



USER'S GUIDE

STZW402+
ELECTRONIC THERMOSTAT FOR THE SMART HOME



For further information or to consult this guide online, please visit our website at www.stelpro.com

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WARNING

Before installing and operating this product, the owner and/or installer must read, understand and follow these instructions and keep them handy for future reference. If these instructions are not followed, the warranty will be considered null and void and the manufacturer deems no further responsibility for this product. Moreover, the following instructions must be adhered to in order to avoid personal injuries or property damages, serious injuries and potentially fatal electric shocks. All electric connections must be made by a qualified electrician, according to the electric and building codes effective in your region. Do NOT connect this product to a supply source other than 120 VAC or 240 VAC, and do not exceed the load limits specified. Protect the heating system with the appropriate circuit breaker or fuse. You must regularly clean dirt accumulations on the thermostat. Do NOT use fluid to clean thermostat air vent. Do not install thermostat in a wet place. However, installing it in isolated walls is allowed.

Note

When a part of the product specification must be changed to improve operability or other functions, priority is given to the product specification itself. In such instances, the instruction manual may not entirely match all the functions of the actual product.

Therefore, the actual product and packaging, as well as the name and illustration, may differ from the manual.

The screen/LCD display shown as an example in this manual may be different from the actual screen/LCD display.

DESCRIPTION

This thermostat is designed to control baseboard and convector heaters. It may be added (included) in a Z-Wave network.

This thermostat is **NOT** compatible with the following installations

- Inductive load
- Central Heating System
- Fan-forced heater (unit containing motor and fan)
- Heating load outside the specified ratings (Refer to section “Technical Specifications”)

Parts supplied

- one (1) thermostat;
- one (1) wall mounting plate located at the back of the thermostat;
- two (2) mounting screws;
- two (2) solderless connectors suitable for copper wires

INSTALLATION


Selection of the thermostat location

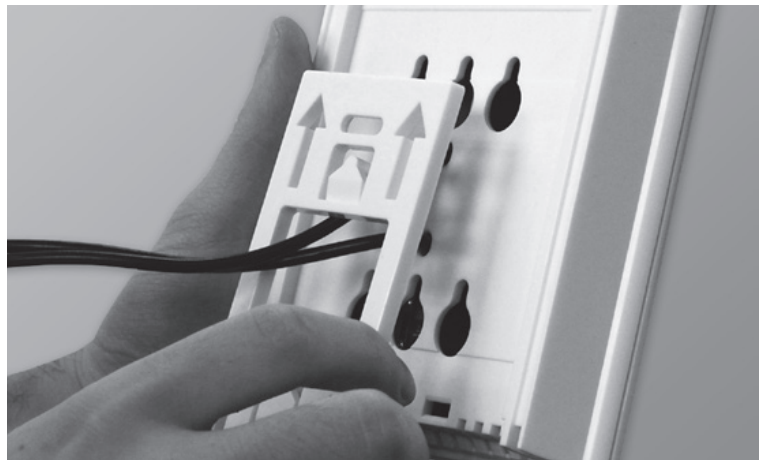
The thermostat must be mounted to a connection box on a wall facing the heating unit, at around 1.5 m (5 feet) above the floor level, on a section of the wall exempt from pipes or air ducts.

Do not install the thermostat in a location where temperature measurements could be altered. For example:

- close to a window, on an external wall, or close to a door leading outside;
- exposed directly to the light or heat of the sun, a lamp, a fireplace or any other heat source;
- close or in front of an air outlet;
- close to concealed ducts or a chimney; and
- in a location with poor air flow (e.g. behind a door), or with frequent air drafts (e.g. head of stairs).

Thermostat mounting and connection

1.  Cut off power supply on lead wires at the electrical panel in order to avoid any risk of electric shock.
2. If an existing thermostat is being replaced, remove the previous thermostat.
3. Ensure that the air vents of the Ki thermostat are clean and clear of any obstruction.
4. Using a screwdriver, loosen the screw retaining the mounting base of the thermostat (do not completely remove the screw).



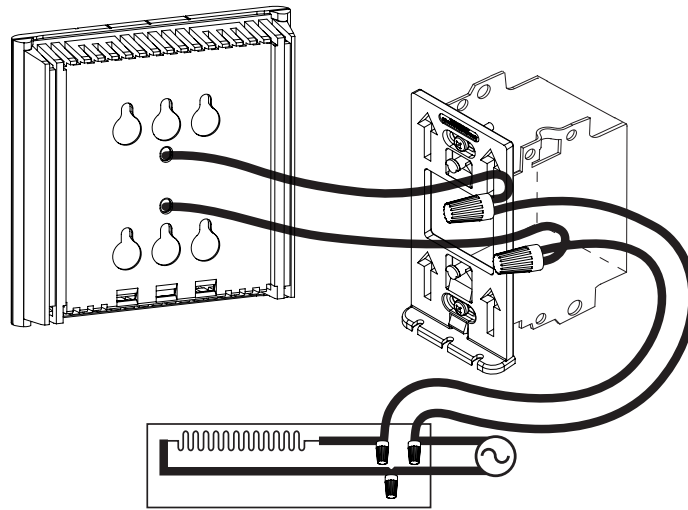
Then, remove the mounting base at the back of the thermostat by tilting it downward, then towards you.

5. Align and secure the mounting base to the connection box using the two screws supplied.

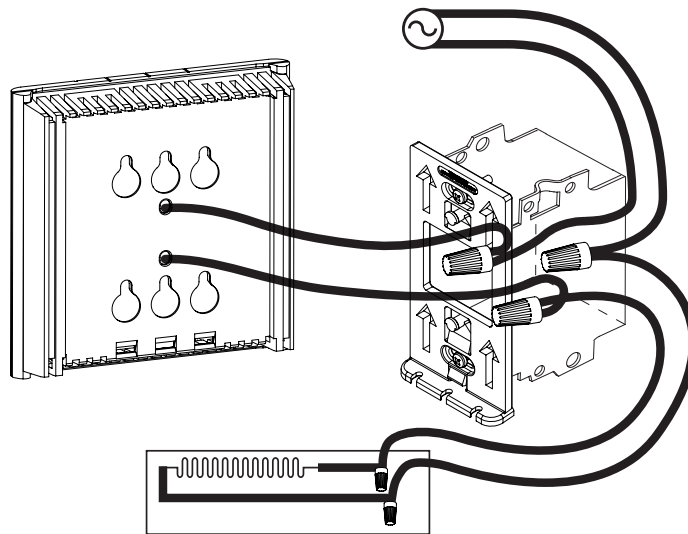


6. Pass the wires from the wall through the hole at the base of the mounting base and connect them using the supplied solderless connectors. When making the connection with aluminum wire, make sure that you are using connectors identified CO/ALR. Please note that the thermostat wires do not have polarity. Therefore, the way they are connected is not important.

2-WIRE INSTALLATION



4-WIRE INSTALLATION

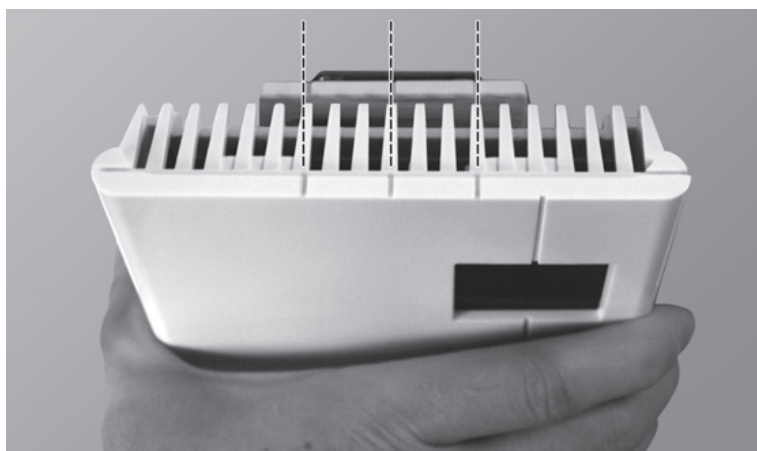


7. Place all the wires into the connection box.



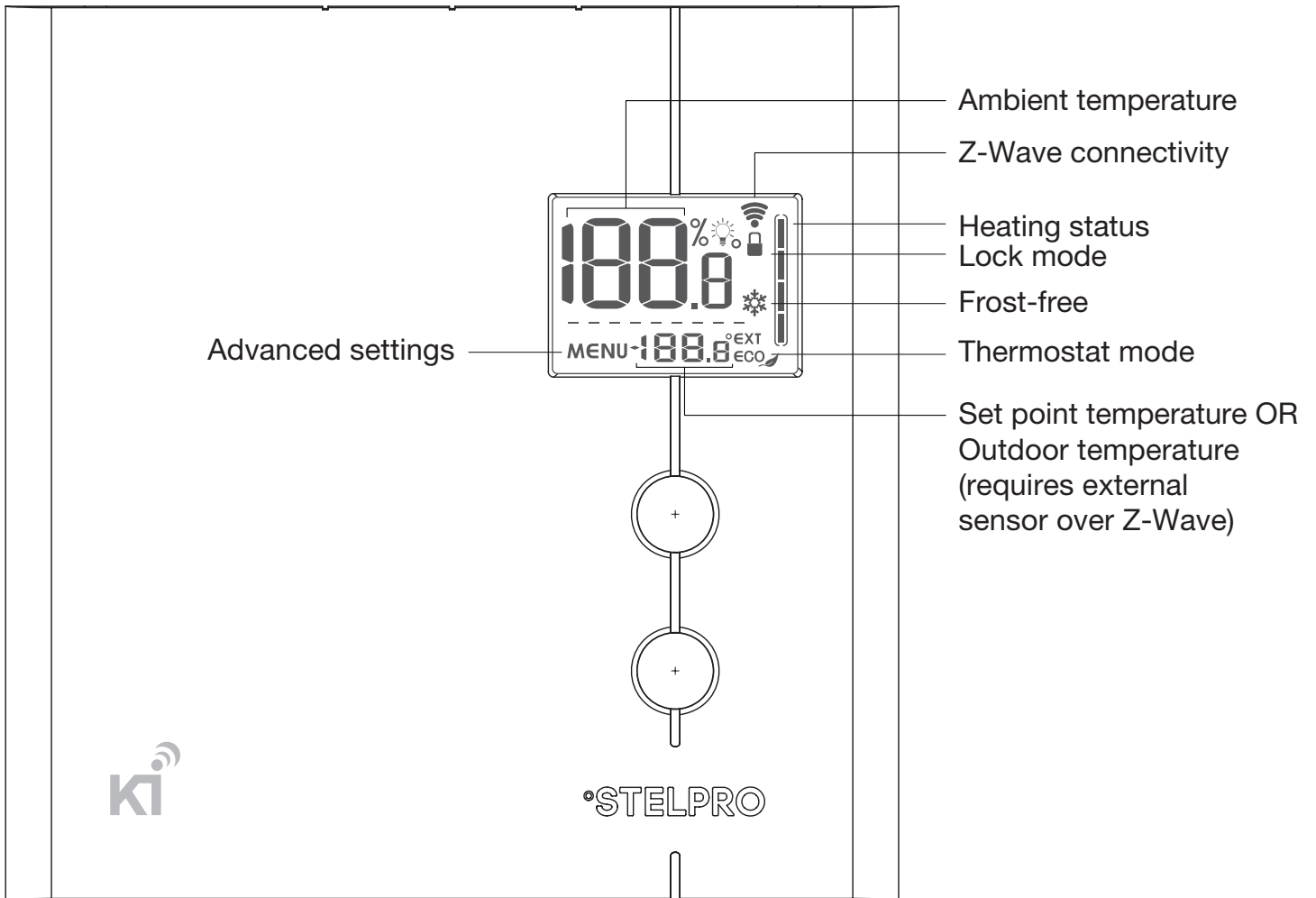
8. Align the little slots located on the top of the thermostat with those on the the mounting base and secure the thermostat to the mounting base. Note that you can also position the thermostat on the left or the right side of the junction box (see the illustrations below). Then, tighten the screw at the bottom of the unit.

ALIGNMENT



9. Turn on the power.

OPERATION



Ambient temperature

The temperature is displayed either in °C with a 0.5°C resolution or in °F with a 1°F resolution. The screen will display LO if the temperature drops below 0°C (32°F) and will display HI if the temperature rises above 50°C (122°F).

Temperature set points






The set point may be edited by the user using the UP and DOWN buttons located on the thermostat. The set point may also be modified through the Z-Wave network.

The minimum set point is 5°C (41°F) and the maximum set point is 30°C (86°F).


NOTE: if the set point is set at 7°C (45°F) or below, the frost-free warning icon ❄️ will be displayed to warn the user that water pipes might be subject to freezing.

Heating Power Indicator

Whenever the thermostat is actively heating the room, the heating status graph will display the heating percentage.

	No bar: 0%
	1 bar: 1-25%
	2 bars: 26-50%
	3 bars: 51-75%
	4 bars: 76-100%

Thermostat mode

The thermostat has two modes: Comfort and Eco. Each mode has its own set point pre-set Comfort: 21°C (70°F), Eco (ECO ): 17°C (63°F).


The user may change the set point to any value in the range described in the set point section.

When the Eco mode is active, the Eco icon (ECO ) is displayed on the LCD.




The thermostat mode may be changed locally on the thermostat by pressing the UP and DOWN buttons simultaneously for less than 3 seconds while on the main screen. The Eco set point is local to the thermostat and cannot be edited through the Z-Wave network.

If a set point change is sent through the Z-Wave network, the thermostat mode will automatically switch to Comfort mode. The Z-wave modes are described in the following table:

CROSS REFERENCE TABLE

Ki	Z-Wave protocol
Comfort	Heat (1)
Eco (ECO )	Energy Save Heat (11)




Z-Wave connectivity

If the thermostat is added (Included) to a Z-Wave network, the connectivity icon  will be displayed on the LCD, if the device is removed (Excluded) from a Z-Wave network, the connectivity icon  will disappear. The connectivity icon  may blink if there is an issue with the Z-Wave radio circuit.


Advanced settings (MENU)

There are 6 advanced settings menus on the thermostat.

The advanced settings are the following:

1. Z-Wave menu : used to add (include) or remove (exclude) the thermostat from a Z-Wave network
2. Display format: used to switch the temperature format between °C and °F
3. Lock mode : used to lock the thermostat to prevent unauthorized tampering.
4. Outdoor temperature display **EXT**: used to switch the outdoor temperature display on or off (when available). When set to On, the outdoor temperature will be displayed if it's available. When set to Off, the outdoor temperature will not be displayed and set point will always be displayed.
5. Backlight status %  while idle: used to set the backlight intensity when the thermostat is idle.
0%: the backlight will turn off after 15 seconds of inactivity
50%: the backlight will dimmed to 50% after 15 seconds of inactivity
100%: the backlight will always be at full intensity

6. °STELPRO information menu: used to gain information on the product

- Version
- Date of production (mm/dd)
- Year of production
- Z-Wave Node Id 
- Baseboard/convector control checksum
- Reset to default

Modification of the settings:

- To gain access to the advanced settings root menu, press the UP and DOWN buttons simultaneously for 3 seconds.
- At this point each setting (1 to 6) may be accessed by using the UP and DOWN buttons.
- To edit a value, choose a setting then simultaneously press the UP and DOWN buttons once. Press the UP or DOWN button to edit the value.
- Confirm your choice by pressing the UP and DOWN buttons simultaneously one time at which point the icon will momentarily flash rapidly if a change has been made.
- To exit the advanced settings press the UP and DOWN buttons simultaneously for 3 seconds at any time. If the thermostat is left idle it will revert back to the main screen after 30 seconds


Z-Wave interoperability

This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.


Z-Wave inclusion/exclusion ()

Inclusion:

Make sure the Z-Wave hub is in the include mode (Refer to your Z-Wave hub instruction manual).

To add (include) the thermostat to a Z-Wave network, enter the Menu 1 (Z-Wave menu) and select “On”. Then press the UP and DOWN buttons to start the inclusion process. During inclusion, “On” will be blinking and the connectivity icon  will be animated in an increasing pattern. When the inclusion process has been completed, On will be displayed solid. If an error occurs, “Err” will be displayed for 3 seconds then the screen will revert to “Off” selection.

Exclusion:

Make sure the Z-Wave hub is in the exclude mode (Refer to your Z-Wave hub instruction manual). To remove (exclude) the thermostat from a Z-Wave network, enter the Menu1 (Z-Wave menu) and select "Off". Then press the UP and DOWN buttons to start the exclusion process. During exclusion, "Off" will be blinking and the connectivity icon  will be animated in an decreasing pattern. When the exclusion process has been completed, Off will be displayed solid. If an error occurs, "Err" will be displayed for 3 seconds then the screen will revert to "On" selection.

To achieve better network performance, it is recommended to always add (include) your Z-Wave devices starting from the closest one to the farthest one.

Note: Each time the inclusion or exclusion process is started, the thermostat will send a "Node Information Frame"

Z-Wave Association

The Z-Wave Association Command Class is supported by the thermostat.

The thermostat supports the lifeline as Group1 and only one Node Id is supported in this group (the Z-Wave controller).

The following reports are sent via the Lifeline :

- Basic Report
- Device Reset Locally Notification
- Thermostat Mode Report
- Thermostat Setpoint Report
- Sensor Multilevel Report
- Thermostat Operating State Report

Z-Wave Basic command class

The Z-Wave Basic command class is supported by the thermostat in the following way:

To trigger the Eco mode on the thermostat: Send it a Basic SET (0x00) command (Energy Saving Mode)

To trigger the Comfort mode on the thermostat: Send it a Basic SET (0xFF) command (Comfort Mode)

Factory Reset

The thermostat may be manually reset to its factory state.

When this is performed, all parameters are reset to their default values and the thermostat is removed (excluded) from the Z-Wave network.

To reset the thermostat to its default state:

- Enter the advanced settings
- Enter the °STELPRO menu (menu 6)
- Navigate to the “def” screen using the UP or DOWN buttons.
- Enter the “def” menu by pressing the UP and DOWN buttons for less than 3 seconds
- Select “yes” and confirm the selection by pressing the UP and DOWN buttons for less than 3 seconds.

If the thermostat was added (included) in a Z-wave network, it will send a “device reset locally” notification.

The thermostat will then reset itself.

Please use this procedure only when the network primary controller is missing or otherwise inoperable.

Outdoor Temperature (EXT)

When connected to a Z-Wave network, the thermostat may display the outdoor temperature provided by an external sensor.

When available, the outdoor temperature is displayed instead of the set point, providing that the outdoor temperature display setting is set to on.



If no temperature is received within a 4 hours timeframe, the outdoor temperature will disappear and the set point will be displayed.

In order to display the outdoor temperature, an external sensor needs to be part of the Z-Wave network. It may be a physical sensor or a weather station app.

Refer to your Z-Wave hub controller instructions manual to find how to associate both devices. On some Z-Wave hub controllers, an app may be used to provide the outdoor temperature.

TROUBLESHOOTING

PROBLEM CODE	DEFINITION
LO	Temperature is below 0°C (32°F), heating will be always active
HI	Temperature is above 50°C (122°F), heating will be always inactive
--	Temperature sensor is defective, heating will always be inactive. Call tech support.
Err	The connection could not be established with the Z-wave network. Make sure the thermostat is within range of the Z-Wave controller or a Z-Wave repeater and make sure the Z-Wave controller is in Inclusion or Exclusion mode.
E1	Secondary temperature sensor is defective. The thermostat will still control the temperature but performance may be degraded. Consider replacing the thermostat.

PROBLEM	SOLUTION
The thermostat is hot	<ul style="list-style-type: none"> In normal operating conditions, the thermostat housing can reach nearly 55°C (131°F) at maximum load. That is normal and will not affect the effective operation of the thermostat.
Heating is always on	<ul style="list-style-type: none"> Check if the thermostat is properly connected. Refer to the installation section.
Heating does not run even if the thermostat indicates it is on	<ul style="list-style-type: none"> Check if the thermostat is properly connected. Refer to the installation section.
The display does not turn on	<ul style="list-style-type: none"> Check if the thermostat is properly connected. Refer to the installation section. Check the power supply at the electrical panel. Check if the heating unit has a switch. If so, ensure that this switch is turned on.
The display turns off a few minutes and then turns on again	<ul style="list-style-type: none"> The thermal protection of the heating unit has opened due to overheating. Check if the heating unit is in good condition of operation and that clearance around the appliance is according to the manufacturer's specifications.
The displayed ambient temperature is incorrect	<ul style="list-style-type: none"> Check the presence of an air stream or a heat source near the thermostat, and correct the situation.
The connectivity icon  is blinking on the main screen	<ul style="list-style-type: none"> Make sure the thermostat is properly associated with the Z-Wave controller.
Setpoint and mode cannot be changed	<ul style="list-style-type: none"> The thermostat is locked, turn OFF the lock mode 

N.B. If you are unable to solve the problem after having verified these points, please communicate with our customer service. Consult our website for the phone numbers.

TECHNICAL SPECIFICATIONS

Supply voltage

120/240 VAC, 50/60 Hz

Minimum current with resistive load

1.25 A

300 W @ 240 VAC

150 W @ 120 VAC

Maximum current with resistive load

16.7 A

4000 W @ 240 VAC

2000 W @ 120 VAC

Temperature display range

0°C to 50°C (32°F to 122°F)

Temperature display resolution

0.5°C (1°F)

Temperature set point range

5°C to 30°C (41°F to 86°F)

Temperature set point increment

0.5°C (1°F)

Storage temperature

-50°C to 50°C (-58°F to 122°F)

Functional temperature (product fully functional)

0°C to 50°C (32°F to 122°F)

Operating temperature (LCD performance might degrade below 0°C)

-20°C to 50°C (-4°F to 122°F)

