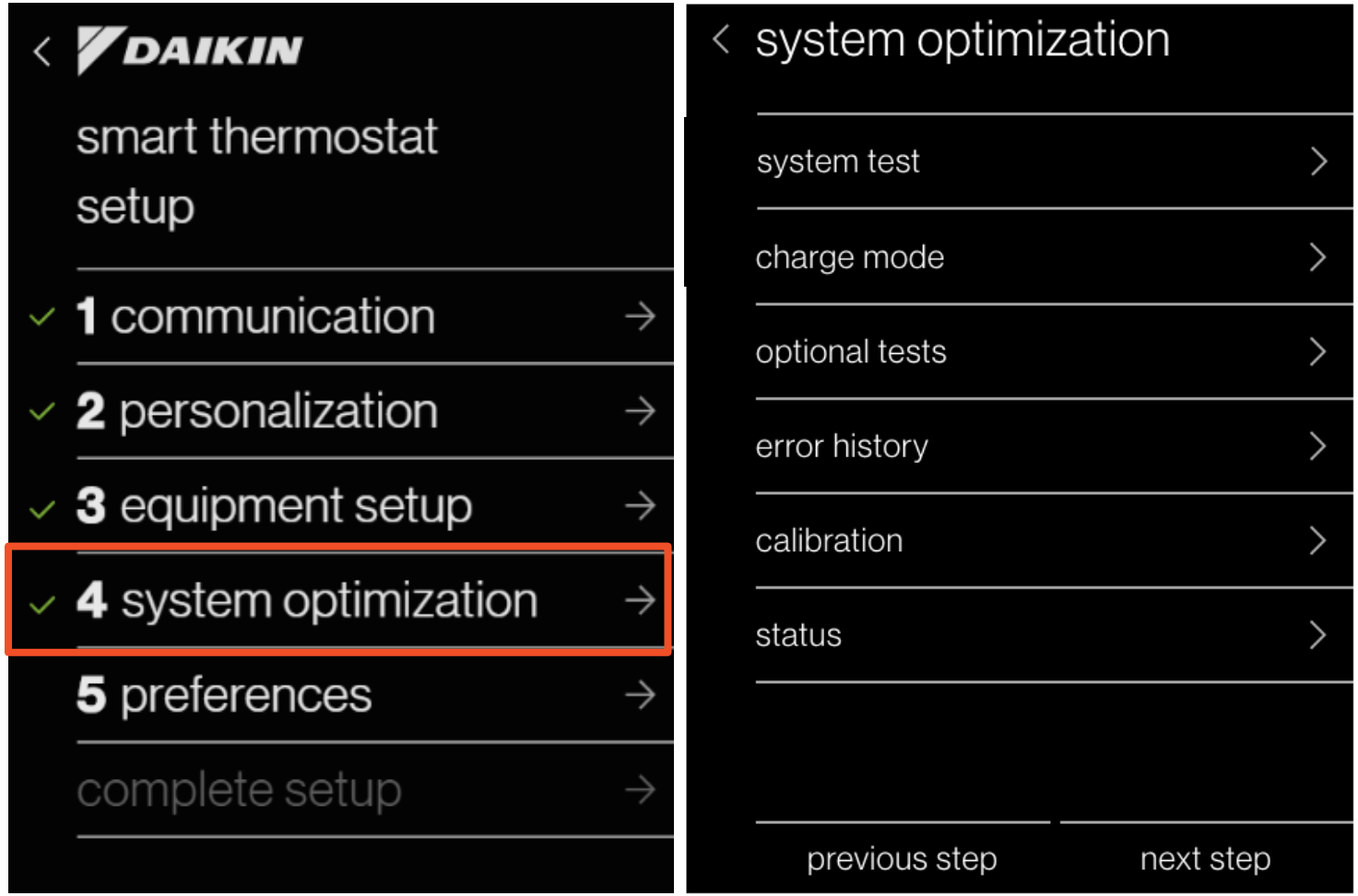
Step 4 – System Optimization

- System optimization displays:
  - System test.
    - **Inverters only.**
  - Charge mode.
    - **Inverters only.**
  - Optional test.
  - Error history.
    - Logs alerts with an error code.
      - **White = not critical**
      - **Yellow = critical**
  - Calibration. Thermostat must be in OFF mode.
    - Wait 30 minutes before calibration for the thermostat to equalize.
  - Status.



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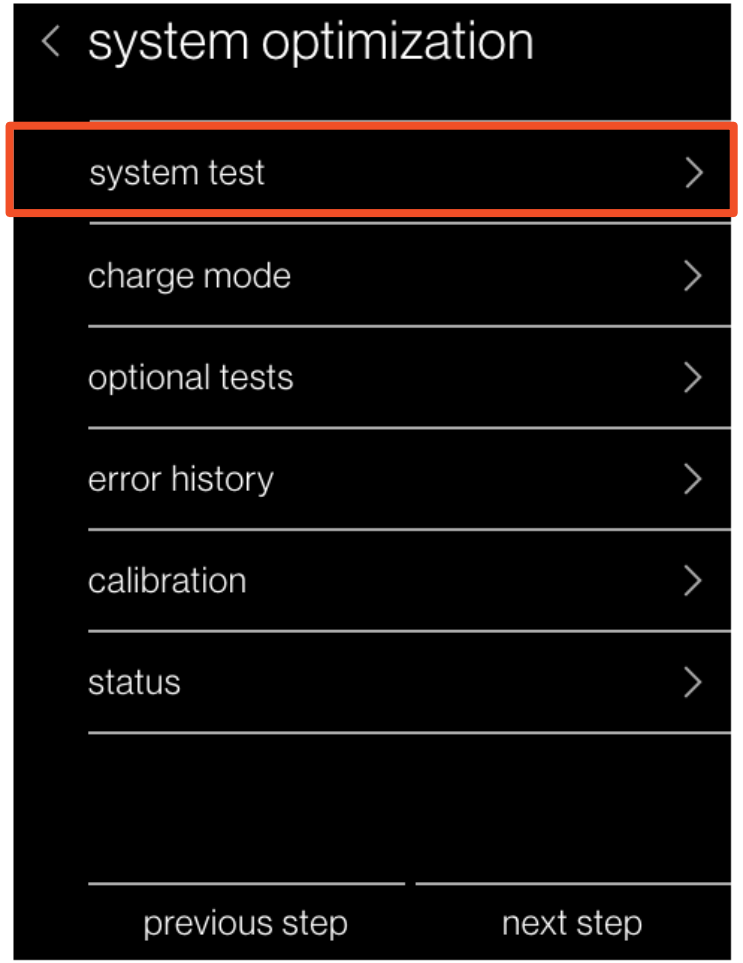
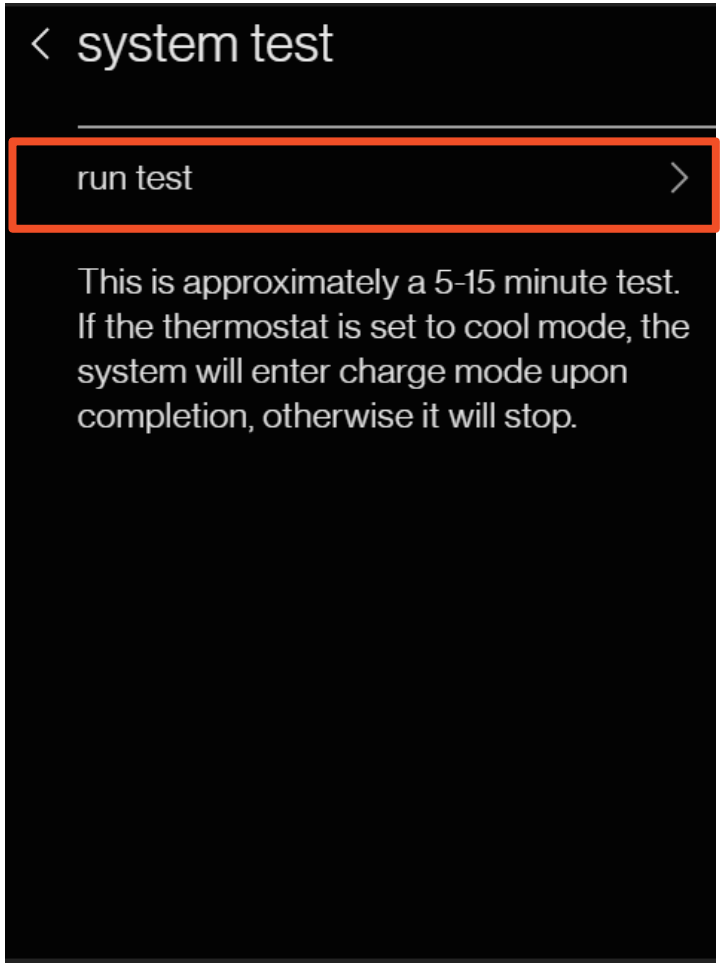
System Test

- The system test should be run for the **inverter units** before proceeding to complete set-up.
- To proceed through the set-up process, the system test needs to be completed without any errors.
- When the tests are completed, the run test screen is displayed.
  - System test is complete only when display code E11 notice clears from the seven segment LED display on the heat pump or air conditioner.





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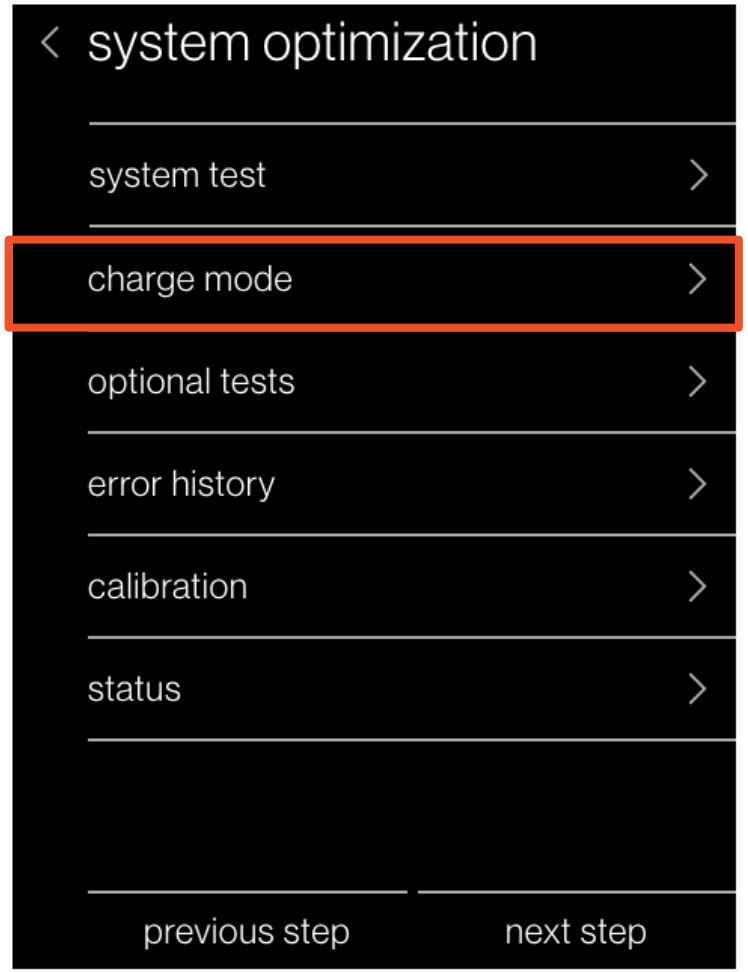
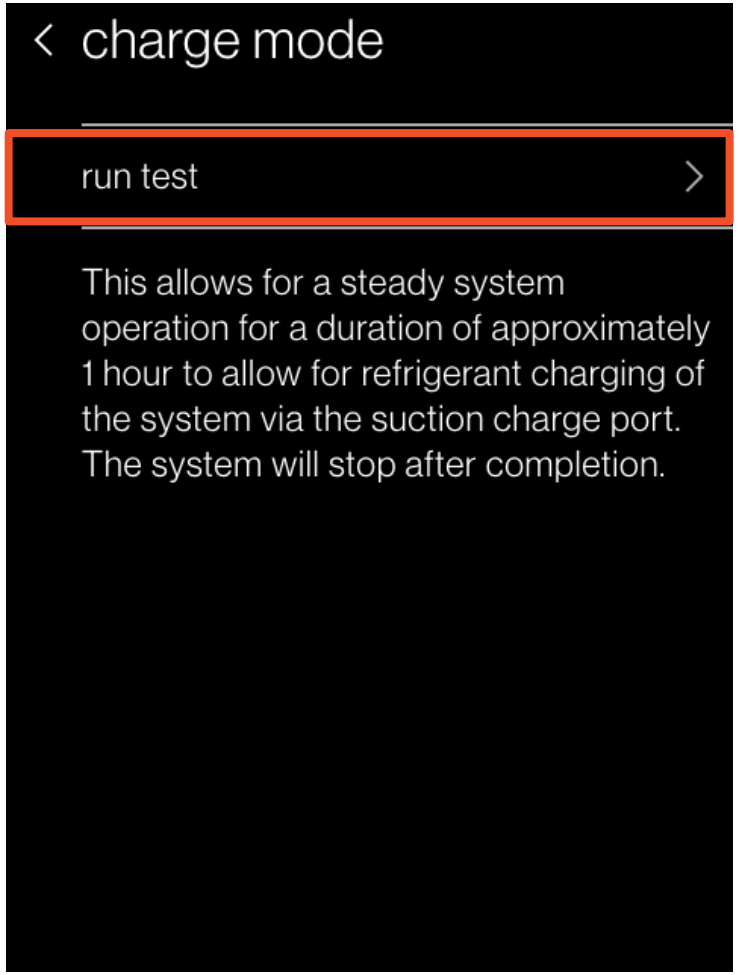
Charge Mode

- Selecting **charge mode** allows for a steady system operation for approximately **1 hour** to allow for refrigerant charging of the system via the suction charge port.
- The system will stop after completion.
- **Note:** For proper charging of a system, please see equipment installation manual.





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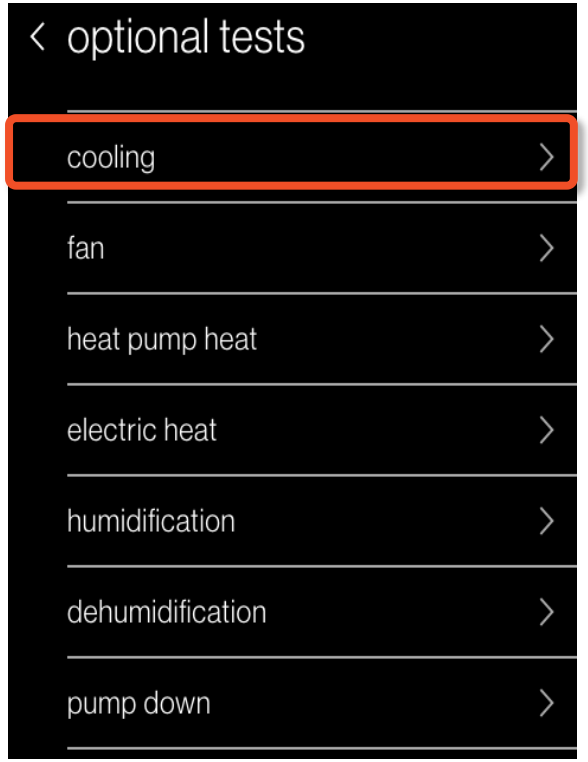
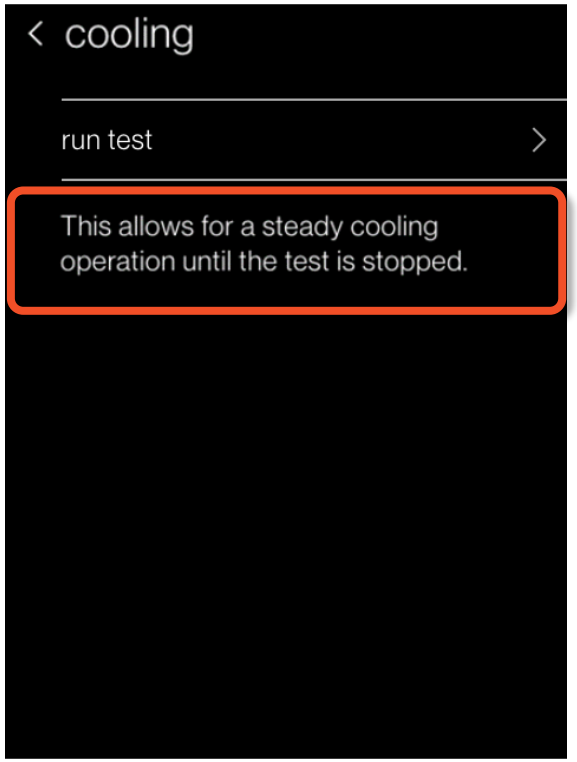
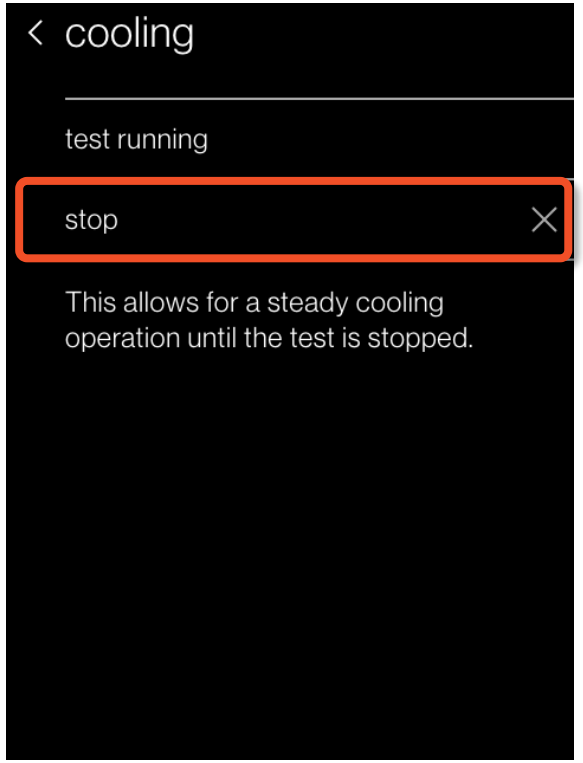
Optional Tests

- Each optional test has a short description.
- Optional tests display a stop test button while test is running.

Note: Thermostat will only display tests that the system can perform.







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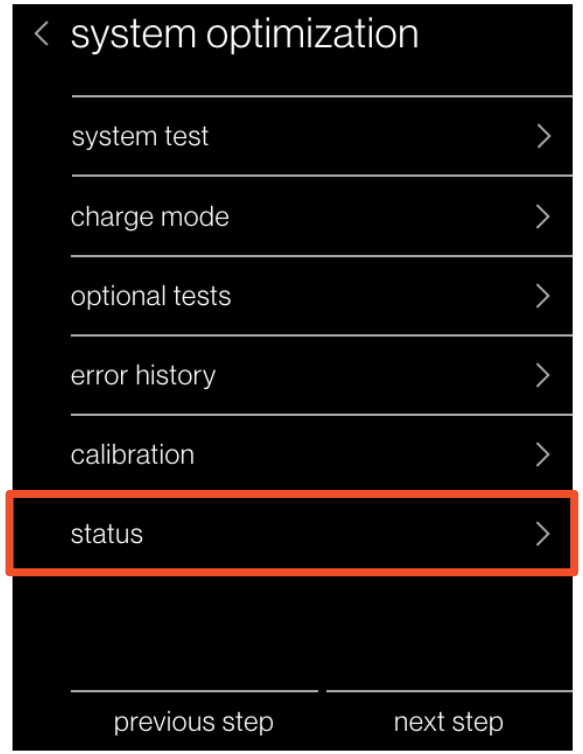
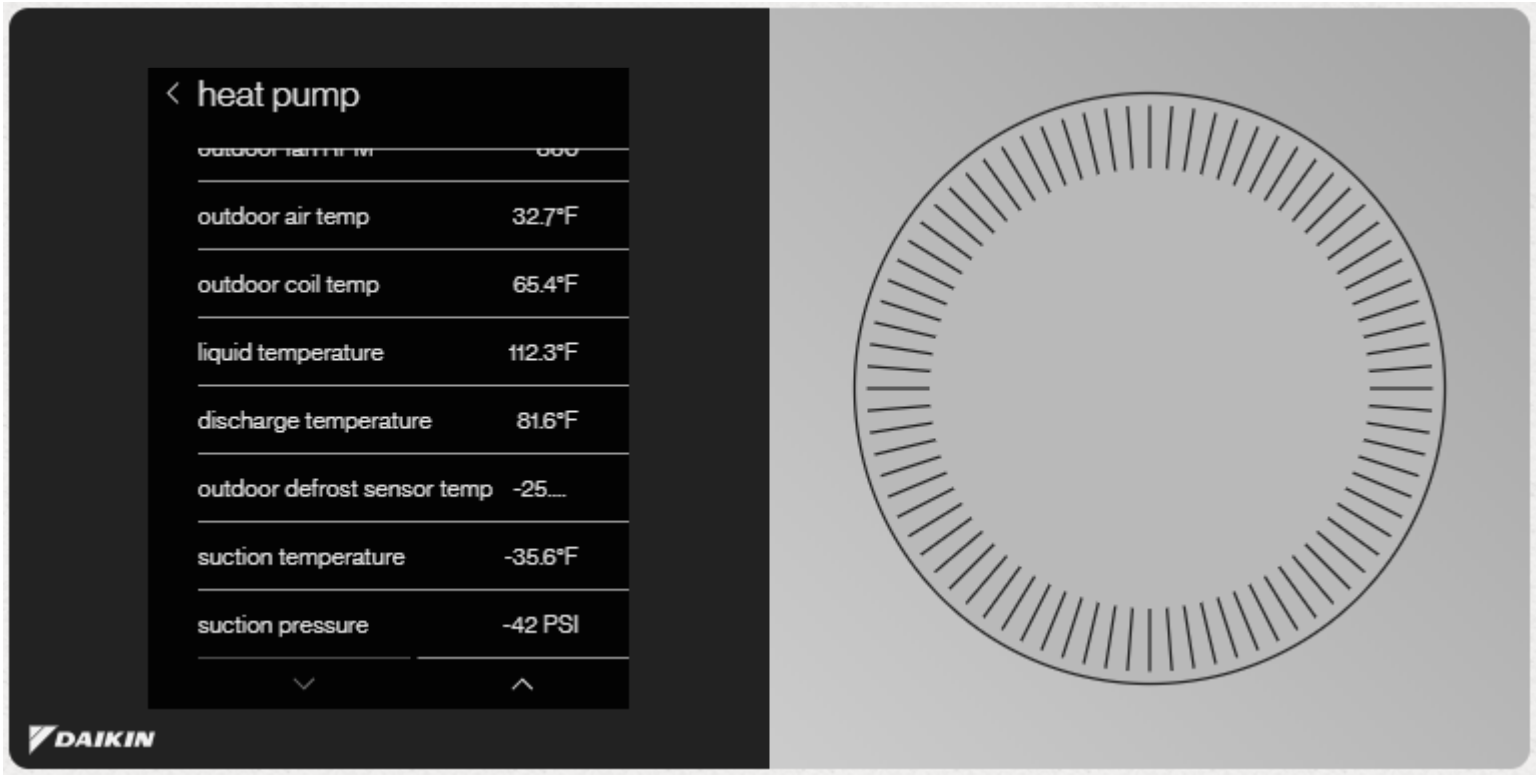
Full Set-up

Status

- The status menu displays data pertaining to the selected equipment.
- The scrollable list can be accessed any time by returning to the installer set-up screen.





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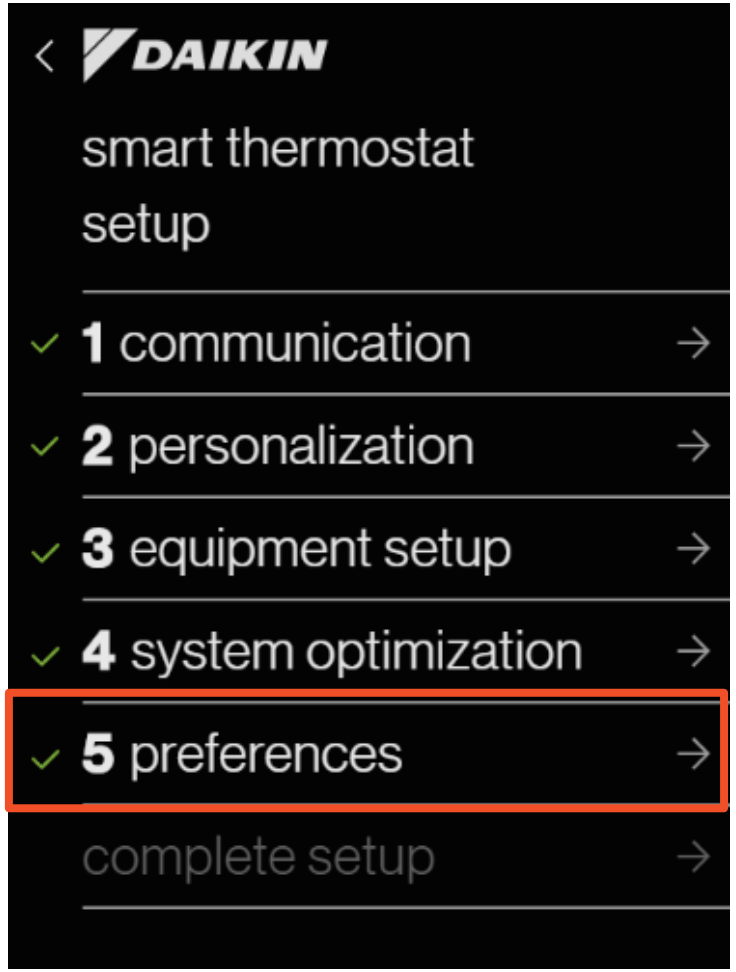
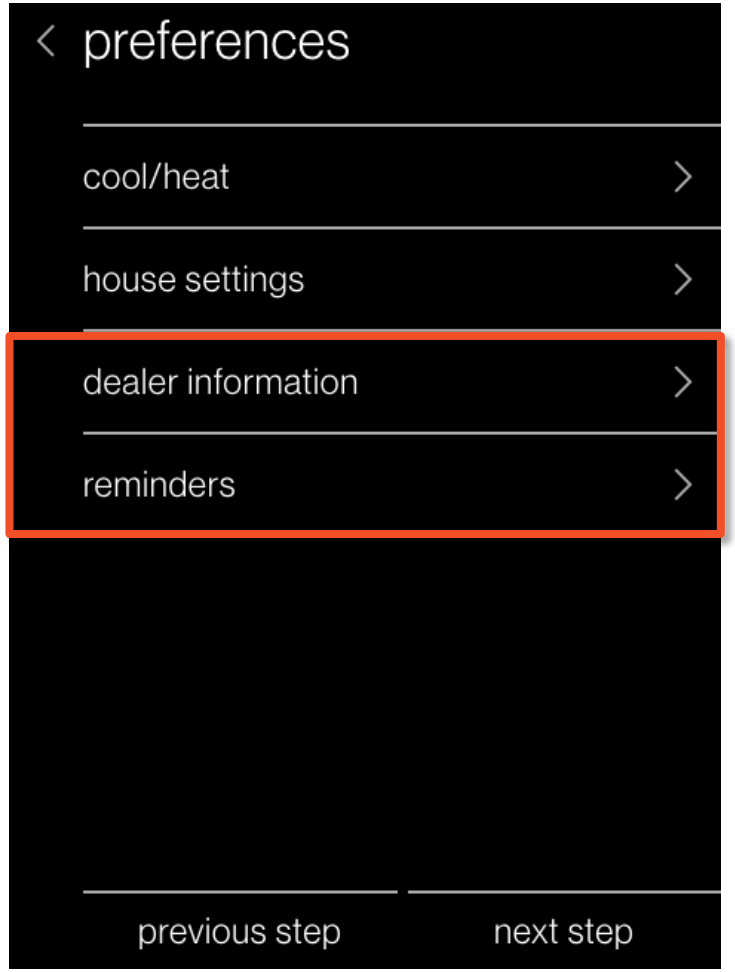
Step 5 - Preferences

- There are four preference settings to choose from in order to optimize your systems performance.
  - Cool/Heat
  - House settings
  - Dealer information
  - Reminders

Note: Changing preferences is not required, but reminders and dealer contact information should be inputted.





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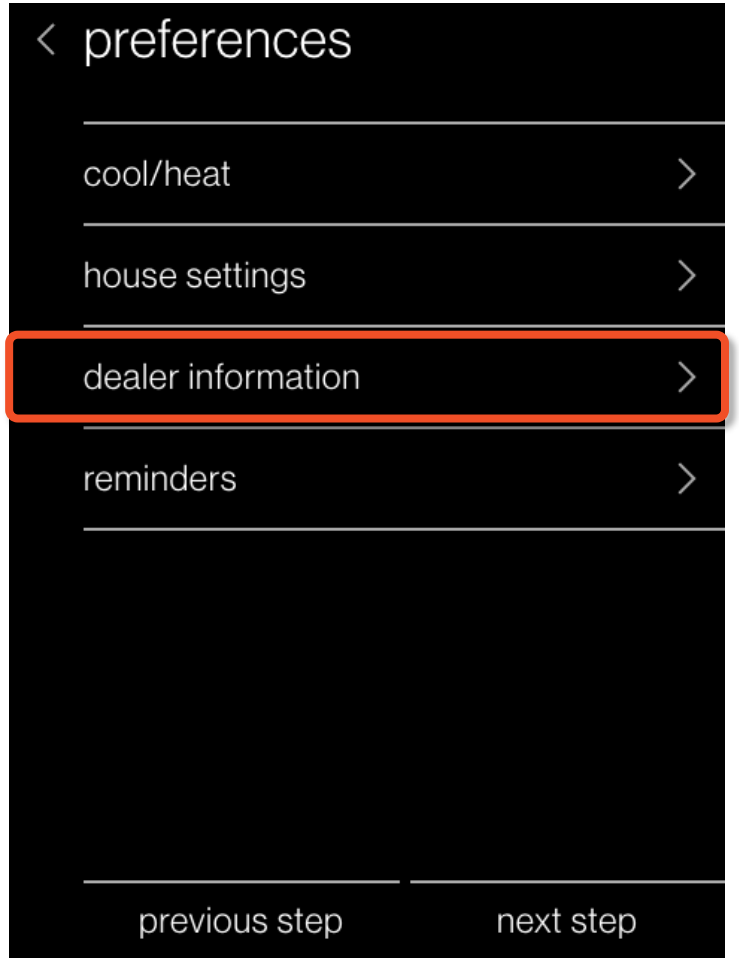
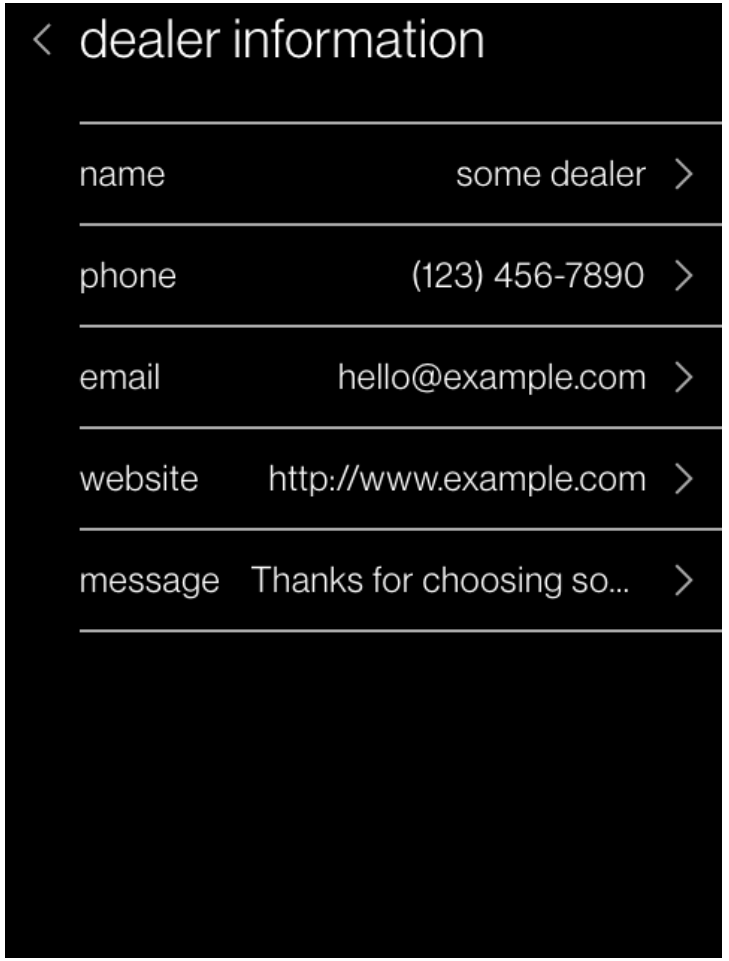
Dealer information

- Selecting allows you to enter and review the dealer's information.





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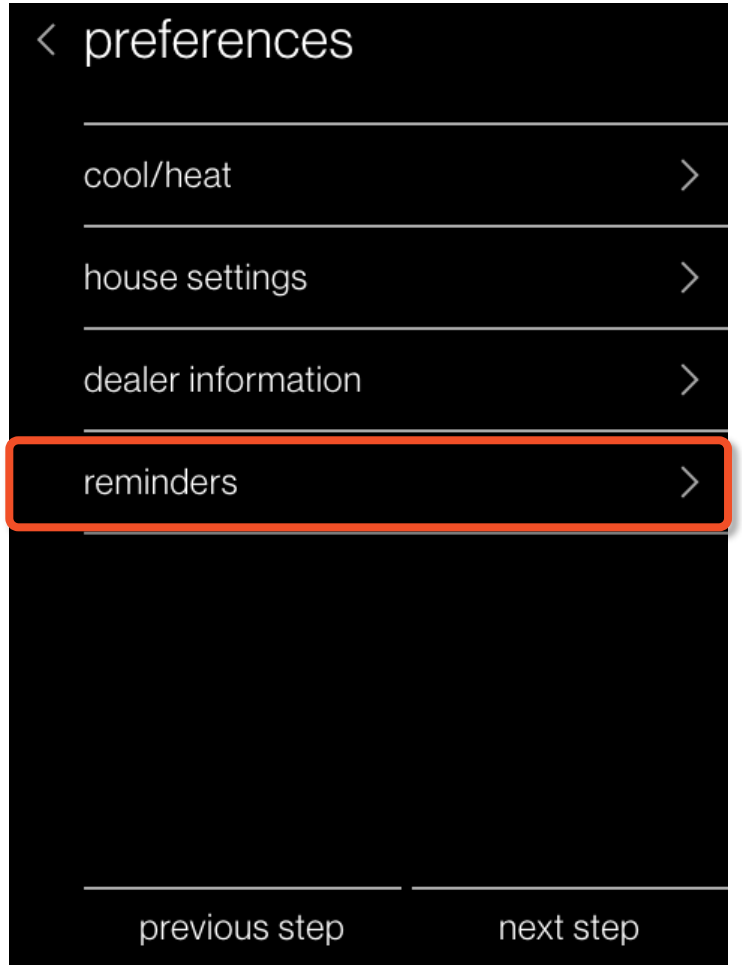
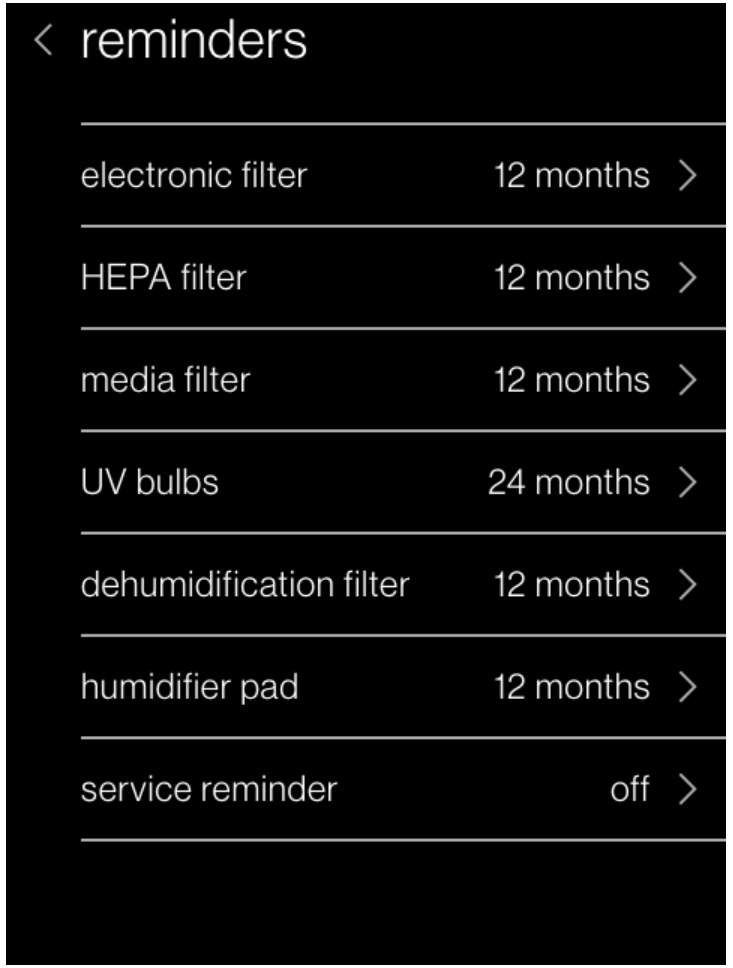
Reminders

- The number of reminders are based on the installed equipment with accessories.
- Once the equipment has been added, a **1 – 24** month service reminder can be selected depending on the installed equipment.

Note: The homeowner cannot edit service reminders.





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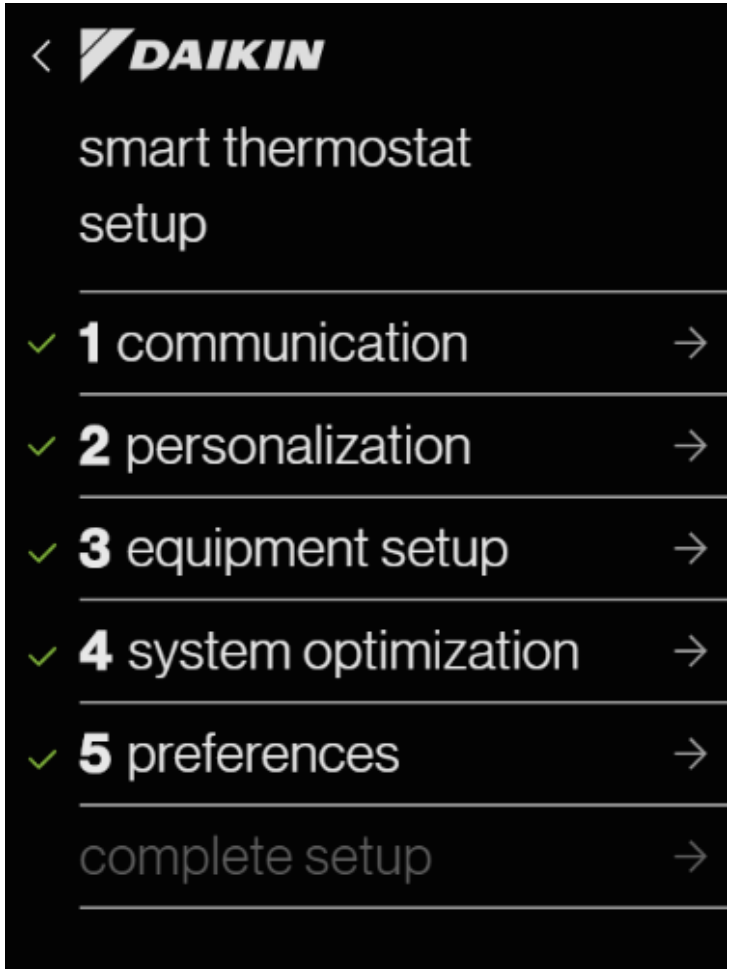
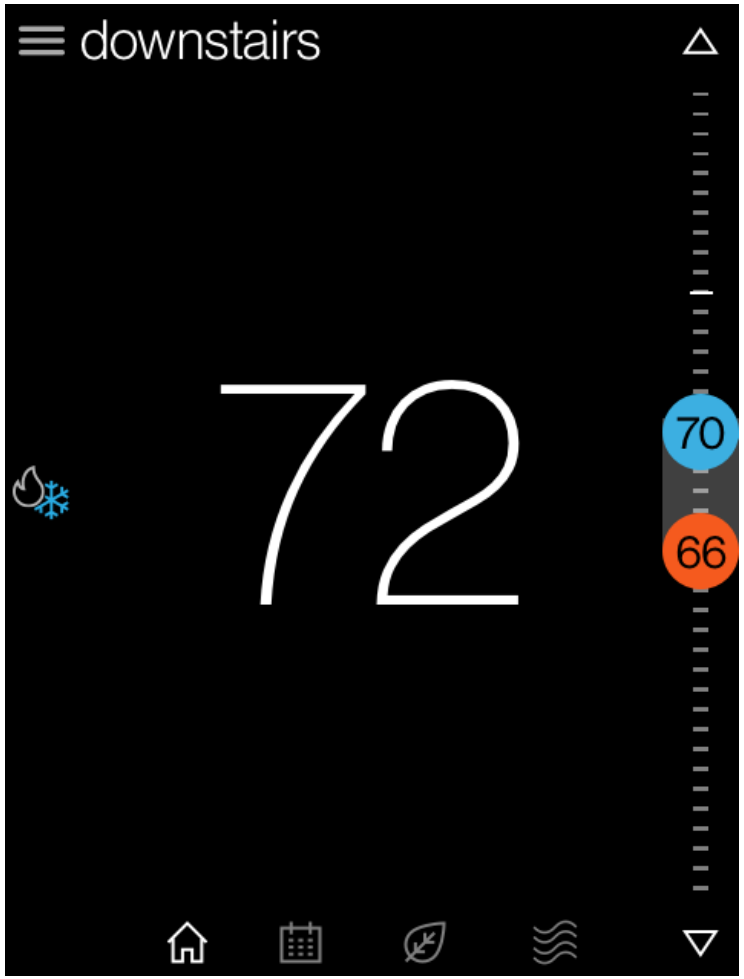
Full Set-up

Final step - Complete set-up

- Selecting complete set-up will conclude the full set-up of the thermostat and display normal mode for you to navigate and verify settings.

Reminder: All steps must be reviewed before completing full set-up.





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Agenda

- Daikin *One*+
- System Configurations
- Installing Daikin *One*+
- Commissioning Daikin *One*+
- Full Set-up
- **Dealer Navigation**
- Homeowner Navigation
- Mobile Apps

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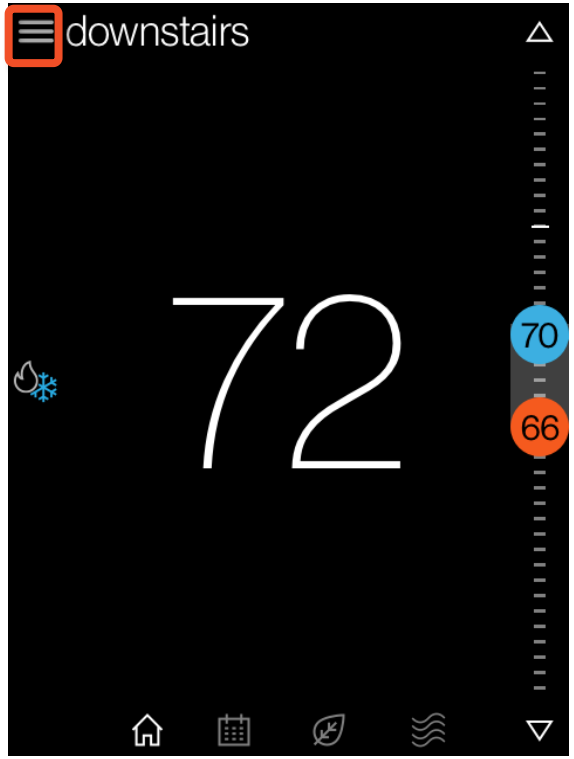
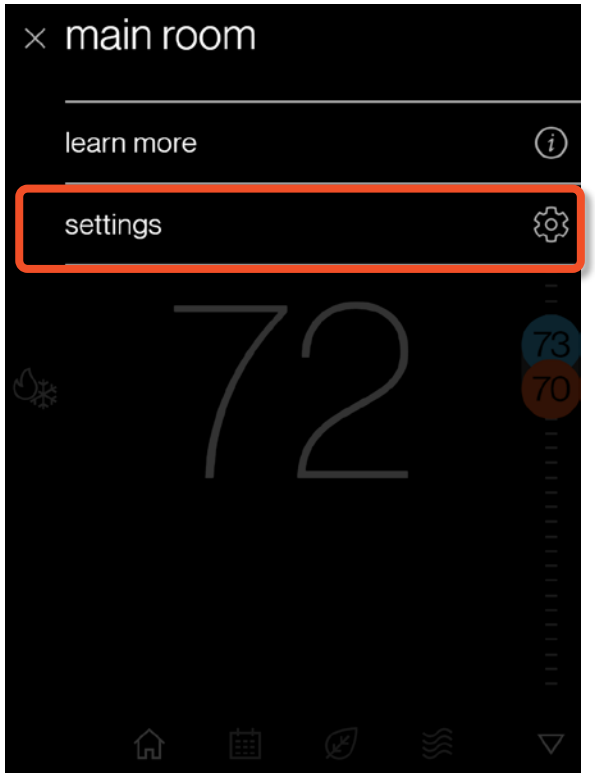
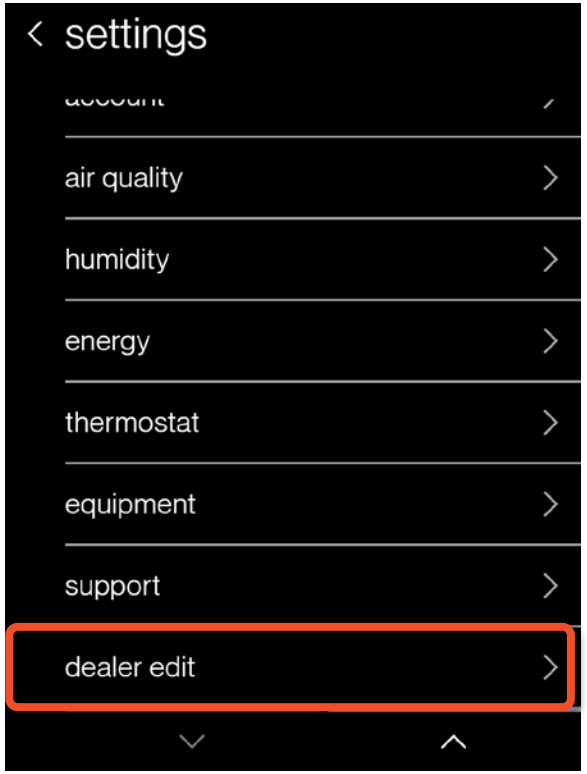
Dealer Navigation

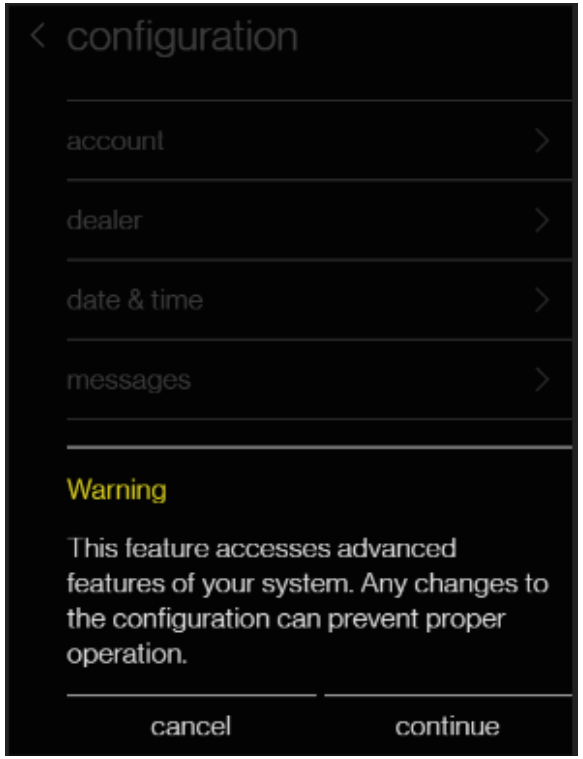
Dealer edit

- Navigating to **dealer edit** will allow you to access or revisit the installer set-up screen.
- Advanced adjustments to the Daikin *One*+ will be made here.









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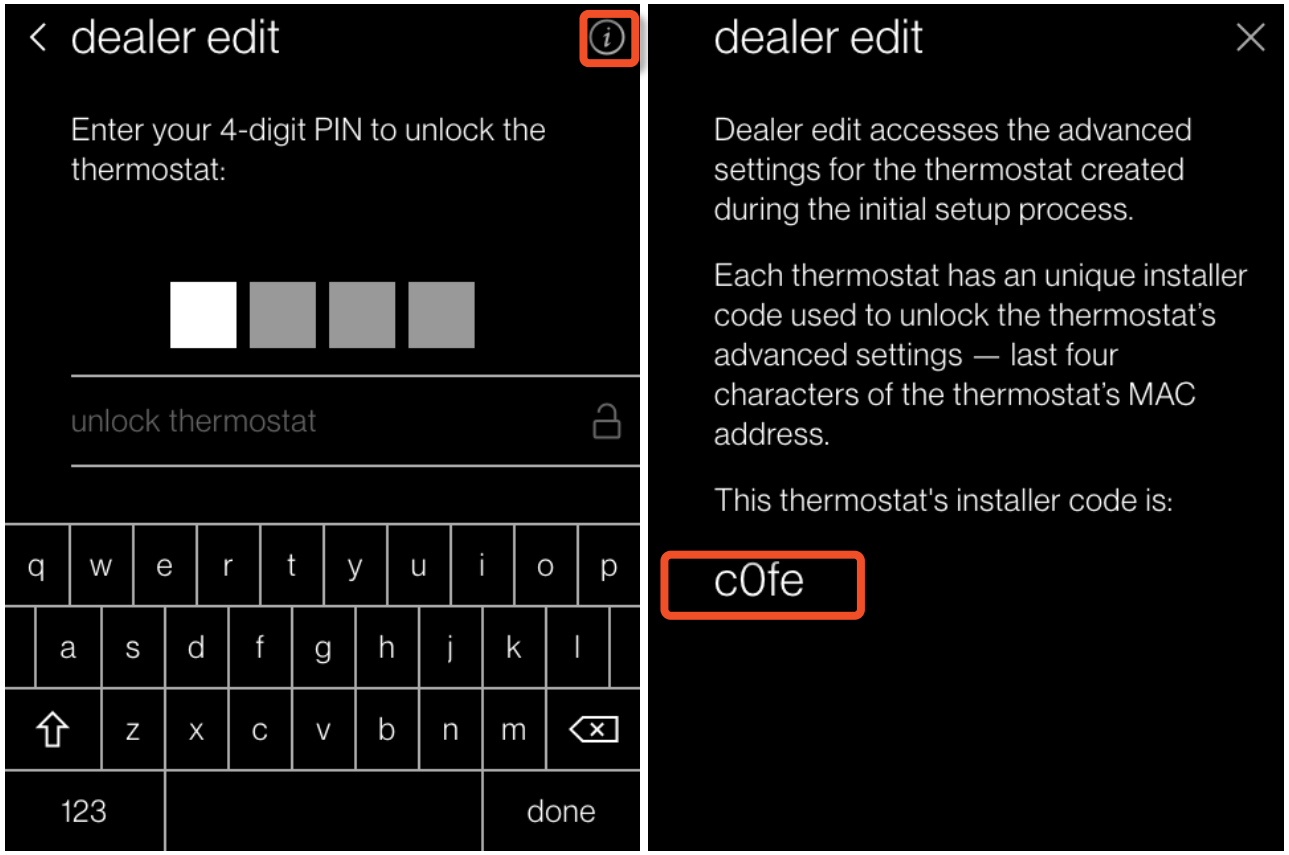
Dealer Navigation

- Acknowledging the prompt enables you to tap the learn more icon.
- The icon displays the installer code, giving you access to the installer set-up screens.



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Agenda

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Normal Mode

- Normal mode allows you to view messaging, temperature, and access settings to adjust parameters placed by the installer.
- Navigating is accomplished by tapping icons or turning the analog dial.
- **Note:** Analog turn dial is used to adjust **temperature only**. Pressing the dial returns to the home screen.

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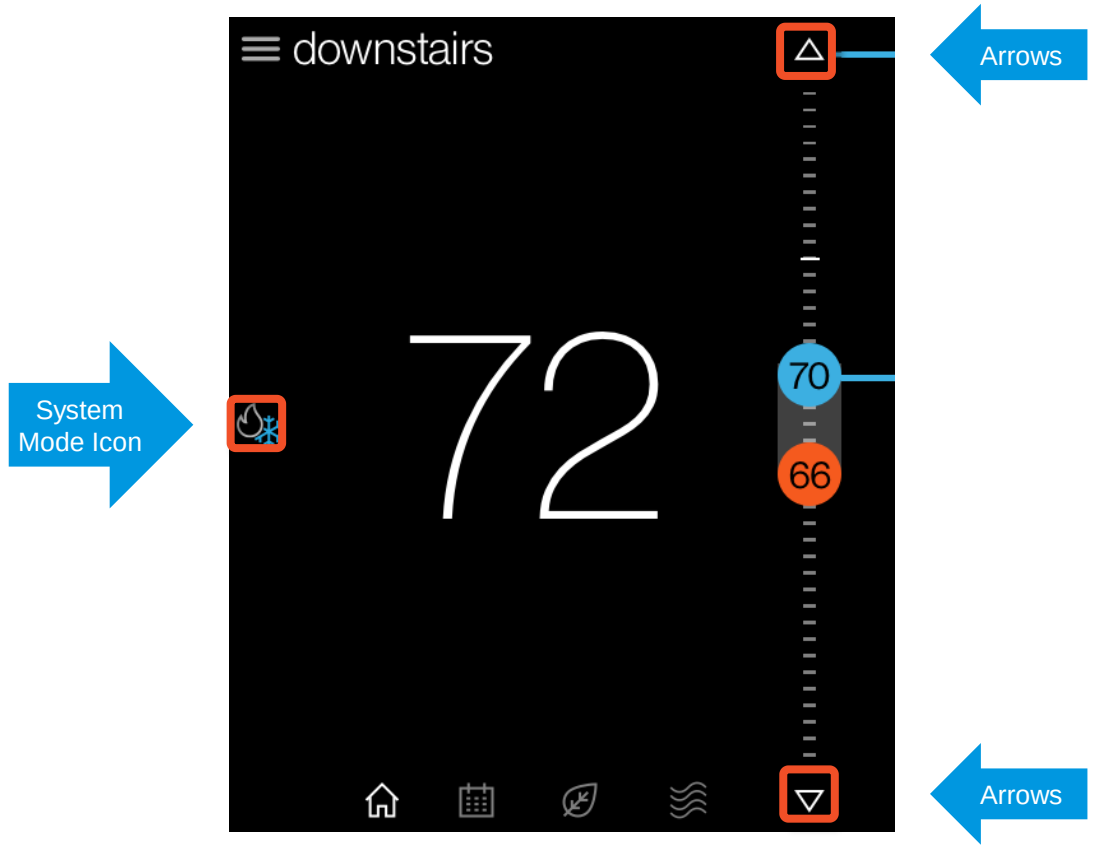
Adjust control

- Tapping the system mode icon allows you to select:
  - Auto. (cool & heat)
  - Cool.
  - Heat.
  - Off.
  - Emergency heat. (heat pump only)
- Tapping the arrow icons or rotating the dial will adjust setpoints that are displayed. You can also slide the setpoints to the desired temperature.



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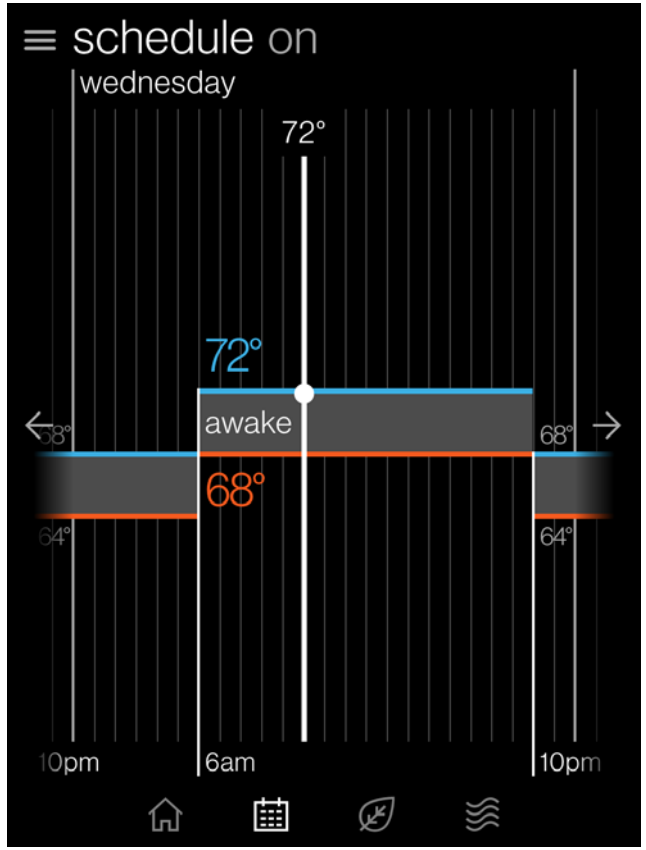
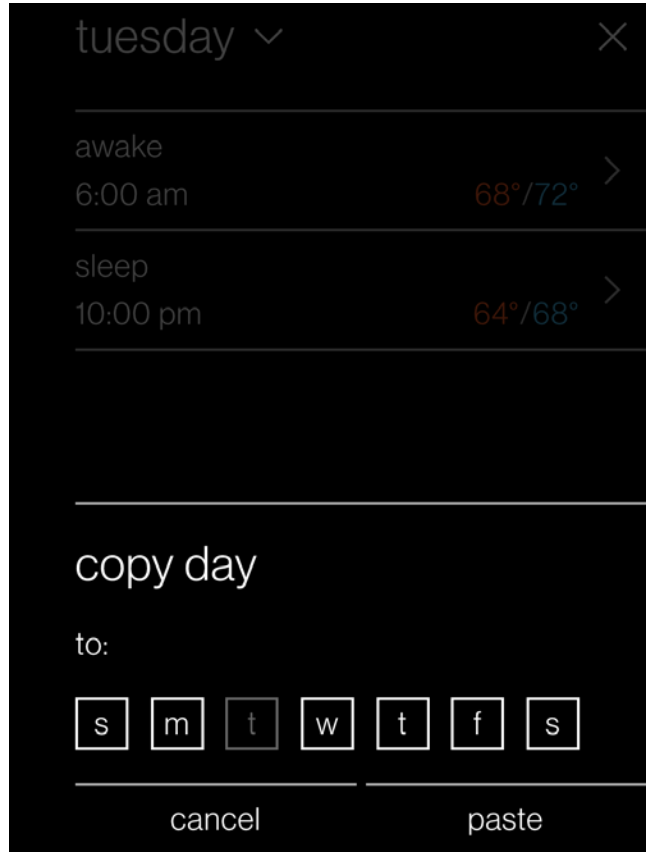
Schedule

- The schedule is presented as **7** days, displaying one day at a time, with **24** hours fitting on the screen.
- You can use the drop-down menu or swipe to enable schedule editing.
- Copy and paste is a feature that makes scheduling seamless.

Note: Unlike other screens, scheduling requires saving edits before exiting the mode.





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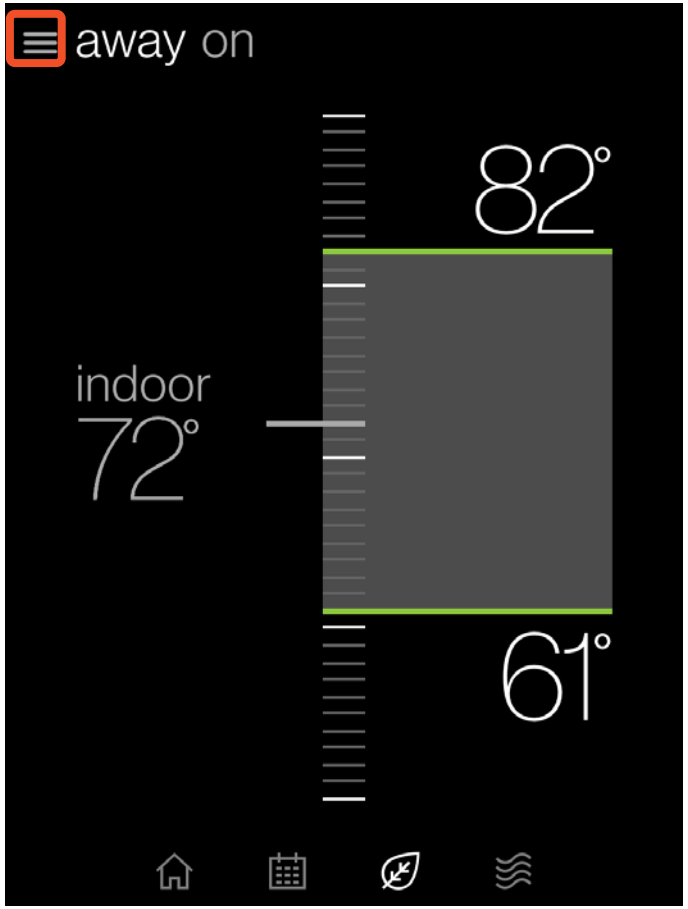
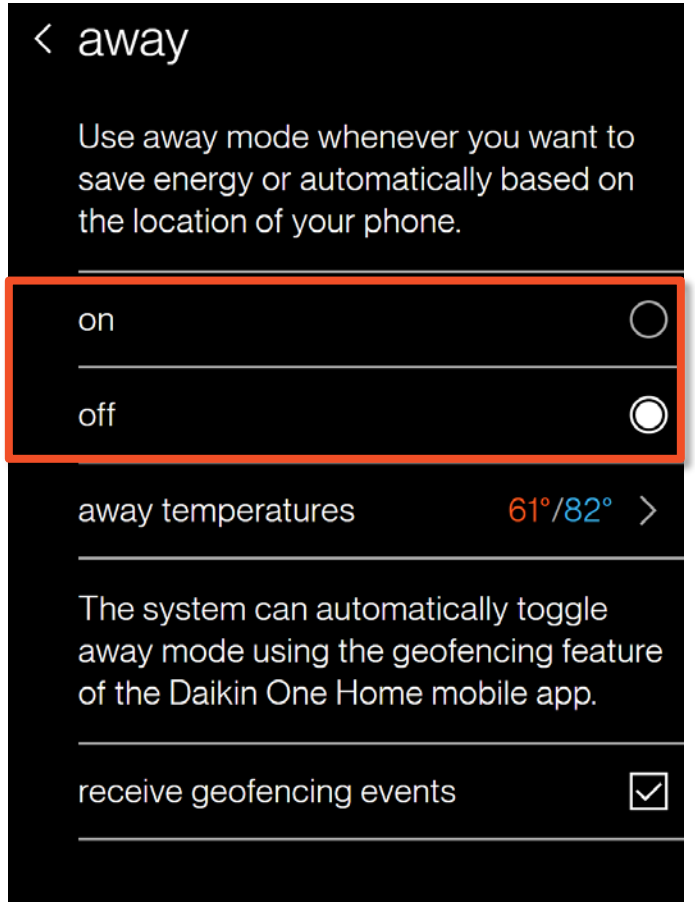
Homeowner Navigation

Away

- The away screen displays the current state (on/off) and the away cooling/heating setpoints used when away is on.
  - on/off is selected from drop down menu.
- User can change the values of the setpoints by dragging the numbers or the comfort range up and down.
- With the mobile application, enabling geo-fencing will automatically switch to away mode when **outside** the radius.
  - Settings must be configured in the mobile application.





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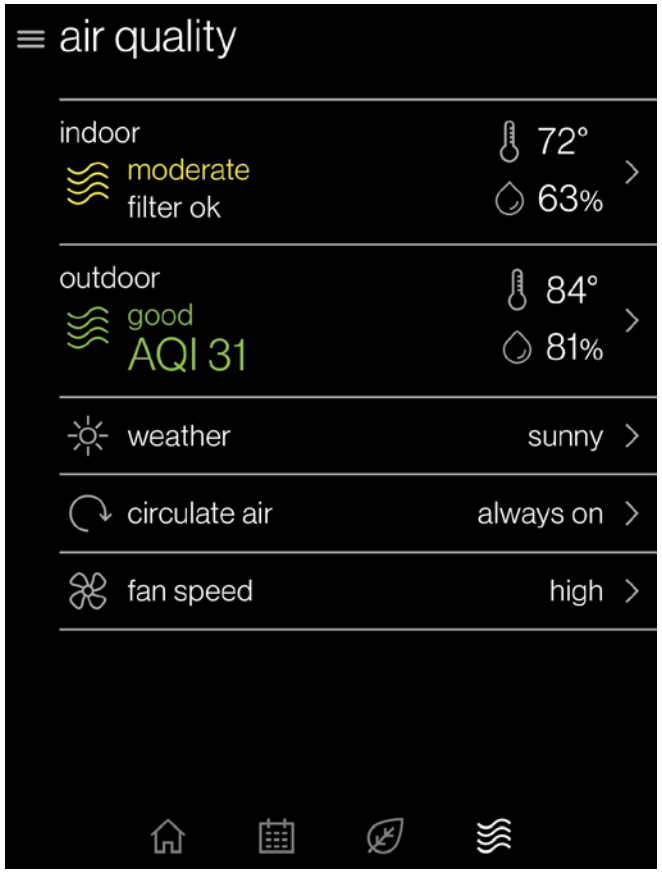
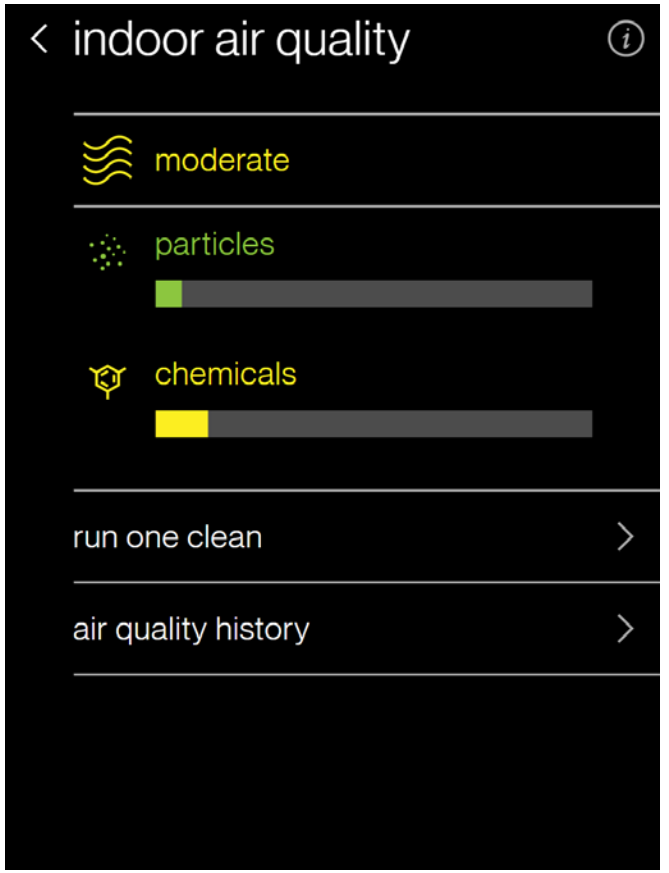
Air quality

- The air quality screen displays **indoor air** quality levels, **outdoor air** quality, and **weather** (when connected to the internet and paired with the app.)
- If air quality sensors **are not** installed, indoor air quality is based on filter life cycle and humidity values.
- Selecting indoor air quality from the air quality screen allows you to access **one clean and air quality history**.
  - **One clean** runs the fan, at high speed for three hours, to circulate and filter the indoor air.





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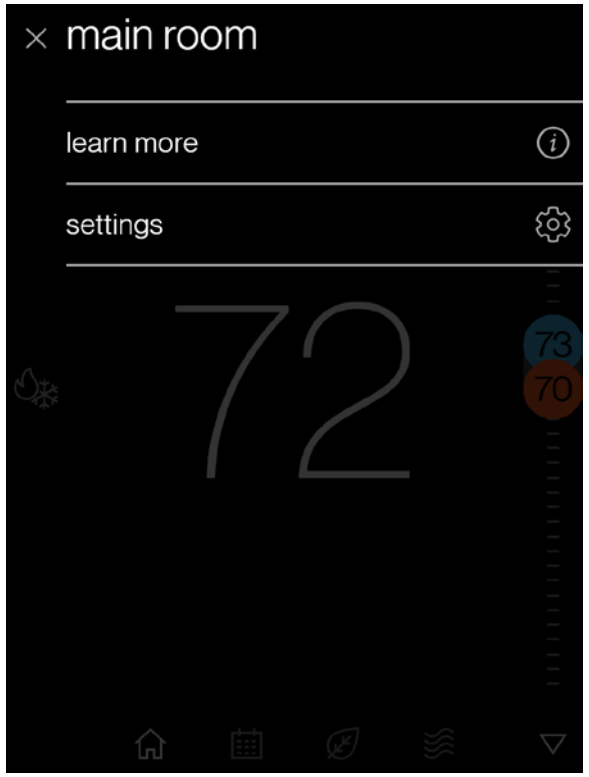
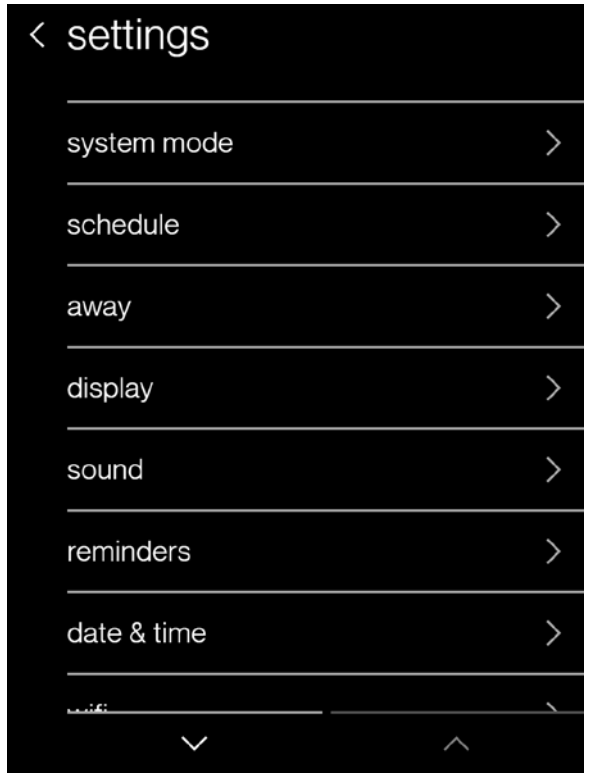
Settings

- Settings gives you access to additional supporting features:
  - Display.
    - Adjust and enable visual features.
  - Comfort.
    - Set target humidity.
  - Configuration.
    - App. account setup
    - Dealer information
    - Date & Time
    - Enable messages/view alerts
    - System components
    - Home Wi-Fi





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Agenda

Daikin *One*+

System Configurations

Installing Daikin *One*+

Commissioning Daikin *One*+

Full Set-up

Dealer Navigation

Homeowner Navigation

Mobile Apps

DAIKIN AIR INTELLIGENCE

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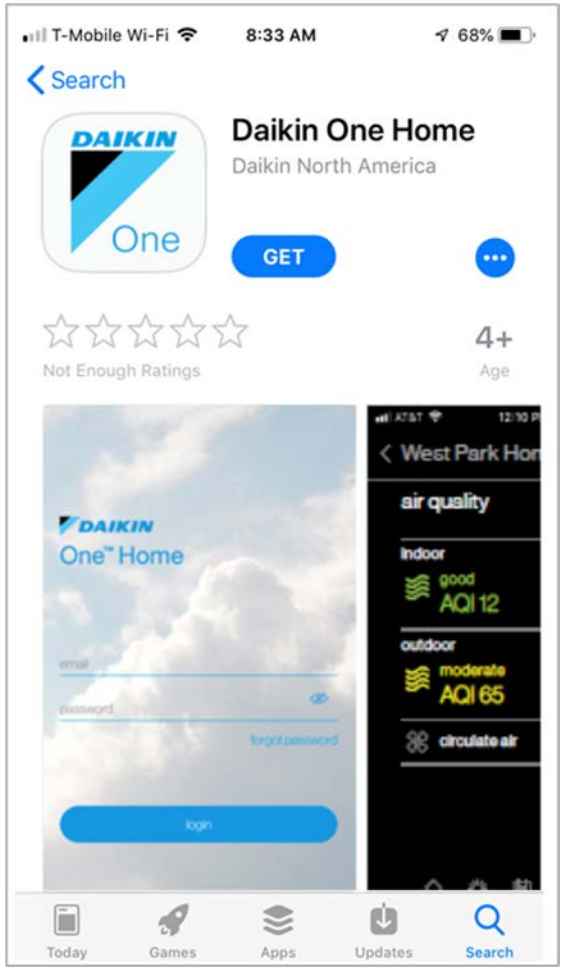
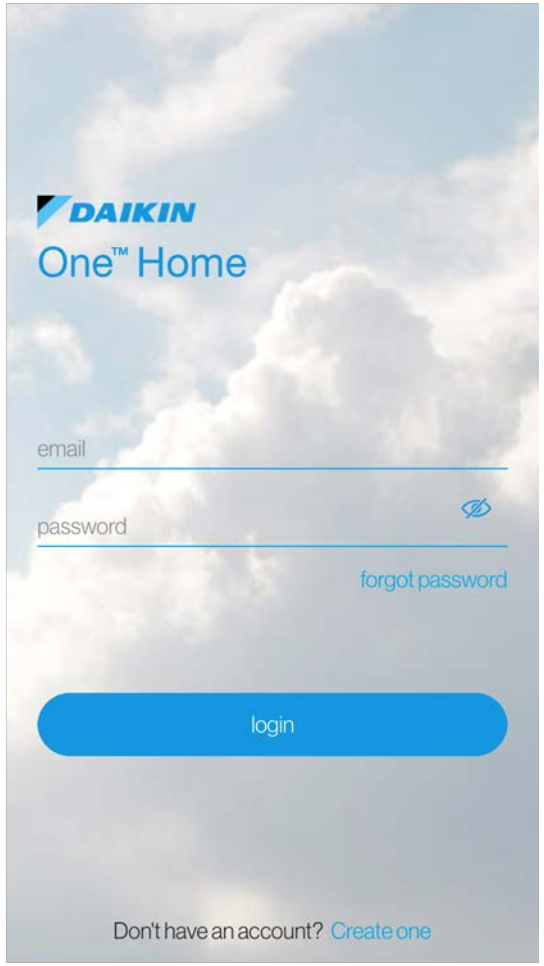
Account set-up

- Setting up an account is a four-step process.
  1. Downloading the application from your IOS or Android application store.
     - Creating the account.
  2. Confirming your account.
  3. Adding the thermostats' location.
  4. Connecting the app to the thermostat.

Note: A **mobile device**, the **Daikin *One+*** connected to **Wi-Fi** that is wired to a **communicating system** and a valid **email address** is needed to create a mobile account.





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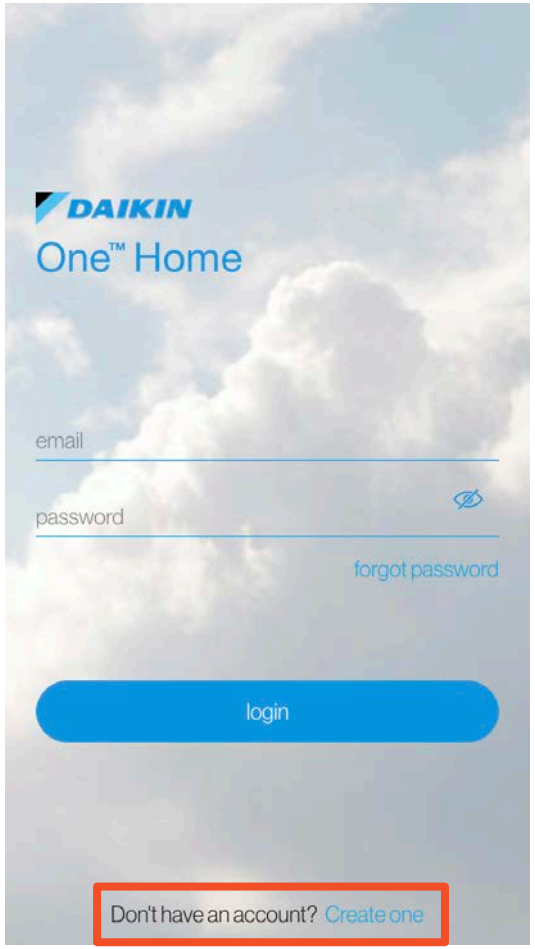
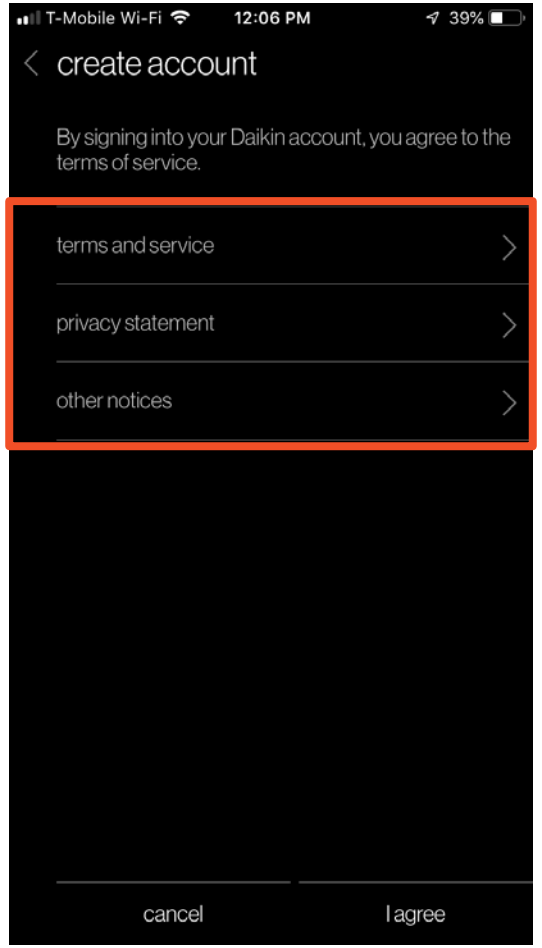
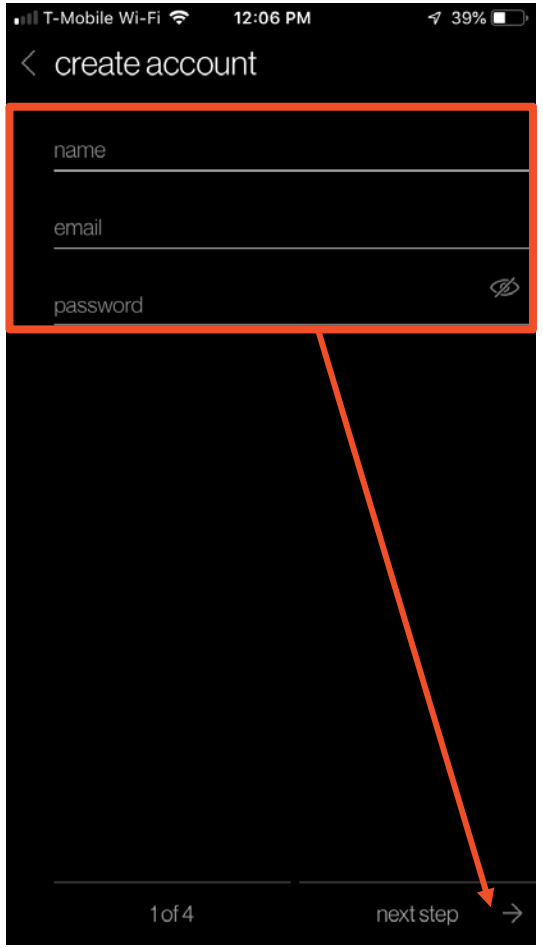
Step 1 - Create the account

- Tapping create one at the bottom right corner of the login screen will start the process.
- Before agreeing, read the terms and service, privacy statement, and other notices.
- Fill in your name, valid email address, and password.







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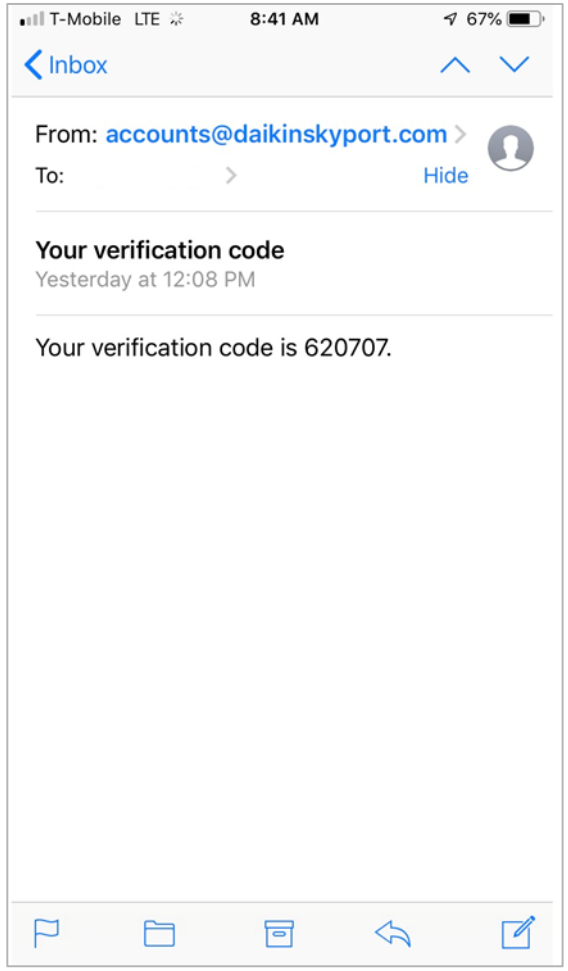
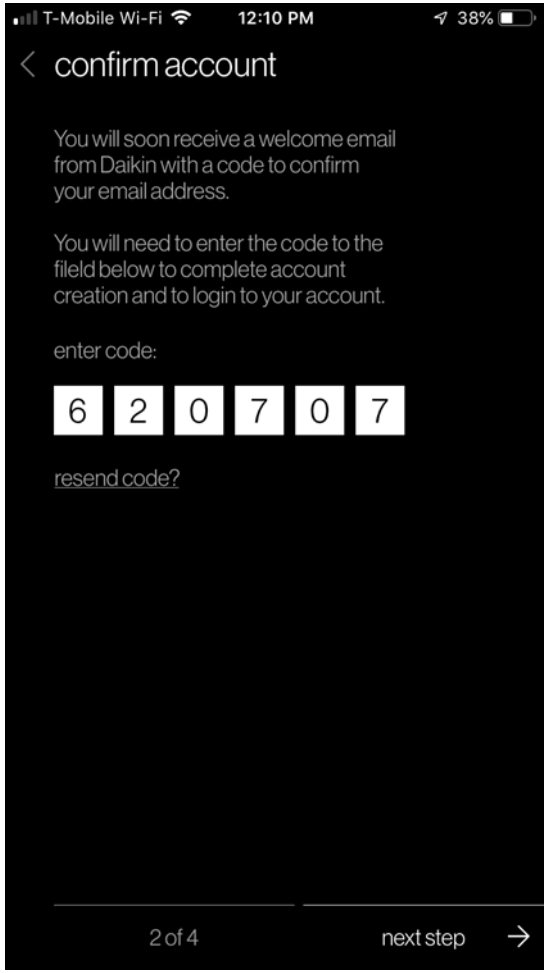
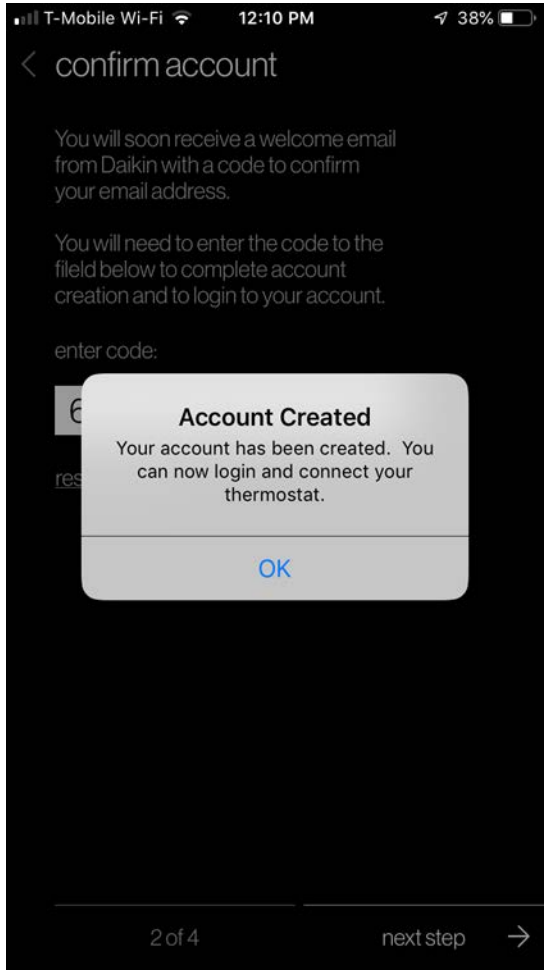
Step 2 - Confirming the account

- You will be prompted to access the email address you provided when creating the account.
- A welcome email will appear in your inbox providing a six-digit code.
- Entering the six-digit code on your phone app. will allow you to continue.







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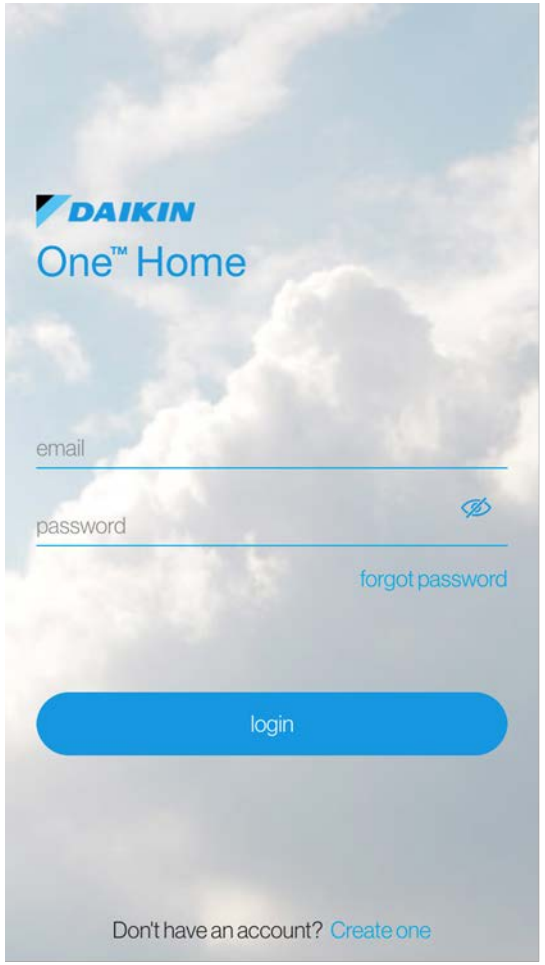
Step 3 - Adding the thermostats location

- Enter the email and password associated to your mobile account and tap the login button.
  - If you have forgotten your password, tap the forgot password link to recover information via email.
- Type the address of where the thermostat is located to gather accurate information.



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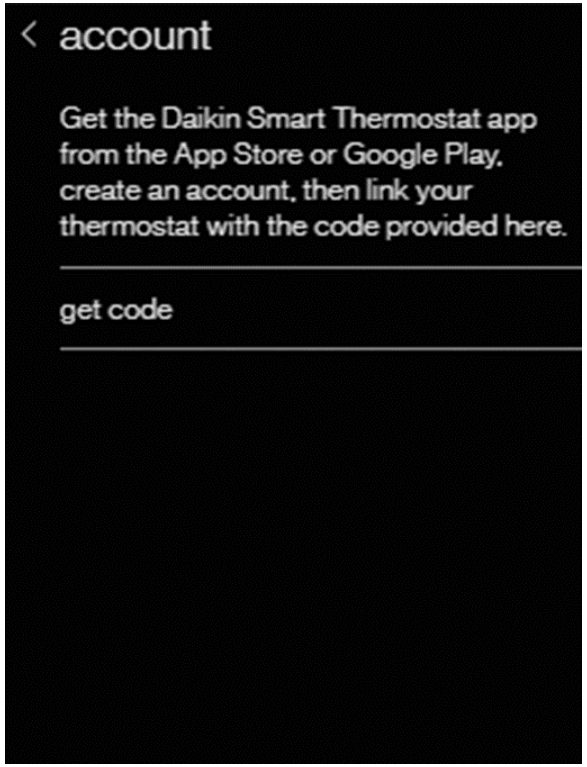
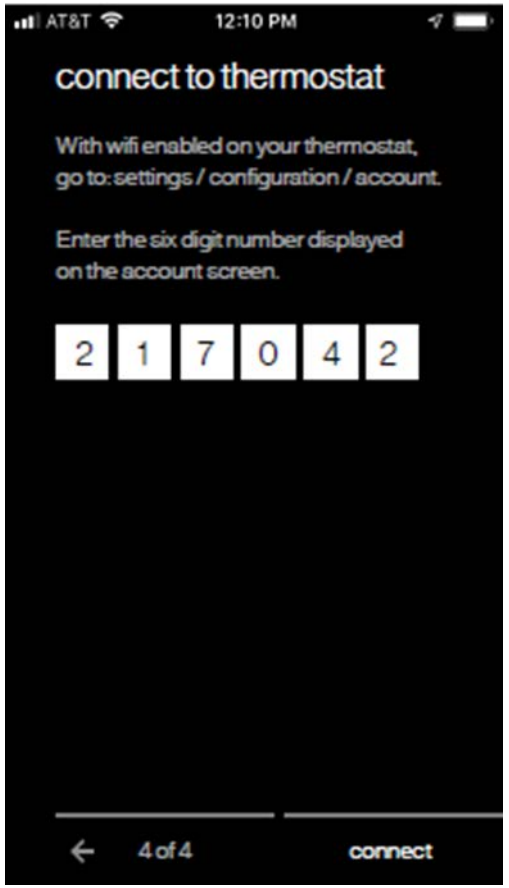
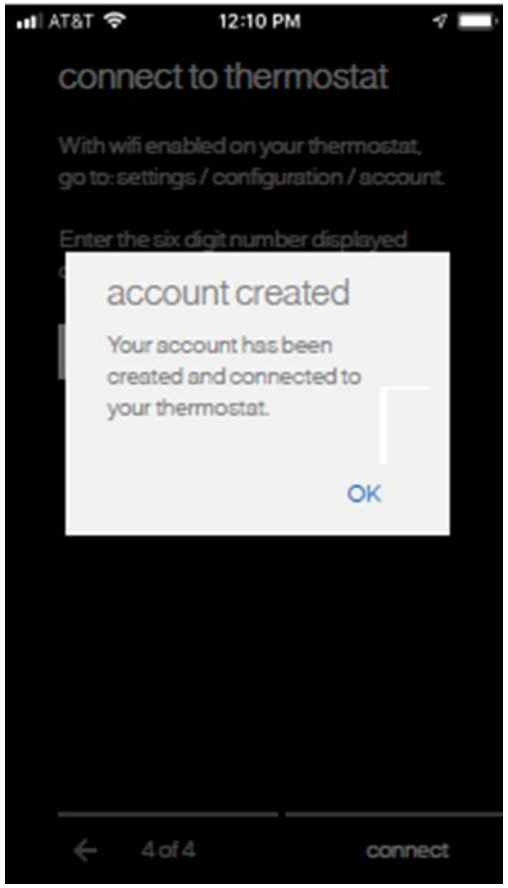
Step 4 - Connecting the App to the thermostat

- With Wi-Fi enabled on your thermostat, access your account to retrieve the six-digit code.
- Type the six-digit code displayed on your thermostat into the space provided on the mobile app.
- Tap connect to continue and operate the Daikin *One*+ from your mobile device.







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Mobile Apps

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