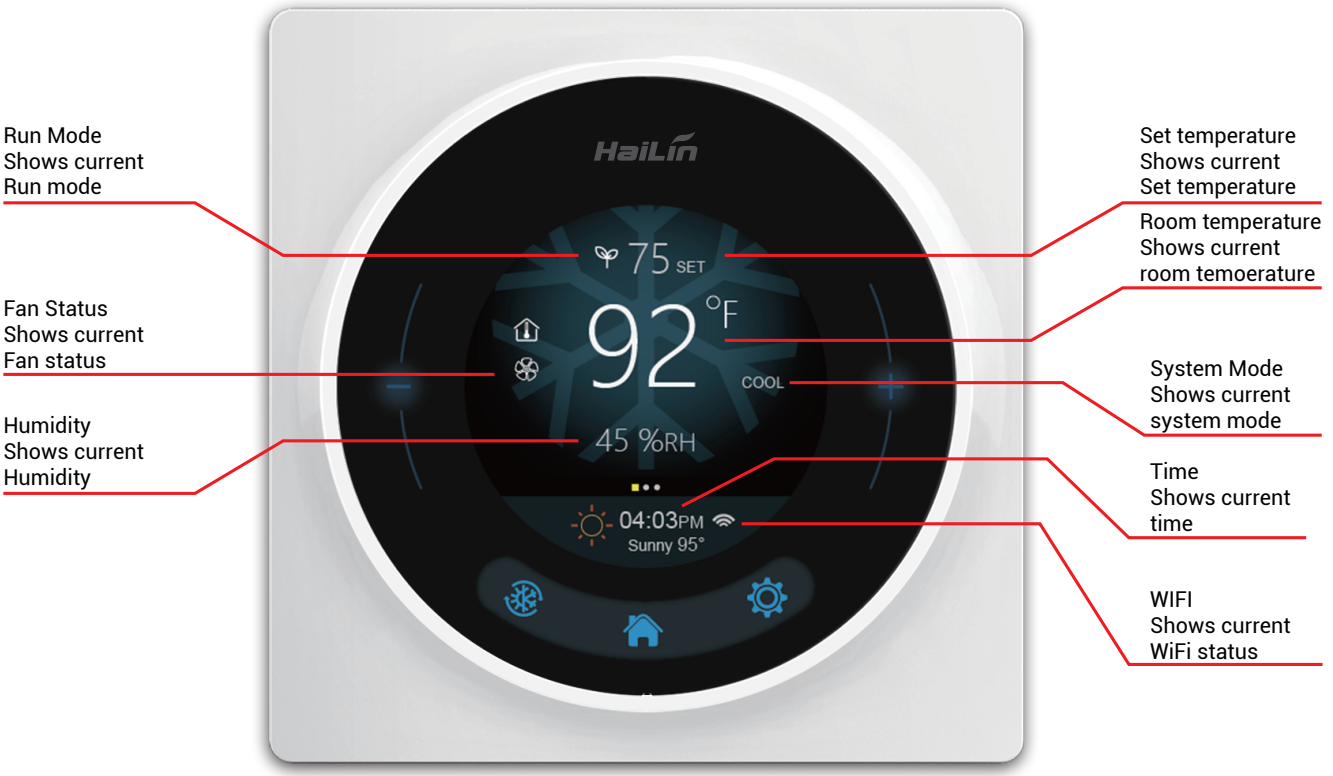
LAKE X
USER GUIDE

Main Screen



Specifications

Temperature Sensor	SHT20
Accuracy	±1°C
Temperature Range	Heating: 40°F – 90°F (4°C – 32°C) Cooling: 50°F – 99°F (10°C – 37°C)
Operating Temp/ Humidity Range	0~45°C, 5~95% RH (non-condensing)
Screen Resolution	320x480 TFT LCD
Power Supply	AC 24V
Size	100x100x20 mm
Housing Material	PC
IP Rank	IP20
WiFi	2.4GHz only

Thermostat Functions

Functions	Descriptions
System Modes	Off, Heat, Cool, Auto, Emergency
Fan	Auto, On
Run Modes	Timing, Eco, Away, Hold, Temporary
Room Temperature Display	Detects the current room temperature.
Humidity Display	Detects the room humidity level
Compressor Protection	Controls the start and stop time intervals of the compressor.
WiFi Connection	Direct WiFi connection for updates and app access.
Timing Programming	User can preset a temperature value or range to start at a certain time and day(s). The timing program will continue until the next schedule or when overwritten by another mode/program.
Away Mode	Energy saving mode when you're away from home. Recommended to preset a wide temperature range.
ECO Mode	Energy saving mode when you're home or away. Recommended to have a smaller preset range than your Away mode.
Filter Monitor	Reminds you when it's time to change the filter according to your preset timer.
Key Lock	Lock the controls to prevent others from operating the thermostat.
Pre-cooling/ Preheating	Calculates the best time period to execute scheduled commands.

App Pairing

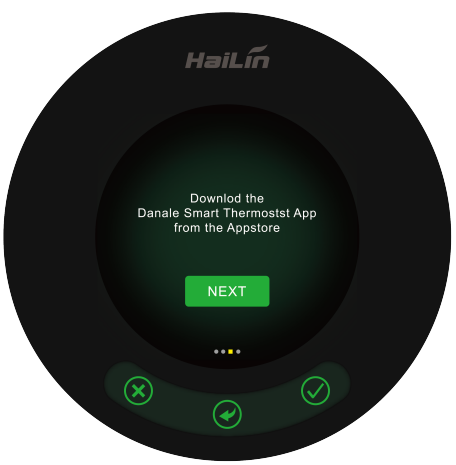
1 From the main screen, tap on the settings icon.

2 Then select the Parameters option.

3 Swipe LEFT to get to the next screen.

4 Swipe LEFT again to get to the next screen.

5 Follow the app download instructions on this screen.



6 Create your account and pair the thermostat device.

Symbol Guide

Symbol	Name	Description
	System Mode	Selection of heat/ cool/ auto/ emer/ off options
	Standby/Main	Standby mode/ Main Screen
	Settings	Enter settings screen
	Away	Away mode activation
	ECO	ECO mode activation
	Off	Turns off all relay outputs
	Auto	System runs in Auto mode
	Heat	Heater activation
	Cool	AC activation
	Emergency	Emergency heating for heat pump systems
	Timing	Timed schedules for preset temp
	Hold	Holding current set temperature
	Fan Auto	Fan runs automatically
	Fan On	Fan turns on
	Parameters	Enter parameters screen
	WiFi	WiFi connectivity

Operations

1) System mode selection

In the main interface press to enter the system mode selection interface. You can switch the system mode by selecting OFF , AUTO , HEAT , COOL and EMER (heat pump only). After selecting a mode, tap the check ✓ button for it to take effect. When OFF is selected, the thermostat turns off all relay outputs.

Note that not all homes will have every mode option available and depends on your HVAC system. The thermostat determines which modes are active according to the HVAC system type.

2) View or modify the set temperature

In the main interface, when a system mode is selected the currently set temperature is displayed directly above the screen. Press - or + touch pads to adjust the set temperature value. When the task mode is in Timing mode, the set temperature value will be automatically changed to a temporary hold. In ECO or Away mode, the set temperature value cannot be adjusted under the main interface. The temperature settings of ECO and Away are set in the system parameter settings.

3) Run mode selection

From the main interface, swiping left to the second page takes you to Run Mode. To activate a Run Mode option, the thermostat System Mode cannot be OFF. The Run Mode can be switched by selecting the TIMING , ECO , AWAY , and HOLD icons.

TIMING mode

TIMING is in the system parameter settings. If no timing schedule is turned on, the default set temperature is executed. (The mode does not change automatically.) If the device is in TIMING mode, there will be an icon displayed on the main interface screen.

ECO mode

This is an energy saving mode to use when you're home or away. This mode will maintain the room temperature to stay within the preset cooling or heating temperature range. When activated, the ECO icon will display on the standby and main interface screens. The range can be adjusted within the Parameters settings, and it is recommended to have a smaller preset temperature range than your Away mode.

AWAY mode

This is an energy saving mode to use when you're away from home. This mode will maintain the room temperature to stay within the preset cooling or heating temperature range. When activated, the AWAY icon will display on the standby and main interface screens. The range can be adjusted within the Parameters settings, and it is recommended to have a larger preset temperature range than your ECO mode.

Hold mode

This mode will maintain the current set temperature. In the hold mode, the icon is displayed in the Task Mode position of the main interface.

Temporary Mode

When the system is in the TIMING run mode, the thermostat can be entered into the temporary mode by modifying the current set temperature. The current set temperature will hold until the next timer schedule takes effect. Temporary mode can be cancelled by selecting another task mode.

4) Fan mode selection

From the main interface, swiping left to the third page takes you to Fan Mode. You can switch the fan mode by selecting the ON or AUTO icons. After clicking a mode, tap the submit button for your selection to take effect. Note that some homes have no fans, so this option will not be available depending on your HVAC system.

5) Settings

Press the settings icon in the main interface to enter the Setting selection interface. The available System mode options are WiFi , Parameters , and Timing .

WiFi – Setting WiFi

WiFi setting interface as shown:

Select your WiFi network name, enter your password, and connect to the WiFi network. Also note that the WiFi icon in the main interface screen will appear when WiFi is connected.

Parameters Setting

The Parameter setting interface allows you to adjust your thermostat with numerous different features and settings.

	Parameter	Default Setting	Ranges
1	Time/Date	2018-11-20 1:11AM	
2	System Type	Heat only conventional	Heat only conventional Cool only conventional 1 stage heat and cool conventional 2 stage heat pump with Aux 1 stage heat pump with Aux and Emer 2 stage heat and cool conventional 2 stage heat pump with Aux and Emer 2 stage heat pump with Aux
3	Fan Control In Heating	0	0 - Thermostat control fan (default) 1 - Equipment control fan
4	O/B Terminal Energized	0	0 - Directional valve opens with cooling (default) 1 - Reversing valve opens with heating
5	Away Heating Temp	40°F / 4°C	°F range: 40 - 90 °C range: 4 - 32
6	Away Cooling Temp	99°F / 37°C	°F range: 50 - 99 °C range: 10 - 37
7	ECO Heating Temp	64°F / 18°C	°F range: 40 - 90 °C range: 4 - 32
8	ECO Cooling Temp	79°F / 26°C	°F range: 50 - 99 °C range: 10 - 37
9	Brightness	80	Value range: 0 - 100
10	Dead band	2°F / 1.5°C	°F range: 2 - 9 °C range: 1.5 - 5
11	Temperature Unit	F	°F - Fahrenheit °C - Celsius
12	1st Stage Hysteresis	2°F / 1°C	°F range: 1 - 3 °C range: 0.5 - 1.5
13	2nd Stage Hysteresis	2°F / 1°C	°F range: 1 - 3 °C range: 0.5 - 1.5
14	3rd Stage Hysteresis	2°F / 1°C	°F range: 1 - 3 °C range: 0.5 - 1.5
15	Furnace Filter	90	Value range: 0 - 360, step value: 30, A value of 0 means that the function is turned off.
16	Recovery	0	0 - not enabled 1 - enabled
17	Compressor Protect	5	Value range: 0 - 5 mins
18	Heat Temp Range	90°F / 32°C	°F range: 40 - 90 °C range: 4 - 32

19	Cool Temp Range	50°F / 10°C	°F range: 50 - 99 °C range: 10 - 37
20	Extend Fan On Time Heat	0	0 - no delay 90 - 90 seconds delay
21	Extend Fan On Time Cool	0	0 - no delay 90 - 90 seconds delay
22	Key Lock	Disable	Disable / Enable
23	Temp Calibration	0	°F range: -9 - 9 °C range: -4.5 - 4.5
24	Standby	1 min	30s - no button operation in 30 seconds to enter standby 1min - 1 minute without key operation to enter standby (default) 2min - no button operation in 2 minutes to enter standby 5min - 5 minutes without button operation to enter standby 10min - no button operation in 10 minutes to enter standby Never - no standby
25	Reset Thermostat	0	Adjust this value to 1 and confirm. All parameters will then be restored to the factory settings
26	Factory Test		Factory test related content

TIMING Setting

A TIMING schedule will activate the thermostat at the preset time and will keep the room temperature within your preset range.

Tap ⊕ to add a new timer; tap ⊖ to delete a timer; keep the switch in the ON position to enable the timer; means the timer is off.

Tap the schedule to edit it. You may modify the time, days of the week, and adjust the heat and cool temperature ranges. Note that up to 12 timers can be set.

Key Lock

Password setting:

Each time you enable the key lock you will need to enter a new password. This password will save until Key Lock is disabled.

When the Standby parameter is set to “Never” and the Key Lock is enabled, the Key Lock will activate once the thermostat has been idle for 30 seconds.

When the Standby time is set to any other time value and the Key Lock is enabled, the main interface will lock immediately.

When the system is locked, changing the main interface state, System Mode or Setting will require you to input the Key Lock password.

Also when the system is locked, the ECO and Away modes will be not be able to be toggled from the standby screen.

Filter Monitoring

To enable this function, you must first modify the number of filter days in the parameter settings. The thermostat will keep track of the number of days the filter is used. When the recorded number of days reaches the preset value, the main display will flash with the filter icon to prompt you to replace or clean the filter.

Pre-cooling/preheating

This function works with your TIMING schedules. When the pre-cooling/preheating function is enabled, the thermostat will calculate how far in advance it should start so that once the scheduled time arrives, the desired room temperature range has already been achieved. The “Recovery” character will be shown on the main display screen when pre-cooling/preheating has been initiated.

Error Codes

If an issue occurs during your normal operation, an Error code may be displayed on the main screen to prompt you to repair the equipment.

Displayed Error Code	Error Code Description
Er	Temperature/Humidity sensor failure
Lo	Low temperature warning
Hi	High temperature warning

FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two
conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
Attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is
connected.
—Consult the dealer or an experienced radio/TV technician for help

This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body.

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