

# themo

Rethinking electric heating



Thank you!

Thank you for purchasing Themo T700DIN. This comprehensive manual will provide you with step-by-step instructions to help you install and set up your new device. It also contains valuable tips to ensure that you get the most out of your new Themo Smart device.

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## 1. Introduction to Themo T700DIN (DIN Themo)



The Themo T700DIN is a universal DIN-mounted device that is designed to regulate a wide range of heating systems and electrical appliances. This device can be conveniently configured to function either as a thermostat or as a "Price Switch," making it an excellent controller for diverse electrical applications.

Each Themo T700DIN device has its own Wi-Fi chip, which is paired to your home network during configuration. Therefore, it is crucial to ensure a strong Wi-Fi connection at the place of installation.

## 2. Installation and Setup

### 2.1 Profile Setup

The first step in using Themo is to download the Themo mobile app from the App Store or Google Play Store. Once downloaded, please register a new Themo account. After registering and logging in to the app, select your preferred language and add your electricity contract information to the app. Themo uses this information to plan and control the heating of all devices on your profile for optimizing cost efficiency.



### 2.2 Installation

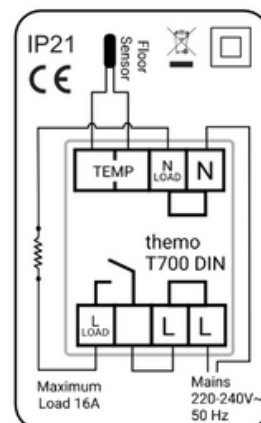
The installation of Themo T700DIN must be performed by an authorized and qualified installer in accordance with local regulations. Before installation, ensure that the main supply to Themo T700DIN is turned off.

When Themo T700DIN is used to control the floor heating element in connection with a wooden floor or similar material, always use a floor sensor and never set the floor temperature to more than 30°C. Themo T700DIN must be connected to a power supply via an all-pole disconnection switch, and it must always be connected to a continuous power supply.

Do not expose Themo T700DIN to moisture, water, dust, or excessive heat, and ensure that children are supervised to prevent them from playing with the device. Cleaning and user maintenance should not be performed by children without supervision.

NB! Themo requires a working Wi-Fi connection to perform full functionality. Themo T700DIN must be set up properly through the mobile app for it to work safely.

Installation instructions of Themo T700DIN can be found in the installation manual. Connect Themo T700DIN according to the wiring diagram on the side of Themo T700DIN.

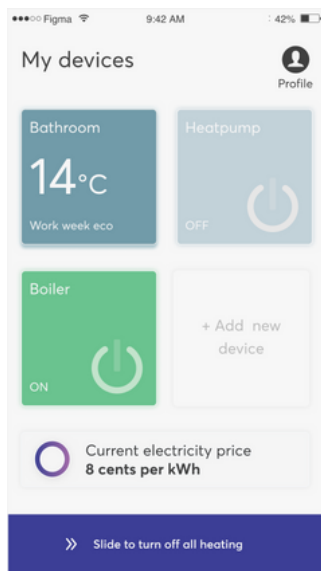


## 2.3 Device Setup

Adding a device to your profile is simple:

1. Ensure that your Themo T700DIN is in configuration mode ('CONFIG' text is shown on the screen).
2. Click on "Add new device" on the main dashboard of the Themo mobile app.
3. Follow the instructions on the mobile app.

NB! Turn off your cellular data and VPN for the configuration process.



NB! The configuration of the device is contingent upon the installation of a temperature sensor. If a temperature sensor is installed, the Themo T700DIN will be configured to operate in Thermostat mode. In the absence of a temperature sensor, the device will be configured to function in Price Switch mode.

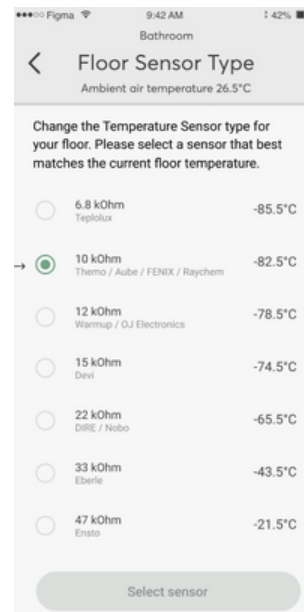
## 3. Thermostat mode

### 3.1 Functions

#### 3.1.1 Floor Sensor Type Selection

Select the device and navigate to the settings menu, which is represented by a gear wheel icon located in the top right-hand corner of the screen. Once there, choose 'Configure Device' followed by 'Floor Sensor Type'.

While Themo will automatically select the most appropriate sensor for your needs, it is important to verify that this is the correct one for you. If you are using Themo's own sensor, select the 10 kOhm option. If you are using a sensor from a previous thermostat, you may be able to locate the correct value by searching for the model of your previous device online.

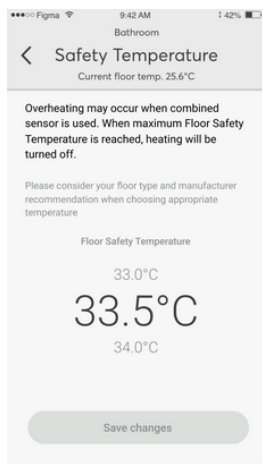


#### 3.1.2 Safety Temperature

Select the device and navigate to the settings menu, which is represented by a gear wheel icon located in the top right-hand corner of the screen. Once there, choose 'Configure Device' followed by 'Safety Temperature'.

In this section, you can set the maximum temperature for your floor. Once the set temperature is reached, the heating system will automatically shut off.

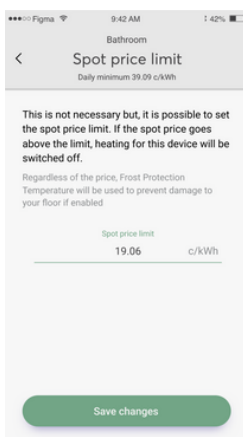
It's important to note that the Safety temperature is unique for every floor. To obtain the correct value for your floor, we recommend reaching out to the manufacturer of the flooring material. Generally, for parquets and laminate floors, the safety temperature is around 27-29°C. However, for tile floors, the safety temperature is typically 29°C or above. By setting the correct safety temperature, you can ensure that your floor heating system operates safely and effectively.



### 3.1.3 Spot Price Limit

Select the device and navigate to the settings menu, which is represented by a gear wheel icon located in the top right-hand corner of the screen. Once there, choose 'Configure Device' followed by 'Spot Price Limit'.

This feature allows Themo to automatically stop heating if the hourly Spot price exceeds the limit you've set. It's important to note that this feature is entirely optional and can be enabled or disabled based on your personal preference.

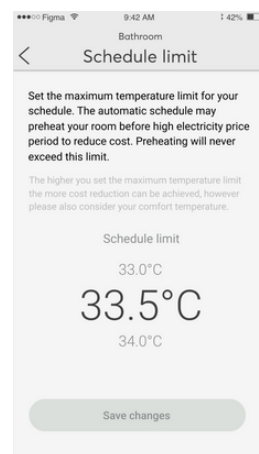


### 3.1.4 Schedule Limit

Our intelligent algorithm is designed to optimize your energy consumption and minimize your energy expenses by taking advantage of the cheap electricity prices during off-peak hours. With this innovative feature, you can enjoy a comfortable indoor temperature while also keeping your energy costs under control.

Themo pre-heats your floor during off-peak hours. Schedule Limit is the maximum temperature to which Themo can utilize this ability. It's important to note that the higher the Schedule Limit, the greater the potential savings. However, it's critical to ensure that the Schedule Limit is not set higher than the Safety temperature to avoid any safety concerns.

To modify the Schedule Limit of your device, navigate to the settings menu within the Themo app and select 'Schedule Limit'.

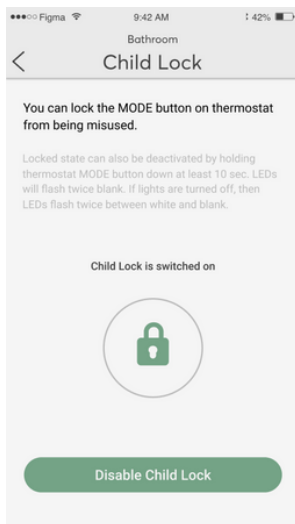


### 3.1.5 Child Lock

We understand that safety and convenience are top priorities for our customers. That's why we've included a Child Lock feature in Themo T700DIN, which allows you to disable the physical buttons of the device.

To enable or disable the Child Lock on your device, navigate to the settings menu within the Themo app and select 'Child Lock'.

The Child Lock feature can also be disabled by pressing and holding the Mode button for approximately 12 seconds.



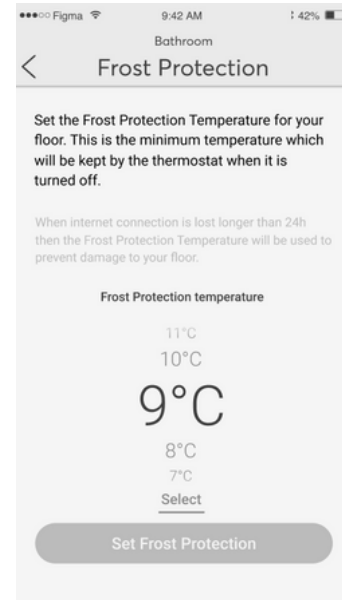
### 3.1.6 Frost Protection

Themo T700DIN has a built-in Frost Protection mode to ensure that your heating system does not freeze when turned OFF or during potential connection difficulties.

When Themo is in OFF mode, it will turn the heating ON when temperature falls below frost protection temperature (when enabled).

In the event that Themo T700DIN loses its Wi-Fi connection for over 24 hours, the Frost Protection mode will automatically activate. This mode maintains the temperature at the set value, ensuring that you're never left without sufficient heating.

To modify the Frost Protection temperature of your device, navigate to the settings menu within the Themo app and select 'Frost Protection'.



### 3.2 Thermostat Operating Modes

Themo T700DIN Thermostat has three different operating modes that you can choose from based on your preferences and needs. These modes are:

#### Smart Schedule (SLS)

Themo T700's Smart Schedule mode allows you to set a weekly program and optimize energy consumption by taking advantage of price optimization. To take advantage of this mode, you must connect your thermostat to a Wi-Fi network.

In the event that Themo T700DIN loses its Wi-Fi connection for more than 24 hours, the thermostat will maintain the Frost Protection temperature (if activated by the user). Temporary disconnections (less than 24 hours) from the Wi-Fi network will not affect the operation of Smart Schedule mode.

## Manual mode (MAN)

Themo T700DIN's Manual mode functions like a standard thermostat, keeping the set temperature constant. You can adjust the temperature settings either physically from the thermostat or through the application. Manual mode does not require an internet connection to operate, except for remote control. Unlike the Smart Schedule mode, Manual mode does not use the smart algorithm to optimize savings.

## Off mode (OFF)

In the Off mode, Themo T700DIN maintains the Frost Protection temperature that you can adjust between 5 and 22 degrees from the application. Off mode does not require an internet connection to work.

### 3.2.1 Changing the operating mode:

On the mobile app:

- To change from SLS-mode, tap the arrow below "Current Schedule" and select your desired mode.
- To exit Manual mode, tap "End manual control".
- To exit Off mode, tap "Turn on heating".

Using the physical Mode button:

- Ensure that Child Lock is disabled.
- Press the Mode button to switch between operating modes (SLS->MAN->OFF).

For more information, visit our Knowledge base at

<https://support.themo.io/en/support/solutions>

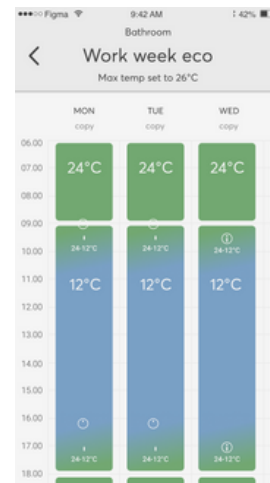
## 3.3 Creating Smart Schedules

To create a customized Smart Schedule for your Themo device, simply select the device and click on "Current Schedule". From there, click on "Add New Schedule" and tailor the schedule to fit your specific needs and the characteristics of the room. Alternatively, you can choose one of our pre-built schedules.

Please note that Themo will start pre-heating your floor in advance of the scheduled time in order to reach the set temperature on time. Themo can actually heat your floor up to the Schedule Limit if it calculates this to be more cost-efficient. If you want to maximize your savings, consider raising the Schedule Limit for your device.

For more information, visit our Knowledge base at

<https://support.themo.io/en/support/solutions>



### 3.3.1 How should a Themo Thermostat be scheduled?

Themo is designed to achieve the user-selected temperature at the scheduled time, and it starts heating in advance to accomplish this. Therefore, it is only important to create schedules that ensure a comfortable indoor temperature at selected times. Themo's optimization algorithm will take care of the rest!

### 3.3.2 How can I maximize savings?

When building schedules, it is important to prioritize living comfort. Themo's smart algorithm will follow your schedule in the most cost-efficient manner, so there is no need for the user to worry about optimization. However, if you want to further maximize your savings, you can give Themo more leeway by increasing the schedule limit or reducing the temperature set points.

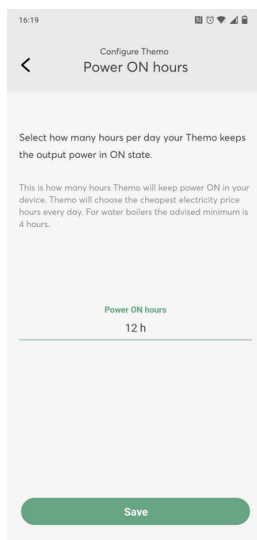
## 4. Price Switch Mode

### 4.1 Functions

#### 4.1.1 Power ON hours

Select the device and navigate to the settings menu, which is represented by a gear wheel icon located in the top right-hand corner of the screen. Once there, choose 'Power ON hours'.

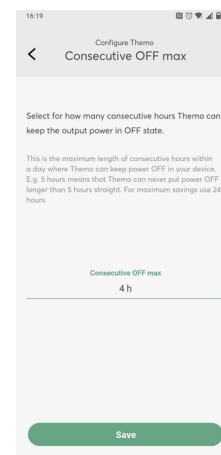
This selection specifies the number of hours per day that the relay to the heating device should be in on state. In Price Switch mode, Themo will select the cheapest hours that fit the user-defined parameters for heating. It is important to note that the relay will remain on for the selected duration, regardless of whether the heating device is actively consuming energy or not.



#### 4.1.2 Consecutive OFF max

Select the device and navigate to the settings menu, which is represented by a gear wheel icon located in the top right-hand corner of the screen. Once there, choose 'Consecutive OFF max'.

This setting determines the maximum consecutive hours that the heating device can remain inactive. Once this time limit is reached, Themo will activate the heating device automatically, enabling it to start heating again.



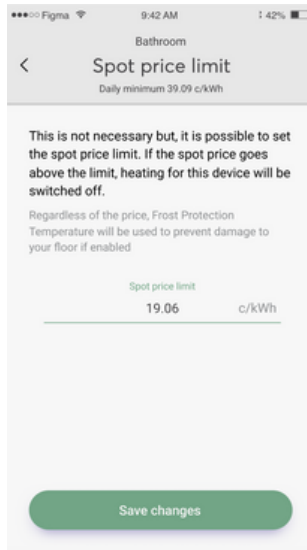
#### 4.1.3 Spot Price Limit

Select the device and navigate to the settings menu, which is represented by a gear wheel icon located in the top right-hand corner of the screen. Once there, choose 'Spot Price Limit'.

This feature allows Themo to automatically stop heating if the hourly Spot price exceeds the limit you've set. It's important to note that this feature is entirely optional and can be enabled or disabled based on your personal preference.

In general, there is no need to use the Spot Price Limit feature when using Price Switch. This is because the device is designed to automatically select the cheapest possible hours that meet your specified parameters.



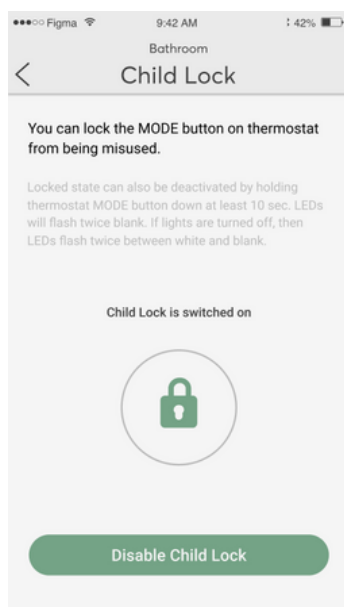


#### 4.1.4 Child Lock

We understand that safety and convenience are top priorities for our customers. That's why we've included a Child Lock feature in Themo T700DIN, which allows you to disable the physical buttons of the device.

To enable or disable the Child Lock on your device, navigate to the settings menu within the Themo app and select 'Child Lock'

The Child Lock feature can also be disabled by pressing and holding the Mode button for approximately 12 seconds.



## 4.2 Price Switch Operating Modes

Themo T700DIN Price Switch has three different operating modes that you can choose from based on your preferences and needs. These modes are:

### Price Switch (PS)

Price Switch mode allows you to specify the number of hours per day that Themo should turn power on to your device, as well as the maximum duration that it can remain inactive. By using these values, along with your electricity contract details, Price Switch selects the cheapest hours of the day for your device to consume energy. To take advantage of this mode, you must connect your device to a Wi-Fi network. In the event that Themo T700DIN loses its Wi-Fi connection for more than 24 hours, it will automatically turn on its relay, ensuring that power is available at all times. Temporary disconnections (less than 24 hours) from the Wi-Fi network will not affect the operation of Price Switch mode.

### ON mode (ON)

When operating in ON mode, Themo Price Switch will continuously maintain its relay on, ensuring that power is always on for your device. In this mode, Themo will not take electricity prices into account. ON mode does not require an internet connection to operate, except for remote control.

### OFF mode (OFF)

When operating in OFF mode, Themo Price Switch will continuously maintain its relay off, ensuring that no electricity is consumed and power is off in your device. OFF mode does not require an internet connection to work.

#### 4.2.1 Changing the operating mode:

Using the physical Mode button:

- Ensure that Child Lock is disabled.
- Press the Mode button to switch between operating modes (PS->ON->OFF).

#### 4.3 Creating the electricity price program

To determine the heating program for Price Switch, simply select the device and click on "Settings". From there, you can select "Power ON hours" to specify the number of hours per day that Price Switch should power on to your device. Next, you can set the "Consecutive OFF max" parameter to specify the maximum duration that your device can remain inactive between power on cycles. This will allow you to customise the Price Switch program according to your specific needs and preferences.

If you need to turn ON/OFF your device by certain electricity price, insert that price to Spot Price Limit and put Power ON hours to 24h.

For more information, visit our Knowledge base at  
<https://support.themo.io/en/support/solutions>

### 5. Using Themo T700DIN manually

Themo T700DIN can also be controlled manually using its physical buttons.

Here's how:

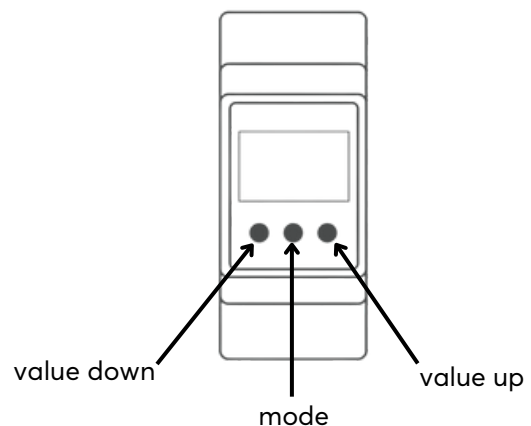
- Disabling Child Lock: Press and hold the Mode button for about 12 seconds.
- Changing operating modes: Press the Mode button once to cycle through the available modes.

#### Adjusting manual temperature (only in thermostat mode):

- First, choose manual mode.
- Then, press the button on the right to increase temperature set point.
- Press the button on the left to decrease temperature set point.

#### Resetting Themo:

- First, choose OFF mode.
- Then, press and hold the Mode button for about 15 seconds until the word 'RESET' is shown on the screen.
- Themo will reset and enter configuration mode.
- You'll know Themo is in configuration mode when the text 'CONFIG' is shown on the screen.



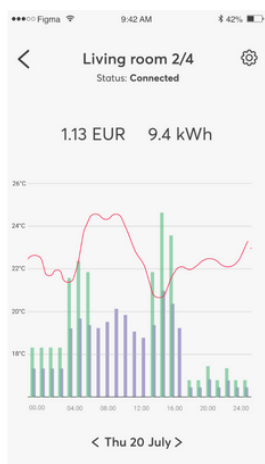
For more information, visit our Knowledge base at  
<https://support.themo.io/en/support/solutions>

## 6. Following energy consumption

To access the latest consumption data of your Themo device, simply select the device on your mobile app and tap on the Consumption Graph icon located at the lower right corner.

You can navigate between days using the arrows at the bottom of the screen. The red line represents the floor or air temperature (depending on sensor selection), while purple bars indicate the electricity price, and green bars indicate the energy consumption.

Please note that consumption data is only available for the past two weeks to ensure the optimal functionality of our servers.



NB! As the Themo T700DIN typically does not directly control heating, but instead uses a separate relay, the consumption data displayed in Price Switch mode may not be entirely accurate. The consumption data presented in this mode is calculated based on the ON time of the relay and the power output of the heater. However, as the energy consumption is usually controlled by the heating systems own internal thermostat, the actual amount of heating that occurs may be considerably less than what is indicated by the Themo in Price Switch mode.

## 7. Troubleshooting

Occasionally, you may encounter issues with your Themo device. Since some problems may resolve on their own, such as temporary internet connectivity issues, it is generally recommended to wait and observe before taking any action.

If the issue persists for an extended period, typically over 12-24 hours, you may need to take further action to resolve it.

### 7.1 Connection issues

If you are experiencing connection issues with your Themo device, there are several steps you can take to resolve the problem:

First, ensure that your Themo device is receiving power and is functioning properly. To do so, please check the device screen and observe its response to button presses.

Next, try restarting your Wi-Fi router to see if this resolves the issue. Also, make sure your Themo receives strong enough Wi-Fi signal by moving the Wi-Fi router closer to Themo. Finally, make sure that your router's Wi-Fi signal is set to the 2.4GHz frequency.

If the problem persists, try restarting the Themo device as described in section 7.2.

### 7.2 Power Restart

If you experience issues with your Themo device, restarting it can often help resolve the problem.

Follow these simple steps to restart your device:

1. Turn off the power from your circuit breaker box.
2. Wait for 10 seconds until Themo powers off completely.
3. Turn the power back on from the circuit breaker box.

Please note that after restarting the device, it may take a few minutes for Themo to connect to our servers.

### 7.3. Wi-Fi Reset and Re-configuration

If you are experiencing persistent issues with your Themo device, resetting it to its factory settings may help resolve the problem.

Follow these steps to reset your device:

1. Disable the Child Lock either via the mobile app or physically on the device.
2. Switch the device to Off-mode.
3. Press and hold the Mode button for about 15 seconds until you see the text 'RESET' on the screen. This will reset Themo to its factory settings and it will enter configuration mode, indicated the word 'CONFIG' on the screen.
4. Re-configure the device.
5. Once re-configured, your device should be back to normal operation.

For more information, visit our Knowledge base at <https://support.themo.io/en/support/solutions>

### 7.4. RC Snubber issue

Inductive loads such as relays, contactors, fans, and motors are capable of generating voltage spikes when switching off the load, resulting in potential harm to Themo and compromised reliability. This issue typically manifests in Themo remaining online, but failing to respond to button presses, and resulting in inconsistent or interrupted heating.

To address this issue, an RC Snubber must be installed over the load to reduce these voltage spikes. The RC snubber is placed between the phase and neutral of the load (L Load and N Load on Themo, A1 and A2 on the contactor).

It is worth noting that "silent" contactors, which typically feature similar electronics, are less likely to pose problems. However, there may be exceptions. Hager ESC/ETC425S, ESC/ETC225S, and ABB ESB16-20N contactors have undergone testing and have been found to function without requiring an RC snubber.

We are currently working towards pre-installing equivalent electronics in future batches of the Themo T700DIN to address this issue.

## 8. Other

### 8.1. Changing the power value of your device

Themo is equipped with a built-in feature to measure the power of your heating element during the initial power-up. This information is crucial in computing consumption data (Power x relay ON time). However, there are instances when the Power value may be inaccurate due to certain factors, including a 10% margin of error in measurements and the presence of a relay or contactor between Themo and the heater element, which often results in a calculated power value of 100W.

If you encounter an incorrect power value, please reach out to our customer support team for assistance. To help expedite the process, please provide the name of the device and the desired power value during your initial contact with us.



## 8.2. Deleting a device

To delete a device from your account, please follow these steps:

- Open your mobile app and select the device you wish to remove.
- Access the Settings menu by tapping the gear wheel icon in the top-right corner of the screen.
- Select "Configure Device," then choose "Delete Device."
- Enter the name of the device in the field provided. Please note that the name must be entered exactly as it appears on the device.
- Finally, tap "Delete Device" to remove it from your account.

## 8.3. Deleting a Themo account

To delete your Themo account, contact our customer support.

## 8.4 FAQ

Our knowledge base is a valuable resource for any inquiries related to Themo. We have compiled a wide range of useful articles and guides to help you get the most out of your device. To access our knowledge base and find answers to your questions, please visit our website at

<https://support.themo.io/fi/support/solutions>.

## 9. Limited Warranty

In accordance with the Consumer Protection Act, any products purchased through [www.themo.io](http://www.themo.io) or authorized resellers are eligible for a 2-year limited warranty. Proper use and installation of the product must adhere to the instructions outlined in this guide. Any manufacturing defects traceable to the manufacturer are covered under warranty. It should be noted that the warranty is rendered void if the product has been damaged or used improperly.