User Manual

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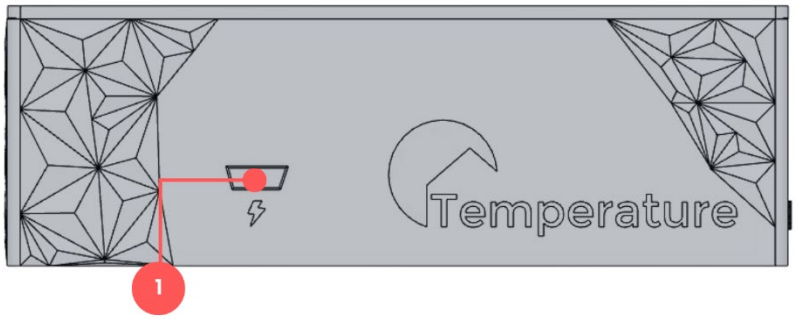
Temperature measuring system

The temperature measurement system of ecoSense allows temperature measurements in a very short time in fast time. These data are stored in a database and are then accessible to the user. accessible to the user. In the following, information about the system, safety aspects, specifications and the use of the system are presented, specifications and the use of the system.

First steps

In this subchapter you will learn about the structure of the components of the temperature measurement system. Each relevant element is described so that it can be used correctly.

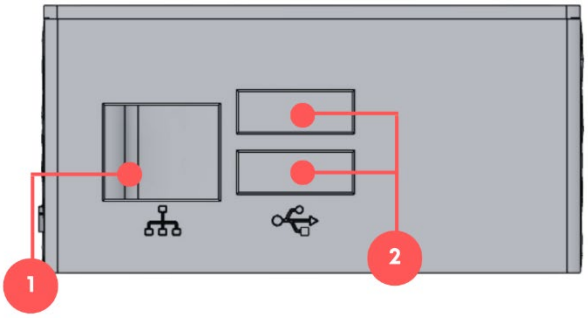
Front view - microprocessor unit



1 - The micro-USB power input is used to supply the Raspberry Pi with enough power to turn it on. enough power to turn it on and then to get power for the temperature sensors. the temperature sensors. The required input is 5.1V/3.0A.

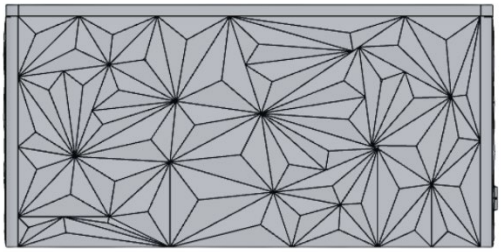
On the other parts of the front of the microprocessor unit there is also a text with the ecoSense name. the ecoSense logo and the temperature text describing the purpose of the system. purpose of the system. On the side there are also some geometrical shapes with reliefs for aesthetic purposes.

Side view - microprocessor unit



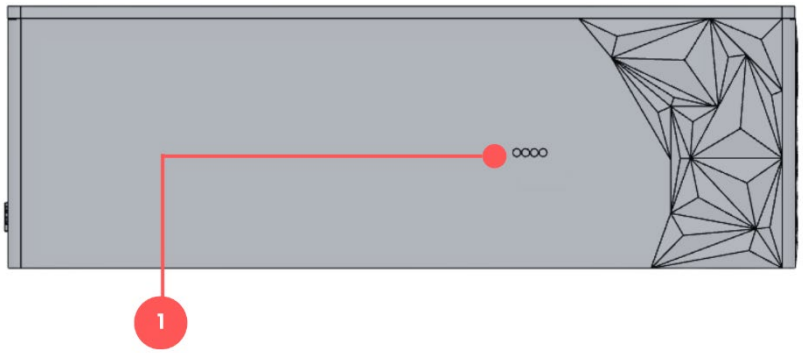
1 - The LAN port is used to connect the device to the Internet. The connection to the Internet is very important because it is used to transfer data to the database. database and then to present the data and graphics in the chatbot or on the website. the website.

2 - The two USB ports are used when the user wants to transfer data to the system. data to the system or if he wants to connect to the Internet via a WIFI dongle. connection to the Internet. This is another possibility, to connect to the Internet.



The left part of the microprocessor building has no functional elements, but only geometric elements with relief, which have an aesthetic function for the building.

Back view - microprocessor unit



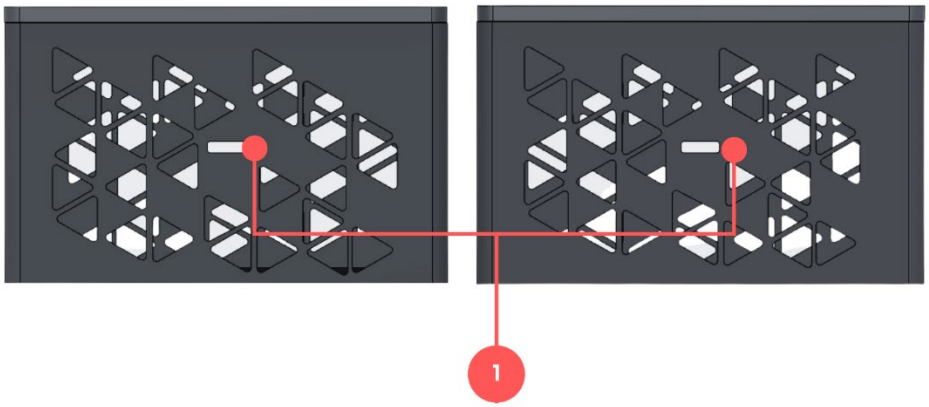
1 - The port through which 4 wires come out. These wires are used for Receive data and send data to the temperature sensors. They are also used to supply power to these sensors.

Front and back view - Temperature sensor

On the front there is the logo of the ecoSense system and an engraved text describing the function of the box.

On the back side of the temperature sensor box there are some geometrical on the back side of the temperature sensor box there are some geometric shapes which provide sufficient ventilation of the sensor. In this way we obtain accurate and real temperature data.

Side view - Temperature sensor



1 - The connectors are used to guide the wires inside the box to connect them to the temperature sensor. In this way, the data is transmitted, and the sensors are supplied with power.

On the whole surface of the sides of the sensor box there are many spaces, which are used for ventilation, so that we can get the most accurate data from the temperature sensor.

Power supply of the temperature measuring system

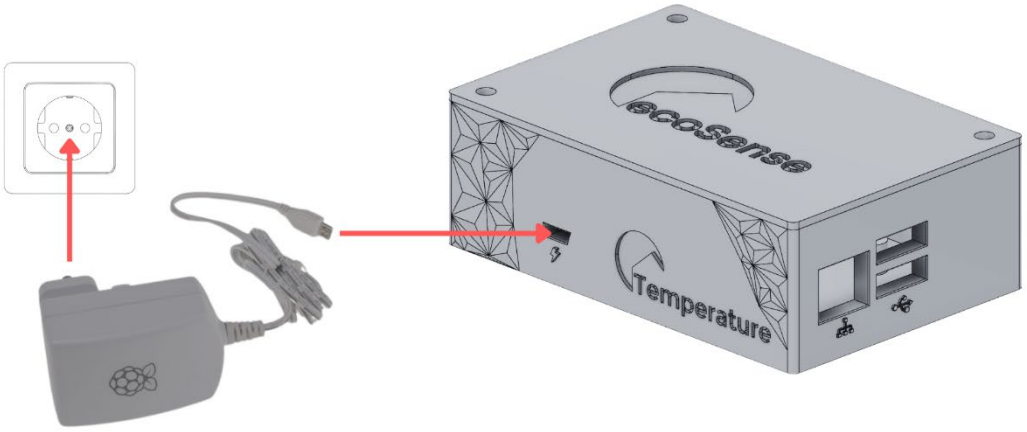
To supply power to the temperature measurement system, we need to perform the following steps:

-Plug in the micro-USB connector of the microprocessor box of the adapter.

-Check if the connection is properly established.

-Plug the adapter plug into the power outlet.

-To turn off the system, simply unplug the adapter from the power outlet.



To ensure the functionality of the system, the ecoSense adapter must be used, otherwise the functionality is not guaranteed.

It is also important that the connection is made correctly, according to the described form, otherwise serious problems can occur in the system.

Product specifications

The specifications of the product, i.e., the temperature measurement system, are as follows:

Element	Specification
CPU	BCM2837B0(1,4 GHz)
RAM	1GB
Memory	microSD(8GB)
Operating environment	-40°C bis 85°C
DC nominal values	Input: 5,1V
	Output: 5V or 3,3V
Temperature Sensor	Microchip MCP9808
Temperature sensor Operating voltage range	2,7V bis 5,5V
Temperature sensor Operating current	200 µA
Temperature measuring range	-40°C to +125°C
Bus system	Inter-Integrated Circuit

Safety precautions

Attention, before you put the temperature measuring system into operation, read this chapter. ecoSense-Temperature can be used by persons 12 years and older.

Persons who have no experience in using such a system and who have limited motor, sensory and mental abilities can also use it. have limited motor, sensory, and mental abilities, have the possibility to use this device. the possibility to use this device.

-The device is intended for indoor use only.

-There is a risk of electric shock.

-Do not consume any parts of the system, their consumption may cause poisoning and serious damage to health.

-Do not pour water on the device, as this could damage the device and yourself. and yourself.

-Make sure that all external cables of the system are insulated.

-Do not open the inside of the unit as there is a risk of electric shock.

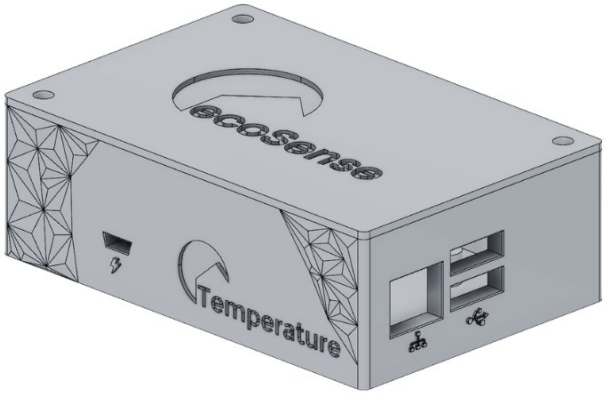
-Do not open the unit until you are sure that you have unplugged the power cord.

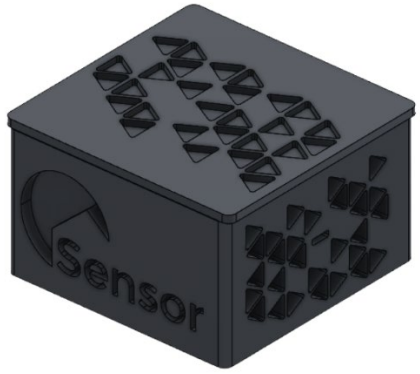
If you live in areas where there are recurring problems with the quality of the power supply, you should equip the device with high or low voltage protection.

Do not use unauthorized adapters for the system. Before Connecting Before connecting to the mains, check carefully that the adapter is the one supplied with the system before connecting it to the power supply.

List of components

The temperature measurement system consists of the following components:





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Commissioning of the system

To put the temperature measurement system into operation, you must follow the steps below:

-First, check that you have all the necessary system components.

-Check for obvious damage to the system parts that could affect the system's functionality.

-Check whether the installed cables, i.e., the cables connecting the sensors to each other or to the data center, are OK at first sight.

-Check if you are connected to the Internet in your environment.

-Carefully plug the adapter into the socket and then the micro-USB into the corresponding port of the micro processing unit.

-Connect to the Internet with a LAN cable by plugging it into the LAN port of the system. into the LAN port of the system, or via a WIFI dongle.

-If everything worked, the system should work. To check if the system is working if the system is working, look for the temperature data on the website https://ecosense.htl-projekt.com/login.php or in the ecoSense system chatbot.

-If you see that there is no temperature data, check the connections again. connections or other obvious problems.

-If you cannot find an error, contact ecoSense via the contact page: https://ecosense.htl-projekt.com/contact.html.

Power measurement device

A power measurement system is a product that measures efficiency and how much a device consumes power. The system is easy to use, you just need to plug the device into a power outlet and then plug the device you want to measure there too.

-The devices that can be measured are devices that do not operate at more than 240V.

-After the device is plugged in, the system is automatically started, and data is immediately shown on the pointer (monitor).Immediate data are shown at the pointer (monitor). The monitor shows only the kW/h. To get more information, it is possible to get the information through a cell phone with the help of a chatbot. This information is: voltage, current, frequency and how much money the device consumes per month.

-If the device you are measuring is not working optimally, a message is automatically sent to the mobile phone.

-CAUTION: Do not open the housing. The power measurement system works with high voltages and can be dangerous to life.

-Set up the meter in a dry environment only.

-Do not connect the meter to a 3-phase 400V AC power supply.

-Repairs should only be carried out by qualified personnel.

-Do not drop the meter or subject it to physical shocks, as there is a high-pressure fluid inside. Do not drop the meter or subject it to physical shock, as there are high-precision components inside that may break.

Chatbot and visualization

To use the chatbot, the user must follow the instructions. The Instructions are presented in the following steps. Please make sure that you follow each step.

1. Create a Telegram account in the app store or on the website. In the Telegram app, you will see the steps to create an account. Please follow them correctly.

2. Open the Telegram app after the account is created and search for the @ecosensedemo bot.

3. click on the @ecosensedemo bot search you did earlier and open the chat.

4.After clicking on the chat, press Start.

5.After you click Start, a message will be sent to you.

6.Type "hi" to test if the bot is working, and if the bot responds, it means it is working. If the bot does not respond, it means that it is not working.

7.If the bot does not work, enter the /help or /contact command, to get a possible solution or to contact the creator directly.

8.If the bot is working properly, type the command /menu to get all possible chats and commands.

chat and commands to talk to the bot.

9.For any problem you encounter along the way, don't hesitate to contact the creator with a simple /contact command.