

# Efento iOS Mobile Application User Manual



Ver. 1.0.0

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## 1. Overview

Efento mobile application allows users to interact with all Efento sensors (configuration, reading the measurements). Mobile Application is available free of charge for iPhones in AppStore.

**Important! The iOS mobile application is still under development. It doesn't support all loggers' functions yet. We are constantly developing the application and adding support for the missing functions. Thank you for understanding!**

## 2. Current measurements and status

The application allows users to read the current measurements directly from loggers' memory and configure Efento devices (Bluetooth loggers and NB-IoT loggers). The application communicates with the devices over Bluetooth Low Energy, therefore it requires permission for Bluetooth communication.

### 2.1 Supported sensors

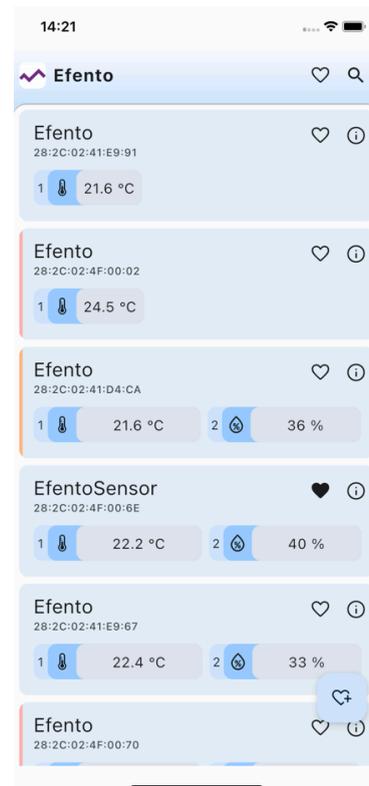
Application supports all types of Efento sensors, including: temperature (including sensors with an external probe and low or high temperature sensors), humidity, atmospheric pressure, high pressure, differential pressure, pulse counters, open / close, air quality, distance, flooding, soil moisture, motion, light intensity, current (4-20 mA), voltage (0-10 V)

### 2.2 Devices list

The application automatically detects all sensors with firmware version 6.x.x and newer within range of your phone / tablet. The list shows the names of the sensors, their serial numbers and their current measurement values for each measurement channel.

Additionally, on the list it is possible to check the basic device information using the 'i' button on the right and add the device to your favourites list by pressing the heart icon to easily sort the loggers based on their importance. To display the list of favourite sensors, press the heart icon in the lower right corner of the screen.

**Important!** In the case of loggers with software version 5.15 and below, it is necessary to manually add the sensor to the favourites list, otherwise they will not be displayed in the list of nearby devices. To do this, press the heart icon in the lower



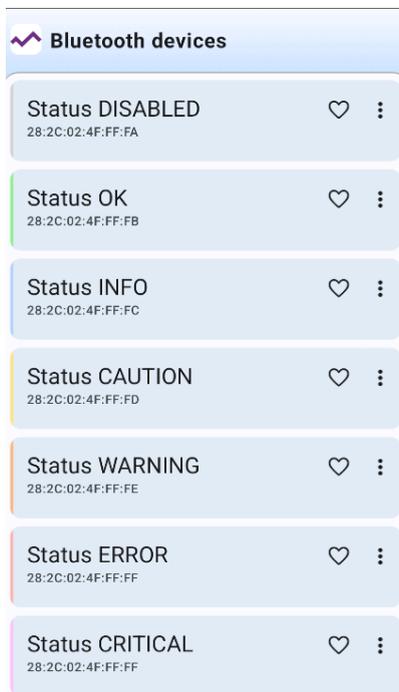
right corner of the screen, enter the MAC address of the device (located on the label on the device's enclosure) and save the changes by pressing the plus button.

## 2.3 Warnings

The application informs the user about any issues with the device and particular channel. The information about the device status is displayed on the list, as a coloured marker on the left edge of the device. The information about channel issues is displayed next to the channel measurement.

### 2.3.2 Device warnings

This group of warnings indicate issues with the device - errors, measurements out of range, low battery, etc.



- No marker - no notifications to display, the device works correctly
- Red marker - Error - one of the following issues: power supply error, memory error, measurement out of range / measurement error / measurement incomplete, synchronisation required (pulse counters only)
- Orange marker - Warning - no network connection, no communication with the server, power source disconnected, invalid cloud key (for communication with Efento Cloud)
- Yellow marker - Caution - the application is unable to connect to the device (unsupported logger's software version)

In order to get the details of the issue, tap the "i" icon on the right hand side.

### 2.3.1 Channel warnings

The second group of the warnings is associated with a particular channel and is used to indicate its status. The statuses may differ between different sensor types.

Sensor type	Possible statuses
Indoor Air Quality sensor	Colours represent the air quality measured by the device: <ul style="list-style-type: none"> <li>○ GOOD - green marker</li> <li>○ MODERATE - yellow marker</li> </ul>

	<ul style="list-style-type: none"> <li>○ SATISFACTORY - yellow marker</li> <li>○ UNHEALTHY - orange marker</li> <li>○ VERY_UNHEALTHY - red marker</li> <li>○ HAZARDOUS - purple marker</li> </ul>
Soil moisture sensor	Colours represent the moisture of the soil measured by the device: <ul style="list-style-type: none"> <li>○ SATURATED - blue marker</li> <li>○ WET - green marker</li> <li>○ VERY IRRIGATED - yellow marker</li> <li>○ IRRIGATED - orange marker</li> <li>○ DRY - red marker</li> </ul>
All sensor types that require calibration	Colours indicate the calibration status: <ul style="list-style-type: none"> <li>○ SENSOR NOT CALIBRATED - orange marker</li> <li>○ LOW ACCURACY - yellow marker</li> <li>○ HIGH ACCURACY - no marker</li> </ul>

## 2.4 Sensor configuration

From the list of the loggers select the one you want to configure and tap on it. The application will connect to the logger and you will be able to configure it. The number of possible settings depends on the type of the sensor ([BLE] or [NB-IoT]). Enter the settings menu by tapping gear icon in the upper right corner of the screen to:

- **[BLE / NB-IoT] Change the measurement period and / or clear the logger's memory** - select a new measurement period using the sliders and enter the PIN code (you will not be asked to enter the PIN code, if you have already entered the PIN code for this logger before). The application automatically calculates how many measurements will be stored in the logger's memory with the selected measurement period - this information is visible at the bottom of the screen. Save changes, logger memory will be cleared and a new measurement period will be set. By default, the measurement period is set to 5 minutes. For loggers, which measure physical / chemical values (e.g. temperature, humidity), the measurement will be taken with the set period. For pulse counters, the sensor will count the number of pulses in that particular period of time (e.g. if the measurement period is set to 60 minutes, the sensor will count the number of pulses in each 60 minutes window).
- **[BLE / NB-IoT] Change sensor name** - type new sensor name and tap Save to confirm.
- **[BLE / NB-IoT] Channel settings** - full support for calibration parameters available for your measurement type. The details of the calibration settings are included in the [Efento NB-IoT sensors user manual](#)

- **[BLE / NB-IoT] Bluetooth turn off time** - select the time after which Bluetooth interface will be automatically turned OFF or keep it always ON.
- **[BLE / NB-IoT] Restore default settings** - a function that allows you to restore the device's factory settings.
- **[NB-IoT] Transmission interval** - define how often the logger sends the data to the server over NB-IoT network
- **[NB-IoT] Server settings** - configuration of the server that will receive data from the NB-IoT device
- **[NB-IoT] APN configuration** - access point name configuration (automatic / manual)
- **[NB-IoT] PLMN code** - PLMN configuration (automatic / manual)
- **[NB-IoT] Trigger transmission** - immediately trigger the transmission to the server over NB-IoT network
- **[NB-IoT] Network status** - displays the full status of communication over the NB-IoT network
- **[NB-IoT] Troubleshooting** - in the troubleshooting mode, the device continuously communicates with the network and Efento Cloud for 300 seconds, refreshing the signal strength and connection parameters. This mode allows you to check whether the logger correctly logs into the network and whether the signal strength of the NB-IoT network is sufficient for the correct operation of the logger. Launching the troubleshooting mode is not required for the correct device configuration.

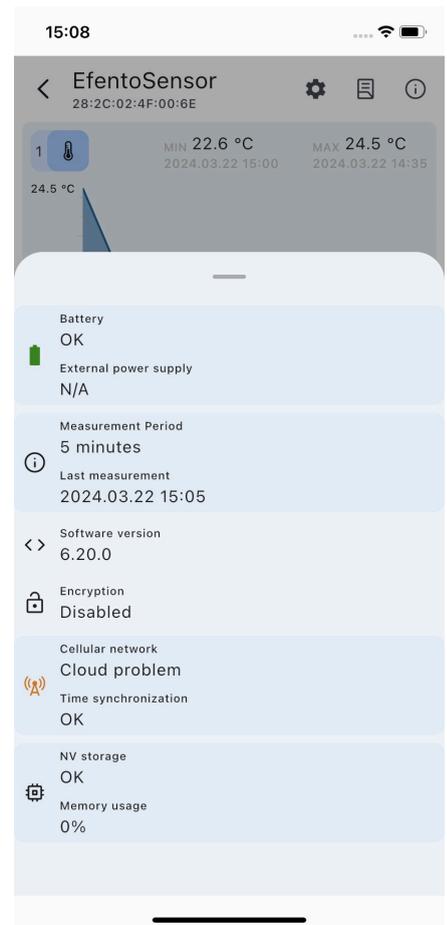
**In case of Efento NB-IoT sensors full device configuration is accessible from this menu. The configuration has been described in the [Efento NB-IoT sensors user manual](#)**

## 2.5 Reading data from the sensor memory

After connecting to the sensor and downloading the data you will see a screen with a summary of the measurements downloaded from the sensor's memory, presented in the form of a graph. Detailed information about the logger status can be found in the information tab, which can be accessed by pressing the 'i' icon in the upper right corner of the screen.

The information includes:

- Battery level and power supply status,
- Measurement period and last measurement time and date,
- Software version,
- Encryption status (enabled/disabled),
- Cellular network and time synchronisation status (only for NB-IoT devices)
- Memory status and usage in %.



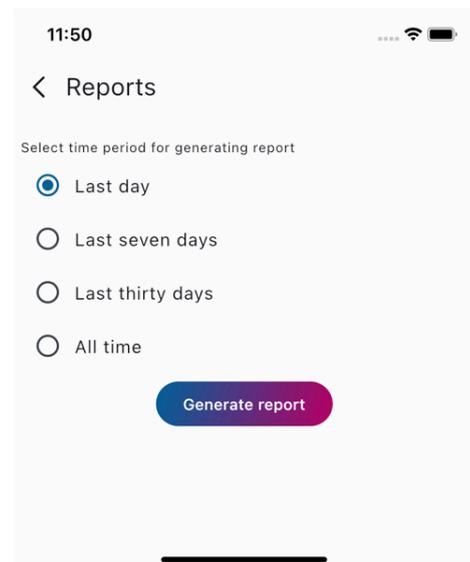
## 2.6 Charts

After connecting to the logger, a graph showing the collected data will be displayed. If the sensor measures more than one physical value, the graphs will be placed one below the other.



## 2.7 Exporting the data

To export the data, connect to the sensor and from the top menu select the export icon (middle icon from the upper right corner) and then choose a time period for generating the report. The report can be shared using any application installed on your phone - you can for instance send it by email, save it to Google Drive / AirDrop / Dropbox or print it using a printer connected via Bluetooth or WiFi. The data is exported in CSV format, which is supported by many popular data processing programs (Excel, Matlab, etc.).

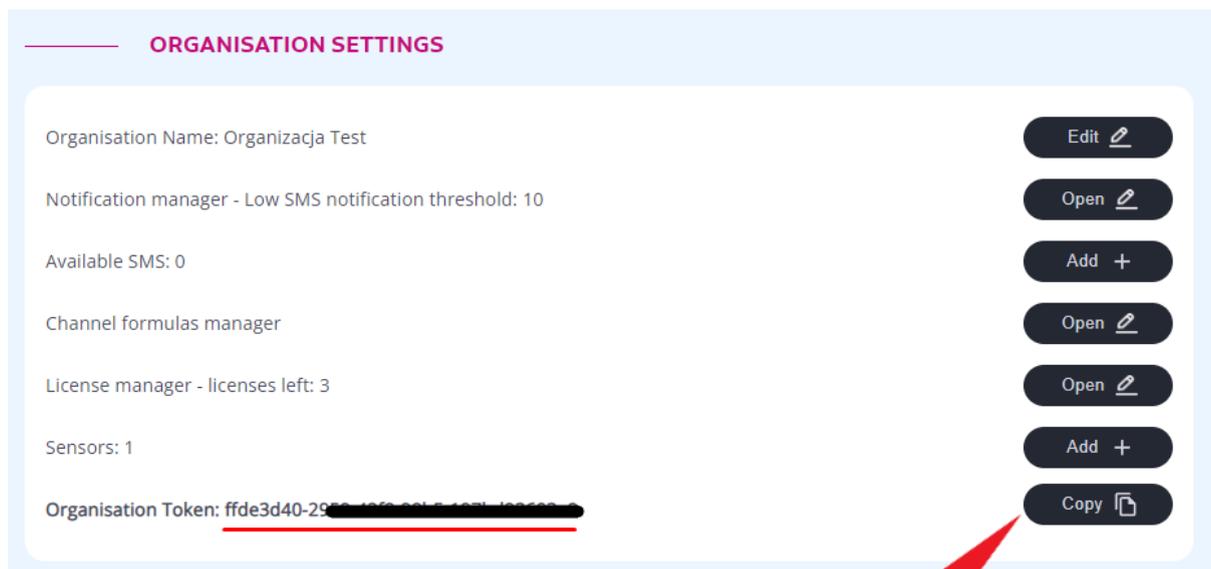


## 3. Configuration of the NB-IoT loggers to send the data to servers

### 3.1 Configuration of NB-IoT sensor with Efento Cloud

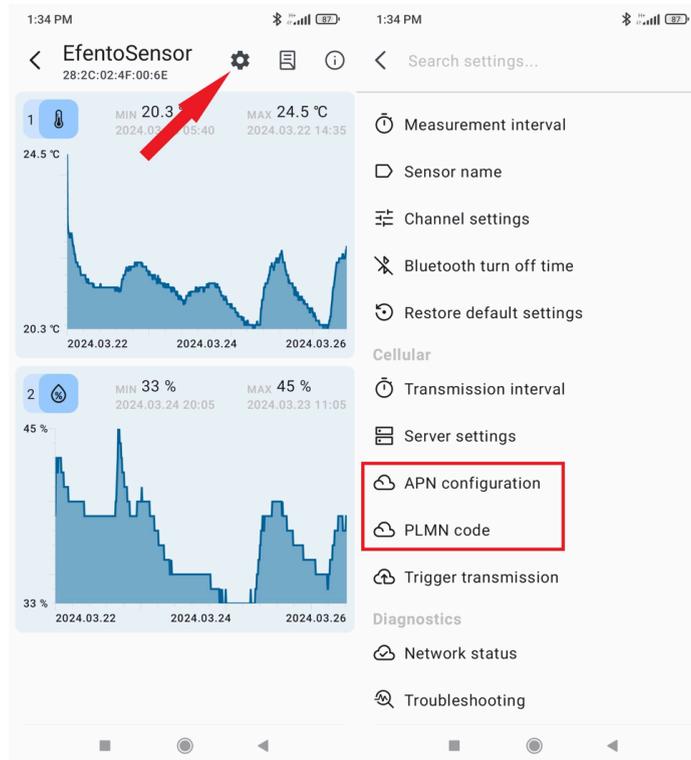
To configure the Efento NB-IoT logger to send the data to Efento Cloud follow the steps below.

1. Create an Efento Cloud account at [cloud.efento.io](https://cloud.efento.io) and add a licence key to your organisation (for details please refer to 'Registration and logging in to Efento Cloud' and 'Licence manager' chapters of [Efento Cloud - User manual](#)) If you already have the account and if you have available licences, just log in.
2. Copy the organisation token from the *Organisation settings* tab.

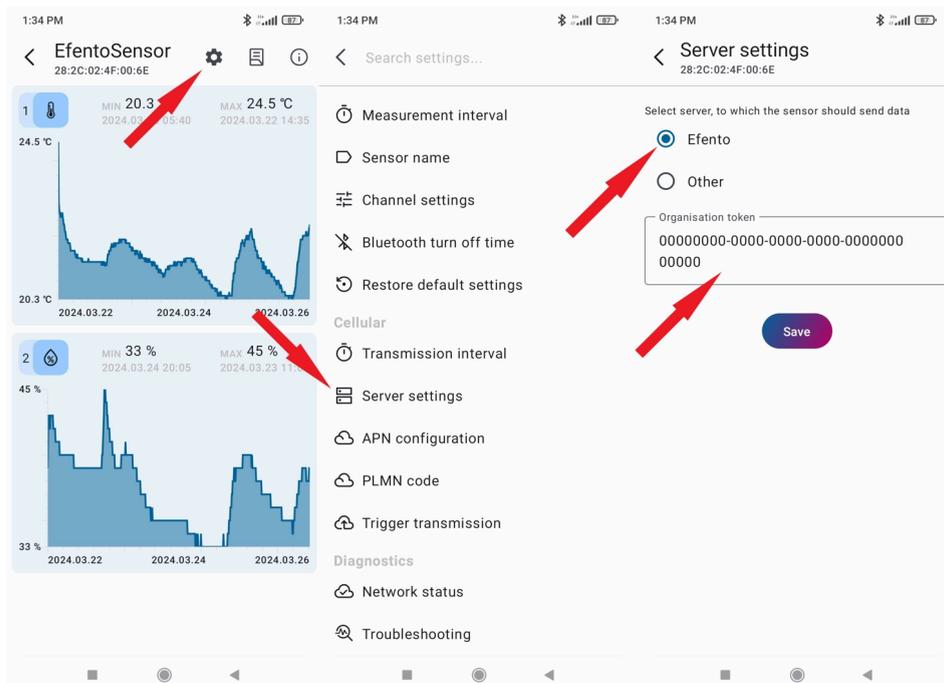


3. Connect to the logger via the Efento mobile app and go to its settings by pressing the gear icon in the upper right corner.

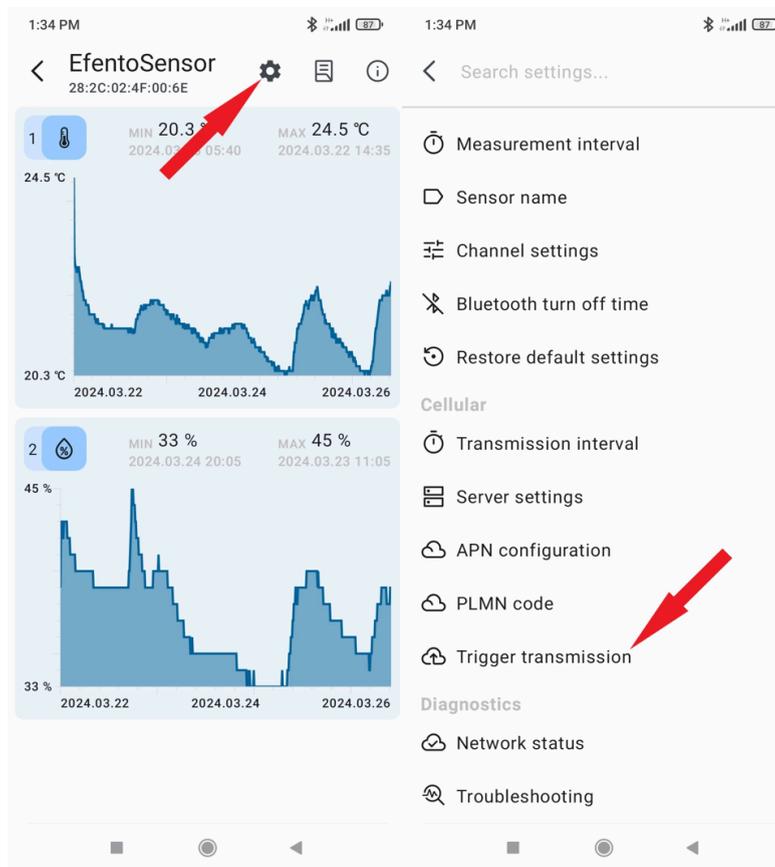
- Set APN and PLMN. If you use a SIM card provided by Efento, the APN and PLMN should be set to 'Auto'. If you use a different SIM card, check the APN and PLMN settings with your provider.



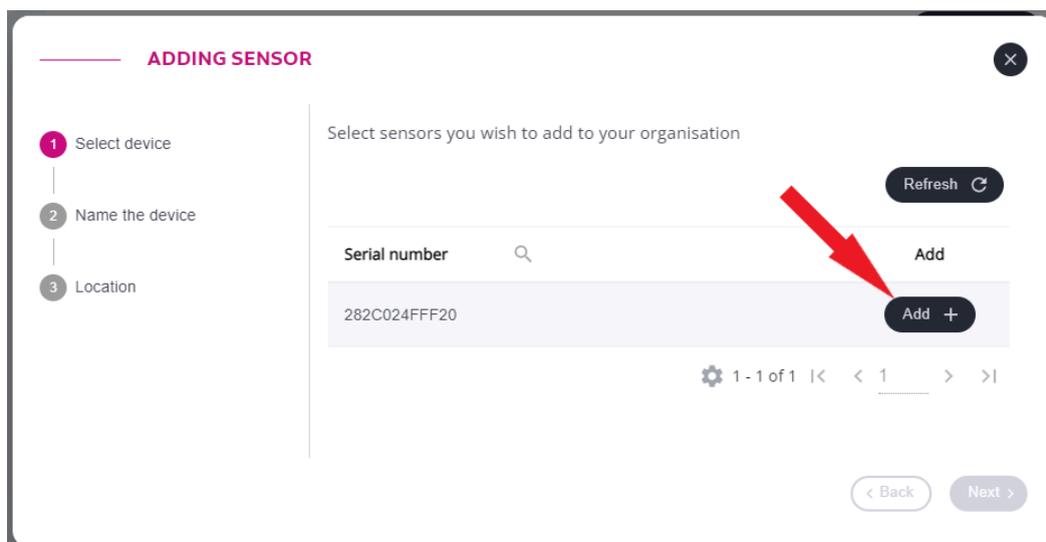
- Go to 'Server settings', select 'Efento' server and enter your organisation token from Efento Cloud *Organisation settings*.



6. Trigger the transmission by going to the device settings (gear icon in the upper right corner) -> Trigger the transmission. The device should register and communicate with the server in 5 minutes.



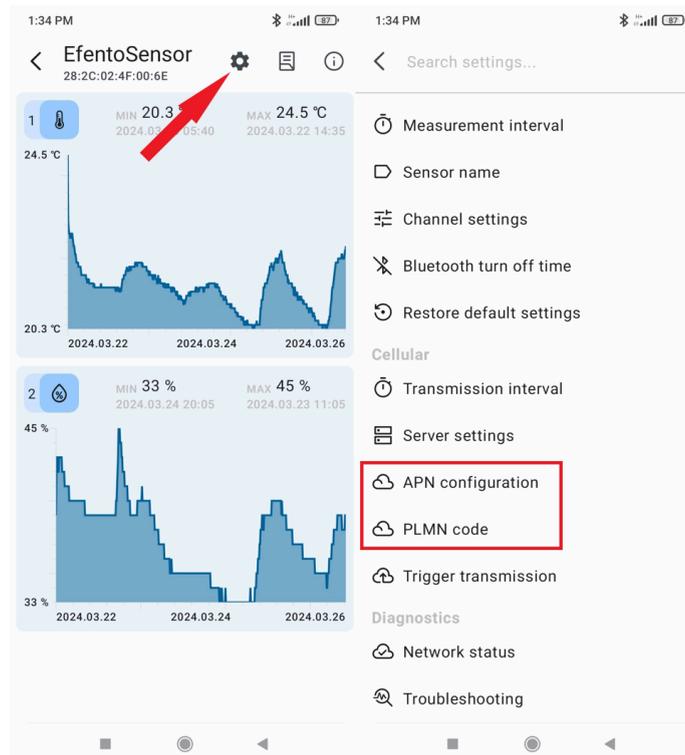
7. On the Efento Cloud platform go to organisation settings (gear icon on the left menu bar) and press the 'Add+' button next to *Sensors*. Add the sensor, set its name and select the location to which the newly added logger will belong.



## 3.2 Configuration of NB-IoT sensor with the custom server

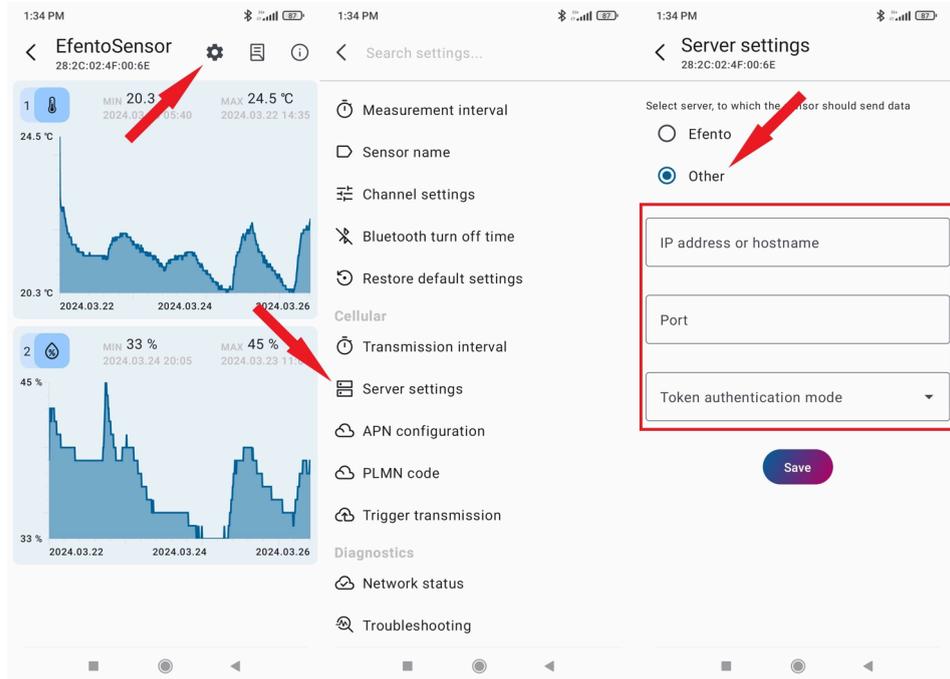
To configure the Efento NB-IoT logger to send the data to Efento Cloud follow the steps below.

1. Connect to the logger via the Efento mobile app and go to its settings by pressing the gear icon in the upper right corner.
2. Set APN and PLMN. If you use a SIM card provided by Efento, the APN and PLMN should be set to 'Auto'. If you use a different SIM card, check the APN and PLMN settings with your provider.



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- Go to 'Server settings', select 'Other', enter IP address, server port and choose token authentication mode.



- Trigger the transmission by going to the device settings (gear icon in the upper right corner) -> Trigger the transmission. The device should register and communicate with the server in 5 minutes.

