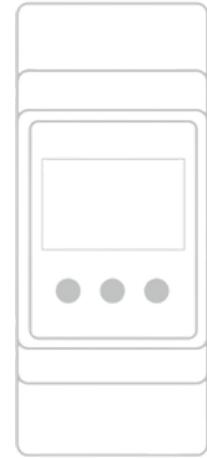


Installation Manual Themo T700DIN



NB!

Do not attach temperature sensor during installation and configuration phase if Themo is to be used in **Price Switch** mode (see below).

For connecting higher loads than **3000W** it is recommended to use contactor (see below).

When using a non-silent contactor, it might be required to use **RC snubber** (see below).

Table of Contents

1. Technical Specifications	4
2. Application and Functions	5
2.1. Thermostat	6
2.2. Price Switch	7
3. Safety Instructions	8-9
4. Wiring Interface	10
4.1. Power Supply	11
4.2. Relay	12
4.3. Relay Rated Load	13
4.4. Temperature Sensor	14
4.5. Contactor, Fans, Motors and Other Inductive Loads	15
5. Configuration	16
6. Warranty	17
7. Disposal Instructions	18

Manufacturer

Smart Load Solutions OÜ, Pärnu mnt 158/1, 11317, Tallinn, Estonia

EU Declaration of Conformity

The product is in conformity with the provisions of the following EC Directives, including all amendments, and with national legislation implementing these directives:

Low Voltage Directive 2014/35/EC

EMC Directive 2014/35/EC

The following harmonized standards were applied:

EMC EN 55024:2011

EMC EN 55022:2011

Safety IEC 60950-1

Said object complies with Directive 2011/65/EC (RoHS 2) Restriction of Hazardous Substances in Electrical and Electronic Equipment

1. Technical Specifications

<p>Operation voltage: 220-240 V, 50 Hz</p>	<p>IP class: 21</p>	<p>Buttons: 3x Microswitch</p>
<p>Standby power consumption: Max 1,8 W</p>	<p>Mounting: DIN rail</p>	<p>Colour: Light grey and black</p>
<p>Relay: Rated load 16 A at 250 VAC (24 VDC), manufacturer maximum recommended rated load 12 A at 250 VAC (24 VDC). For higher loads the use of contactor is recommended.</p>	<p>Internet connection: WiFi 802.11 b/g/n 2.4GHZ-2.5GHZ</p>	<p>Dimensions: W35 x L90 x H60 mm</p>
<p>Supported sensors:</p> <ul style="list-style-type: none"> • NTC 6,8 kOhm @ 25°C • NTC 10 kOhm @ 25°C • NTC 12 kOhm @ 25°C • NTC 15 kOhm @ 25°C • NTC 33 kOhm @ 25°C • NTC 47 kOhm @ 25°C 	<p>OPERATING RESTRICTIONS Ambient Temperature: 0°C to +40°C</p>	<p>Protection class: Class II</p>
<p>Temperature range: 0 - 45°C</p>	<p>Humidity: Max 85% relative humidity</p>	<p>Material: Polycarbonate</p>
<p>Frost protection: 5 - 12 °C (default 5 °C)</p>		<p>Weight: 150 g</p>

2. Applications and Functions

Themo T700DIN is a DIN mounted intelligent thermostat and electricity price switch.

Themo T700DIN has a built-in Wi-Fi chip that can be connected with your home network. Themo has been developed for mobile phone and tablet use. The settings are most easily controlled using the Themo mobile app. It is available for iOS and Android. The app is free.

Themo T700DIN can be used in two primary application modes:

1. **Thermostat**
2. **Price Switch**

2.1. Thermostat

In **Thermostat** mode Themo T700DIN controls and follows the temperature input of the heating system. In the **Thermostat** mode the user controls temperature setpoint values and Themo T700DIN optimises the heating system based on user setpoints. Using the **Thermostat** mode **requires attaching a temperature sensor**.

2.2 Price Switch

In **Price Switch** mode Themo T700DIN controls the relay output only based on electricity spot prices and user set parameters. In **Price Switch** mode Themo T700DIN turns ON the power in its relay output during the cheapest electricity hours based on user parameters. However, in **Price Switch** mode the Themo T700DIN does not follow temperature sensor input. Therefore, **it is not required to attach a temperature sensor** if the device is to be used in **Price Switch** mode.

3. Safety Instructions

The installation of Themo T700DIN must be carried out by an authorised and qualified installer according to local regulations;

Make sure the main supply to Themo T700DIN is turned off before installation!

Important: 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.

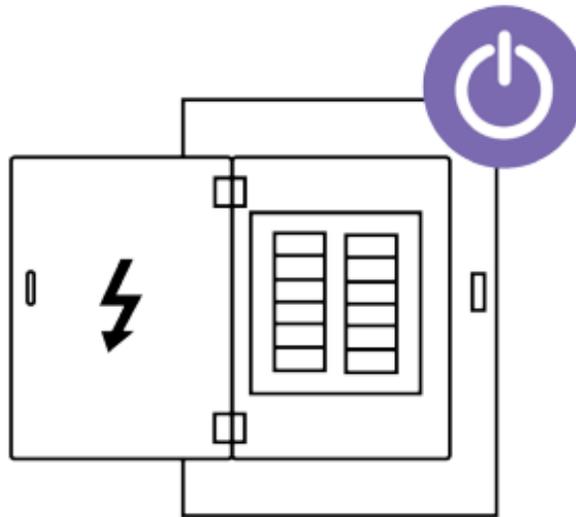
Please note the following:

- Themo T700DIN must be connected to a power supply via all-pole disconnection switch;
- Always connect Themo T700DIN to continuous power supply;
- Do not expose Themo T700DIN to moisture, water, dust, and excessive heat;
- Children should be supervised to ensure that they do not play with Themo T700DIN;
- Cleaning and user maintenance should not be made by children without supervision;

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

4. Wiring Interface

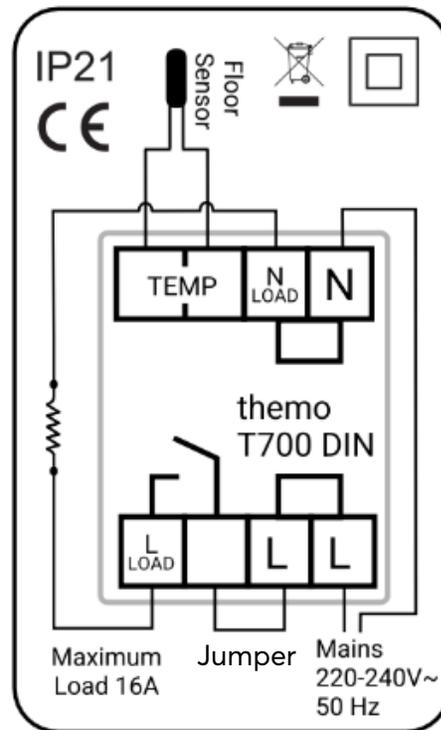
NB! Make sure the mains supply to Themo T700DIN is turned off before installation!



4.1. Power Supply

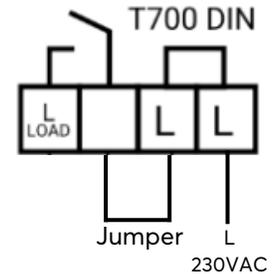
The electrical diagram on the side of the device shows the relay connection diagram. Connect Themo T700DIN according to the connection diagram.

Themo T700DIN main operation voltage is 230V.

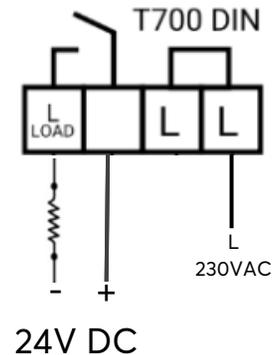


4.2. Relay

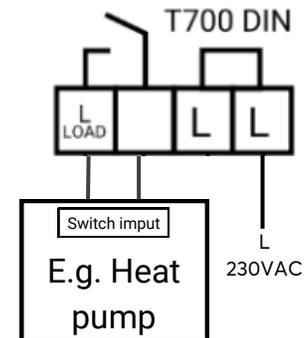
For 230V relay operation voltage use a jumper wire (included in the box). The jumper wire is to be connected into the two middle connection screws on the bottom connector.



For 24V (or other low voltage) relay operation voltage connect a power supply with the wanted voltage through two lower left connection screws on the bottom connector (see picture). Do not use jumper wire.



For dry contact relay operation use two lower left connection screws on the bottom connector (see picture). The output of Themo T700DIN is a dry contact. Do not use jumper wire



4.3. Relay Rated Load

The relay rated load of Themo T700DIN is 16 A at 250 VAC (24 VDC), **however, the manufacturer recommended maximum load is 12 A at 250 VAC (24 VDC).**

For controlling electrical loads higher than 3000W with Themo T700DIN it is recommended to use contactors.

If higher than 3000W load is connected to Themo T700DIN, it might be necessary to contact Themo support via support@themo.io as different Themo firmware versions might have built in safety features that do not allow Themo to operate correctly with high electrical loads.

4.4. Temperature Sensor

To use Themo T700DIN in **Thermostat** mode, it is required to attach the temperature sensor before the configuration phase in the mobile application.

To use Themo T700DIN in **Price Switch** mode, it is required that the temperature sensor **is NOT attached** during the configuration phase in the mobile application.

NB! With **Price Switch** temperature input will not be used to control Themo. Thus, it is not allowed to use Themo T700DIN **Price Switch** mode to control any heating device that does not have its own internal thermostat to protect against over heating and fire hazard!

4.5. Contactor, Fans, Motors and Other Inductive Loads

It is recommended to use a contactor if the electrical load connected to Themo exceeds 3000W.

However, contactors, relays, fans, motors and other inductive loads may produce voltage spikes when turning off the load that are strong enough to harm Themo and cause unreliability. An **RC Snubber** is required to be installed over the load to reduce these spikes. The RC snubber is installed between the phase and neutral of the load (L Load and N Load on Themo or A1 and A2 on contactor).

So called "silent" contactors are less likely to cause problems, as they have similar electronics embedded.

Hager ESC/ETC425S; ESC/ETC225S and ABB ESB16-20N contactors have been tested to work without an RC snubber.

5. Configuration

Themo T700DIN must be set up properly through the mobile app to work safely. Download Themo mobile app to create a free account and follow step-by-step instructions on screen to set up your device. Until set up is done, some functions of Themo T700DIN might not work properly.



Themo



6. Warranty

According to Consumer Protection Act all products purchased from www.themo.io or from respective resellers will have 2-year limited warranty. When using or installing the product, it is required to follow instructions in this guide. Only manufacturing defects which can be traced back to the manufacturer will be under warranty.

Warranty is void when the product has been damaged or used incorrectly.

7. Disposal Instructions

Please consider the environment and recycle your old thermostat.

