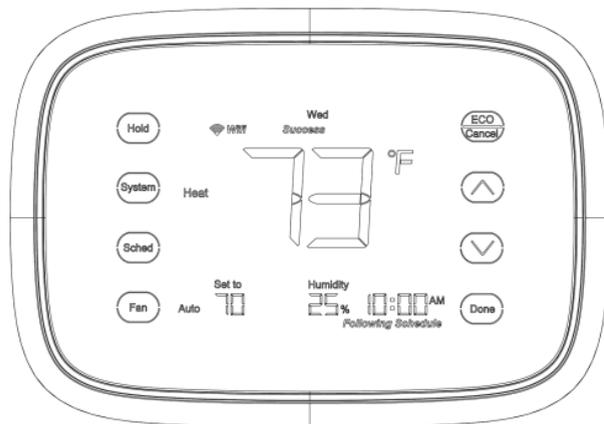


Climetec

ESC Pro WI-FI Touchscreen Programmable Thermostat



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APPLICATION

ESC Pro Wi-Fi touchscreen programmable thermostat is an effortless and 7-Day programmable thermostat that provides universal system compatibility, precise comfort control and easy to program.

ESC Pro provides temperature control for gas, oil, electric and heat pumps for up to 2 heat 2 cool systems.

Above all you can remotely monitor and control the heating and cooling system in your home or business — you can stay connected to your comfort system wherever you go.

FEATURES

- Large, clear display with backlight shows temperature, set temperature and humidity.
- Menu-driven programming make setup effortless.
- Beautiful ergonomic design is smart and sophisticated to match your customer lifestyle.
- Capacitance touchscreen interaction.
- Connect to the Internet to monitor and control your heating/cooling system
- Compressor protection

SPECIFICATIONS

Temperature Setting Range:

Heating: 40°F to 90°F (4°C to 32°C).

Cooling: 50°F to 99°F (10°C to 37°C).

Operating Ambient Temperature:

32°F to 122°F (0°C to 50°C).

Shipping Temperature:

14°F to 140°F (-10°C to 60°C).

Operating Relative Humidity (Non-condensing):

IRS-1: 5% to 95%.

ORS-1: 5% to 95%.

Humidity Display Range:

0% to 99%.

Clock Accuracy:

+/- 2 minute per month.

Cool Indication:

Show "Cool On" on the screen when Cool is activated.

Heat Indication:

Show "Heat On" on the screen when Heat is activated.

Auxiliary Heat Indication:

Show "Aux On" on the screen when Auxiliary Heat is activated.

Power supply:

24VAC, 20VA typical.

Maximum current per channel:

1.5A.

INSTALLER SETUP

Follow these steps to enter the Installer Setup:

1. See Fig. 19-1. Press and release the  Key. System mode will blink, then Press and hold the  key for approximately 5 seconds until the screen change. Menu number display at bottom right corner. See Fig. 19-2.

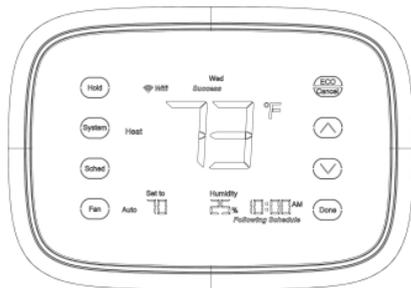


Fig.19-1



Fig.19-2.

2. Press \wedge or \vee key to cutover submenu, and press $\text{\textcircled{System}}$ key enter submenu. Under submenu Use \wedge or \vee to set parameters. See Fig.19-3.

the installer setup, or press $\text{\textcircled{ECO/Cancel}}$ to exit without saving changes.

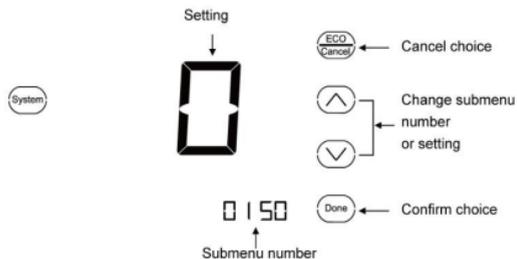


Fig.19-3.

Note: See Tables 2 for the Installer Setup Numbers and Settings.

3. Press $\text{\textcircled{Done}}$ key to exit and confirm

Table 2.installer Setup Menu.

Number	Name	Settings	Notes
0140	version	See firmware version	
0150	Date and time	Set calendar date and time	
0160	Schedule Options	0-non-programmable 1-7 day programmable (Default)	The schedule setting will default if changed

Number	Name	Settings	Notes
0170	System Type Selection	<p>1-1heat / 1cool conventional</p> <p>2-single stage heat pump (no auxiliary heat)</p> <p>3-2heat / 1cool heat pump (with auxiliary heat)</p> <p>4-2heat / 2cool multistage conventional</p> <p>5-Fan coil with 3 fan speeds (water heating and cooling)</p> <p>6-Fan coil with 3 fan speeds (water heating with 3 fan speeds, and compressor AC cooling with 1 fan speed on Hi only)</p> <p>7-Fan coil with 3 fan speeds and ERV (water heating and cooling) (Default)</p>	<p>Available options and defaults vary by thermostat. System selection automatically modifies some default settings and/or hides other Installer Setup options.</p>

Number	Name	Settings	Notes
0170	System Type Selection	<p>8-Fan coil with 3 fan speeds with ERV (water heating with 3 fan speeds, and compressor AC cooling with 1 fan speed on Hi only)</p> <p>9-Fan coil single stage Heat Pump (no auxiliary heat) with ERV</p> <p>10-Fan coil 2heat/1cool Heat Pump (with auxiliary heat) with ERV</p>	
0180	Fan Control in Heating	<p>0-gas or oil furnace equipment controls fan in heating</p> <p>1-electric furnace thermostat controls fan in heating (Default)</p>	<p>This parameter is valid only for non-three-speed fan systems. If heat pump or three-speed fan system is selected, the value is fixed to 1.</p>

Number	Name	Settings	Notes
0190	Changeover Valve O/B Terminal Energized in Heating or Cooling	0-changeover valve O/B terminal is energized in cooling (Default) 1-changeover valve O/B terminal is energized in heating	Only shown if heat pump system is chosen.
0220	Leave mode heating setting temperature	40 °F - 62 °F: leave mode heating, the range of setting temperature (1 °F difference) 4 °C - 16 °C: leave mode heating, the range of setting temperature (0.5 °C difference)	

Number	Name	Settings	Notes
0230	Leave mode cooling setting temperature	76 °F - 99 °F: leave mode cooling, the range of setting temperature (1 °F difference) 24 °C- 37 °C: leave mode cooling, the range of setting temperature (0.5 °C difference)	
0280	Close backlit display	0 - show temperature only 1 - show main menu (Default)	
0300	Changeover	0 - manual changeover 1 - auto changeover (Default)	
0310	Dead band	2 - 2°F (1.5°C) 3 - 3°F (2°C) 4 - 4°F (2.5°C) 5 - 5°F (3°C) 6 - 6°F (3.5°C) 7 - 7°F (4°C) 8 - 8°F (4.5°C) 9 - 9°F (5°C)	Shown only if 0300 is selected.

Number	Name	Settings	Notes
0320	Temperature Indication Scale	0 - Fahrenheit (Default) 1 - Celsius	when it is changed, the schedule need to be reprogrammed
0330	1stage hysteresis	1 F - 3 F (Default 2F)	Fahrenheit value is 2 times of centigrade value
0340	2stage hysteresis	1 F - 3 F (Default 2F)	Fahrenheit value is 2 times of centigrade value

Number	Name	Settings	Notes
0350	3stage hysteresis	1 F - 3 F (Default 2F)	Fahrenheit value is 2 times of centigrade value
0500	Furnace Change Reminder	0 - furnace filter reminder off 1 - 10 run time days 2 - 30 run time days 3 - 60 run time days 4 - 90 run time days 5 - 120 run time days 6 - 365 run time days	Run time based on call for fan.

Number	Name	Settings	Notes
0530	Adaptive Intelligent Recovery	1 - Adaptive Intelligent Recovery control is activated (system starts early so set point is reached by start of program period) (Default) 0 - Conventional Recovery (system starts recovery at programmed time)	
0580	Minimum Compressor Off Time	5 - five-minute compressor off-time setting (Default) 0,2,3,4 - other compressor off-time settings	
0600	Heat Temperature Range Stop	40-90 - temperature range (1°F increments) of heating set point.	Shown in 1/2 °C.

Number	Name	Settings	Notes
0610	Cool Temperature Range Stop	50-99 - temperature range (1°F increments) of cooling set point.	Shown in 1/2 °C.
0640	Clock Format	12 - 12 hour clock (Default) 24 - 24 hour clock	
0650	Extended Fan On Time Heat	0 - No extended fan operation after call for heat ends (Default) 90 - Fan operation is extended 90 seconds after call for heat ends	Not shown in Cool Only Systems
0660	Extended Fan On Time Cool	0 - No extended fan operation after call for cool ends (Default) 90 - Fan operation is extended 90 seconds after call for cool ends	Not shown in Heat Only Systems.

Number	Name	Settings	Notes
0670	Keypad Lockout	0 - unlocked keypad (Default) 1 - locked keypad	When key Locked only ability to enter User Setup to unlock.
0700	Temperature Display Offset	-9°F ~ 9°F (°F as temperature format) -4.5°C ~ 4.5°C (°C as temperature format) 0°F (0°C) (Default)	
0710	Reset thermostat	0 - no thermostat reset. 1 - Resets all Installer Setup Options to default values and resets schedule to default setting.	Only calendar settings and time are retained.

OPERATION

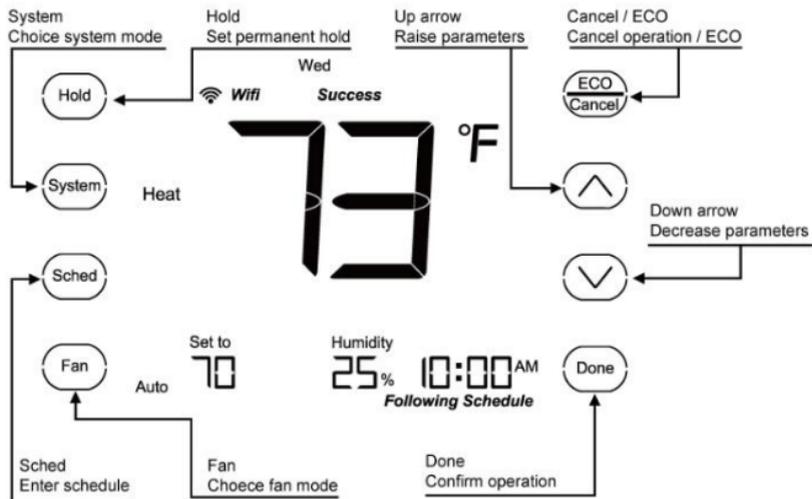


Fig.20. Thermostat Keys

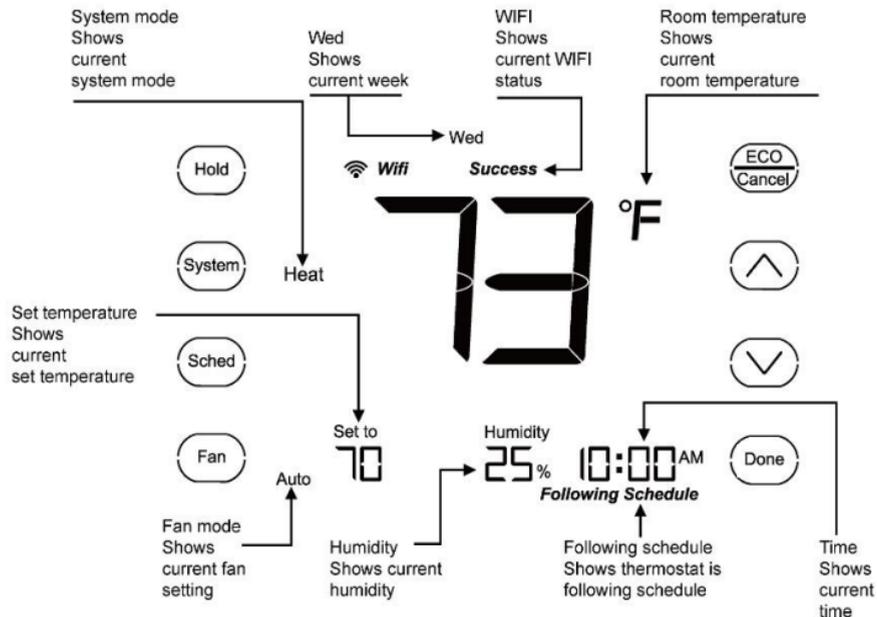


Fig.21. Thermostat Display

User Setup

Follow these steps to enter the User Setup:

1. Press and hold the  key for approximately 3 seconds until the screen change. Menu number display at bottom right corner.
2. Press  or  key to cutover submenu, and press  key enter submenu. Under submenu Use  or  to set parameters.
3. Press  key to exit and confirm the user setup, or press  to exit without saving changes.

Note: See Tables 3 for the User Setup Numbers and Settings, and see chapter INSTALLER SETUP for Operations Reference.

Table 3. User Setup Settings.

Number	Description	Settings
0140	See version	
0150	Date and time	current calendar date and time
0320	Display temperature in °F or °C	0 - °F setting (Default) 1 - °C setting
0640	Clock format	12 - 12-hour clock (Default) 24 - 24-hour clock

Number	Description	Settings
0670	Keypad Lockout	0 - unlocked keypad (Default) 1 - locked keypad
0700	Temperature Display Offset	-3°F ~ 3°F (°F as temperature format) -1.5°C ~ 1.5°C (°C as temperature format) 0°F (0°C) (Default)
0710	Reset Thermostat	0 - No thermostat reset. 1 - Resets all Installer Setup Options to default values and resets schedule to default setting.

Date/time Setting

1. Consult USER SETUP, choose submenu number 0150 enter date and time setting.
2. Press **System** to switch date to time follows order: year, month, day, hour, and minute. Press **^** or **v** to adjust the time. (You can advance the time more quickly by holding the **^** key or **v** key buttons.)
3. Press **Done** to save changes and exit or press **ECO Cancel** to exit without change the date and time.



Fig.22

Setting the fan

1. Press **Fan** to select fan operation.
2. Press **Fan** again to select ON or AUTO (toggle to re-select). The selected option blinks.
4. Press **Done** to save setting. Your selection, or press **ECO Cancel** to exit without saving changes.

ON: Fan is always on.

AUTO: Fan runs only when the heating or cooling system is on.



Fig.23

Selecting system mode

1. Press **System** to display options.
2. Press **System** again to select an option. You may need to press two or three times to make a selection—the selected option blinks.
3. Press **Done** to save setting. Your selection, or press **ECO/Cancel** to exit without saving changes.

Note: If it is a system with ERV control, switching mode value to COOL will trigger the selection of ERV control option. After selecting ERV option, click **Done** to go on system selection.

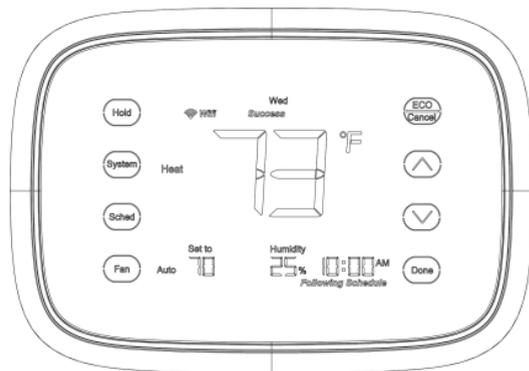


Fig.24

Possible system modes:

HEAT: Controls only the heating system.

COOL: Controls only the cooling system.

OFF: Heating/cooling systems are off.

AUTO: Selects heating or cooling depending on the indoor temperature.

EMER (heat pumps with aux. heat):

Controls auxiliary/emergency heat. Compressor is locked out.

Note: The AUTO and EMER system settings may not appear, depending on how your thermostat was installed.

Note: when under auto mode press  key can switch set temperature between heats and cool.

Set Temperature Overrides

ESC Pro has two temperature override options: **Override Until** and **Permanent Override**.

Override Until

Holds temperature temporarily until the next scheduled period time.

1. Press  or  key to adjust temperature you want, the icon until appears above time, and the time becomes next scheduled period time.
2. Press  key to exit and confirm the changes, or press  to exit without saving changes.
3. If you want to exit Override Until, please press  key. Override Until will be also exit until reach the next scheduled period time.

Note: The current day of the week should already be set correctly. If not, see User Setup to set the date and time setting.

Permanent override

Keep user set-point permanently.

1. Press  key once. Screen shows Permanent Hold.
2. Press  or  key to adjust temperature you want.
3. If you want to exit, please press  key again.

Clean Thermostat Screen

The thermostat has a touch screen interaction. Follow these steps to clean the screen without making thermostat changes:

1. Press and hold the  key for approximately 3 seconds until the screen changes. Thermostat locks out all touch keys for 30 seconds to allow for cleaning. See Fig. 25.
2. Use damp cloth slightly moistened with water or house-hold glass cleaner to clean the screen.

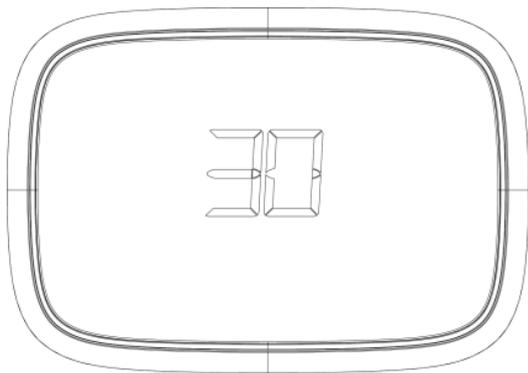


Fig.25.

When time up, press  key to return to the Home Screen and normal operation. See Fig.26.

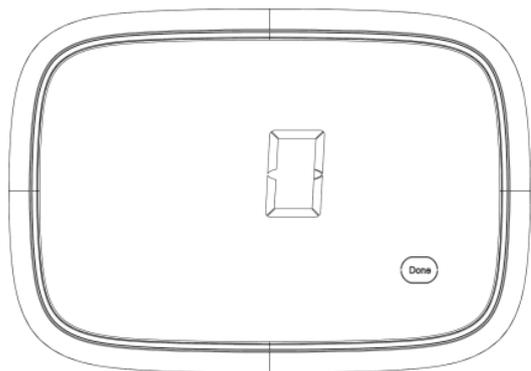


Fig.26.

IMPORTANT:

Do not spray any type of liquid directly on the thermostat itself. If using household glass cleaner, spray cleaner on cloth. Then use a cloth to clean the thermostat screen.

Screen Locks

In User or Installer Setup, menu 0670 allows you to prevent changes to all of the touchscreen functions. In this case, all keys are locked and not functional, the screen displays a lock icon  continuously. Even so, you can though User setup to unlock keys and restore the touchscreen functions.

Setting filter reminder intervals

If activated during installation, the filter reminder alerts you with flashes Filter one screen above the time when it is time to replace your filter.

Press  after changing the filter, to restart the timer. To change the reminder interval:

1. Press and hold the  about 3 seconds until screen changes.
2. Press  or  to select the desired interval (in days), then press  to save and exit, or press  to exit without save.

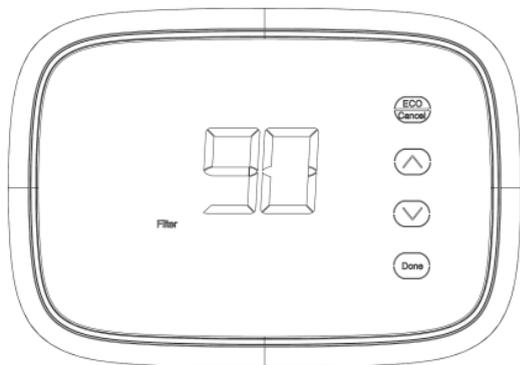


Fig.27.

Note:

1. System setting function 0500 governs the filter interval maximum.
2. The days are counted as fan run time, so anytime the fan is running, the reminder is counting that time against the number of days selected.

Connecting to your Wi-Fi network

To complete this process, you must have a smart phone connected to your home wireless network. Please download “TuyaSmart” APP from App store.

If you get stuck...

At any point in this procedure, restart the thermostat by removing the thermostat from the wall plate, wait a few seconds, and snap it back onto the wall plate. Return to Step 1 in this procedure, which starts on the next page.

1. Please be sure your phone has connected WIFI (don't connect the hidden internet), download "TuyaSmart" APP from App store.
2. Open APP, sign up and Log in.

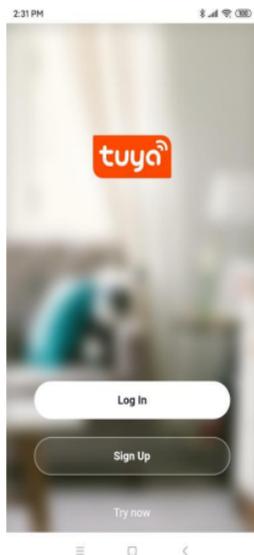


Fig. 28.

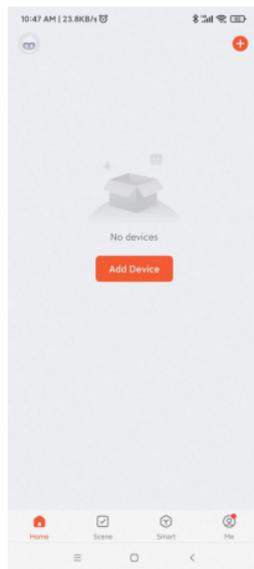


Fig. 29.

3. Press and Hold “Done” key on the bottom right corner of touchscreen, until the “Wifi Setup” icon flashes on the screen.

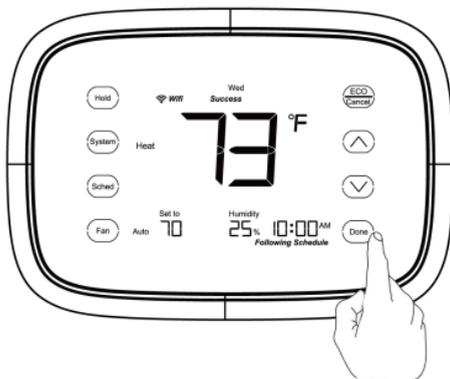


Fig. 30.

4. Open the TuyaSmart APP, click “Add Device” or the “+” button on the up-right corner of the APP, APP will automatically detect the thermostat and a setup page will appear, click “Go to add” and you will be directed to the Add Device page, Click the “+” button to continue.

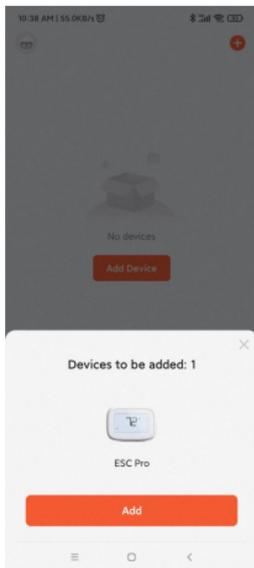


Fig. 31.

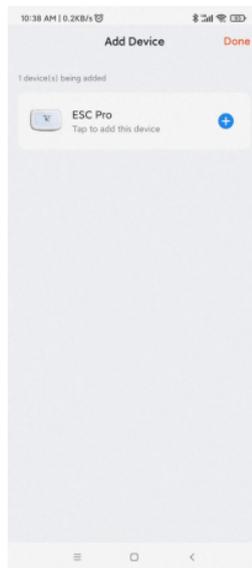


Fig. 32.

5. Select the Wi-Fi username and enter the password. Click "Confirm".

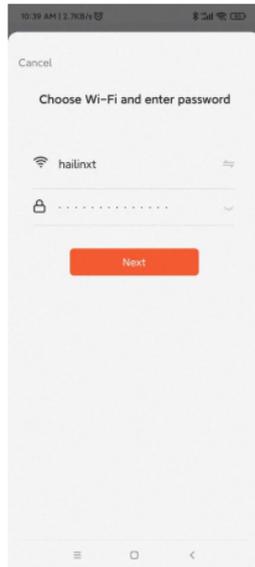


Fig. 33.

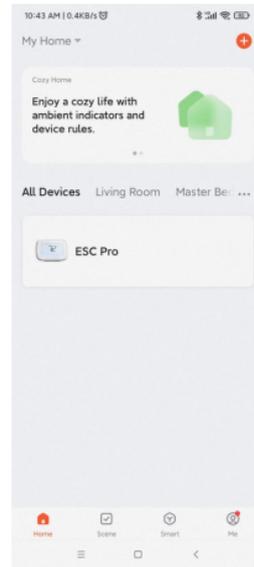


Fig. 34.

6. Wait for the thermostat to be added successfully.

Note:

1. IF connect WIFI successfully, it will show  *Wifi Success* on the thermostat, otherwise will show *Wifi Failure* .
2. Each configuration need to be finished within 3minutes, otherwise the thermostat will quit to configure.
3. During step 4, if the APP did not automatically detect the thermostat, users can select “Add Manually” or “Auto Scan”, and follow the instructions to finish Setup.

Leave mode

Just need to press the  on homepage, ESC Pro will switch to leave mode. (You can set the temperature you need under leave mode, see the following programming to set the temperature)

If ESC Pro has been under leave mode, press  on homepage to quit the mode and recover the previous status.



Fig. 35.

PROGRAMMING

Table 4. Schedule Default Program Settings.

Schedule Period	Time	Set points		Fan Setting
		Heat	Cool	
Wake	6:00AM	73°F (23°C)	75°F (24°C)	Auto
Leave	8:00AM	70°F (21°C)	77°F (25°C)	Auto
Return	4:00PM	73°F (23°C)	75°F (24°C)	Auto
Sleep	10:00PM	70°F (21°C)	77°F (25°C)	Auto

Program Heating and Cooling Schedule

Your thermostat can control up to four different schedule periods per day:

Wake - Period when you awaken and want your home at a comfortable temperature.

Leave - Period when you are away from home and want an energy-saving temperature.

Return - Period when you return home and want your home back to a comfortable temperature.

Sleep - Period when you are asleep and want an energy-saving temperature.

NOTE: Schedule times are in 15-minute intervals.

Edit Schedule

1. Press , the screen will change. See Fig. 36 and 37.

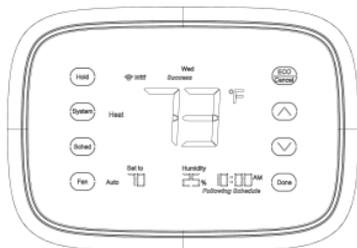


Fig.36.

2. In this case, the time will blink, press  or  to adjust the time. Press  to turn to next setting.
3. Then, the temperature will start to blink, press  or  to

adjust the temperature. Press  to turn to next time period.

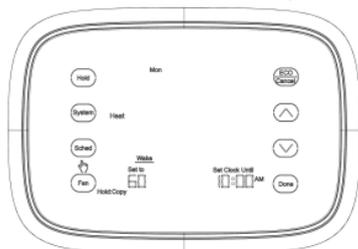


Fig.37.

4. Repeat the above steps until completing the setting of four time periods. Then, Press  to turn to next day, until completing the setting of a week.
5. End of Program Setting, You may press  key to exit and confirm the program setting, or press  to exit without saving changes.

NOTE: The Fan setting is auto as default and cannot be programmed.

Copy one-day program

After entering a day program you can copy this into another day to save time when creating a weekly program: for example, if you want to copy the program of Monday to Thursday, the methods are as follows:

1. Select the program for Monday, complete the setting of Monday and press , the icon **Copy to:** appears on the screen, and the icon **Tue** Will blink, that indicates Waiting to be selected or skipped. Press  to select, press  to skip.
2. Copy to Thursday: press  or  to select Thursday, then press  to finish the copying and the icon **Copy to:** disappears.
3. Copying for other days, please repeat from the Step 1 to 2. One time you can copy to one day or many days.

Reset Schedule

Your thermostat can reset schedule setup option to default setting.

Press and hold  key for approximately 3 seconds until the screen change as Fig.38, then release  key. Now, the setting of schedule reset to default setting as table 4.

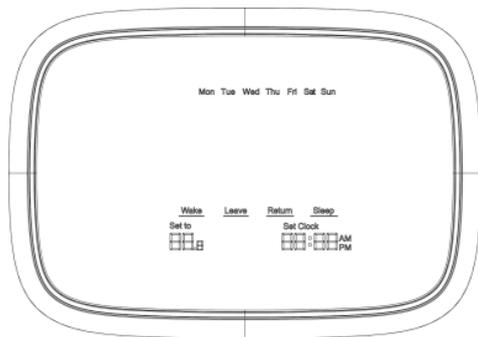


Fig. 38.

TROUBLESHOOTING

Symptom	Possible Cause	Action
No LCD display	Thermostat is not being powered.	Check 24VAC between C and R.
Temperature settings do not change.	The upper or lower temperature limits were reached.	Check temperature set-points. Check Installer Setup Numbers 0600 or 0610, modify as needed.
	The keypad is fully locked.	Check Installer Setup Number 0670 to change keypad locked options.

Symptom	Possible Cause	Action
Heating or cooling does not come on.	Thermostat minimum off-time is activated.	Wait up to five minutes for the system to respond.
	System selection is not set to Heat or Cool.	Set system Selection to correct position.
	System type Selection is incorrect.	Check Installer Setup Number 0170 and make sure correct System type is chosen.

Symptom	Possible Cause	Action
<p>Thermostat is calling for Heat (Heat on) or Cool (Cool on) but no heating or cooling is running.</p>	<p>Heating or cooling equipment is not operating.</p>	<p>Check wiring. Check Installer Setup Number 0170 and make sure correct system type is chosen. Verify operation of equipment in System Test mode.</p>
<p>Fan does not turn on in a call for heat (electric furnace).</p>	<p>Fan Control in Heating is set to Gas or Oil Furnace (Setting 0180).</p>	<p>Set Fan Control in Heating to Electric Furnace (Setting 0180).</p>

Symptom	Possible Cause	Action
Heat pump puts out cool air in the heat mode and warm air in the cool mode.	Changeover Valve is not configured to match the changeover required by the installed heat pump.	Set Changeover Valve (Installer Setup Number 0190) to match the changeover required by the installed heat pump.
Both the heating and cooling equipment are running at the same time.	The heating equipment is not a heat pump but the System Type is set to Heat Pump.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.
	Heating and cooling wires are shorted together.	Separate the shorted heating and cooling wires.

Symptom	Possible Cause	Action
Heating equipment is running in the cool mode.	Heating equipment is not a heat pump but System Type (Installer Setup Number 0170) is set to Heat Pump.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.
Heating equipment does not turn off and heat temperature setting is set below room temperature	Heating equipment is not a heat pump but System Type (Installer Setup Number 0170) is set to Heat Pump.	Set System Type (Installer Setup Number 0170) to match the installed heating and/or cooling equipment.

Symptom	Possible Cause	Action
Cannot set the system setting to Heat or Cool.	System Type is set to Cool Only or Heat Only or Heat Only with Fan.	Set System Type (Installer Setup Number 0170) to match the installed equipment.
Heat On is not in the display.	System is not set to Heat and/or temperature is not above room temperature.	Set the system setting to Heat and set the temperature setting above the room temperature.
Cool On is not in the display.	System is not set to Cool and/or temperature is not below room temperature.	Set the system setting to Cool and set the temperature setting below the room temperature.

Symptom	Possible Cause	Action
Wait is in the display.	Compressor minimum off timer is active.	Wait up to five minutes for the cooling or heating (heat pump) equipment to turn on.
Screen Locked appears on the screen and the keys do not respond.	The keypad is locked.	Check Installer Setup Number 0670 to change keypad locked options.