



# Datalog IoT User Manual

General Guidelines

Aug. 2018.



## Technical Assistance

If you encounter a problem with your Datalog IoT, review configuration information to verify that your selections are consistent with your application: input configurations; chosen limits; etc. If the problem persists after checking the above, you can get technical assistance by dialing +1 (954) 828-2096, Monday thru Friday, 7:00 a.m. to 5:00 p.m. Eastern Standard Time. You can also email your request to [info@3sense.tech](mailto:info@3sense.tech).

Specialized personnel will discuss your application case.

Please have the following information available:

- All Configuration Information
- All Provided Manuals

## Contact Information

To reach Datalog manufacturer, refer to:

Mail: [info@3sense.tech](mailto:info@3sense.tech)  
Phone: +1 (954) 828-2096  
WhatsApp: +57 (317) 405-1205  
Visit: [www.3sense.tech](http://www.3sense.tech)

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## 1. Overview

Datalog IoT is designed for remote monitoring of Ambient Temperature, Ambient Relative Humidity, and variables from one specific process, since it's set to receive one additional sensor (capable of sensing up to 4 analog or digital variables).

The device is delivered with a rechargeable Li-Ion Battery, and all purchased sensors. Customers are also offered memberships for the use of a platform for remote monitoring and configuration, supported by the manufacturer. More detail about the later can be found ahead.

The device is delivered ready to mount. No external software or equipment is needed to start presenting your process behavior.

### 1.1. Features

Datalog has been thought to easily monitor and deliver data about ambient variables, and the evolution of the process is embedded into. As such, it relies on a series of functionalities, tools and characteristics, set to offer the user the desired comfort.

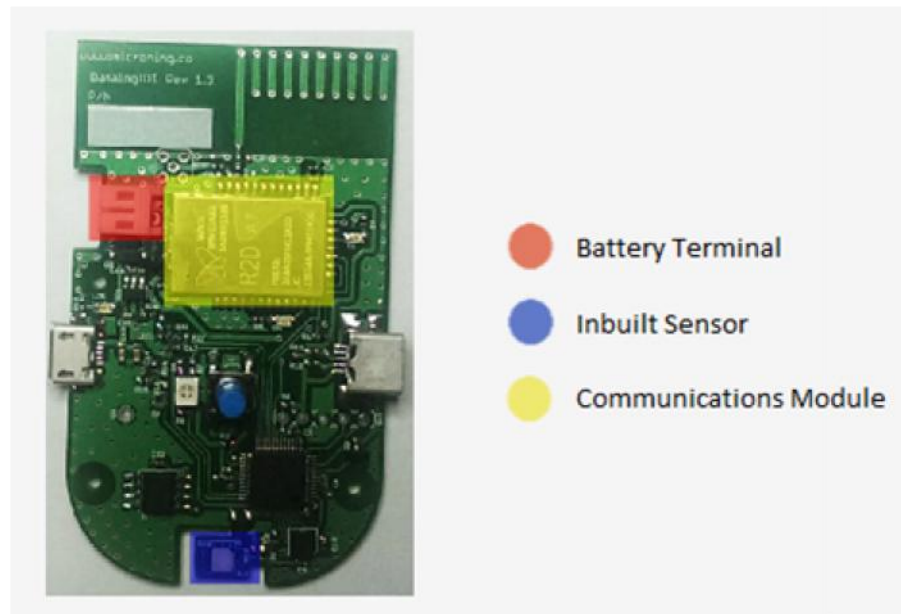
Among these, it is worth to highlight the direct link that devices have to the 3Sense Monitoring System® through its inbuilt communication module: a platform accessible from any mobile computing device (computer, tablet, smartphone), abled for internet navigation.

This platform facilitates remote control and monitoring tasks, keeps graphic record of the variables of interest, indicates their maximum and minimum admissible limits, generates alarm events with visual indications, sends external warning messages through e-mail and Text Messages (SMS), and keeps historical record of the evolution of each registered variable, corrective actions and comments taken when alarms have occurred.

#### Relevant features include:

- Sigfox for remote communication.
- Remote View/Control using PC, Tablet or Smartphone.
- Historical data records on 3Sense Monitoring System®.
- Email, SMS, and Webhook notifications.
- Off-line temporary storage, in case of network connection failure.
- Parameters' configuration protected by password.

## 1.2 Datalog IoT Insight.



### *Overview of uncovered Datalog IoT.*

- 1. Main unit:** The base board takes care of the multiple detected sensors and delivers data to the communications module. This part includes main supply and battery terminals; ports for 3 sensors, and the chosen communications module; as well as an in-built accelerometer.
- 2. Communications module:** It is responsible for the wireless transmission of data, in real time, to any platform that allows remote monitoring of the process. Sigfox®, and connected to 3Sense Monitoring System® by default.
- 3. Inbuilt sensor:** The system incorporates a sensor to measure Ambient Temperature and Ambient Relative Humidity, since this sensor complies with Datalog IoT most common applications.
- 4. Battery:** 3.7 V Lithium-Ion Battery. Powers the monitoring and transmission system when main supply is off.

## 2. Mounting Guidelines

To properly mount the system, please consider the instructions and suggestions given in the following chapters. Plan all wiring before installing your Datalog IoT. Also consider the cabinet space, enclosure dimensions and rated environmental conditions. Use good wiring practices to minimize problems that may occur due to electrical interference.

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**NOTE: Prevent metal fragments and pieces of wire from dropping inside the enclosure of any Datalog Main Unit. If necessary, place a cover over the components during installation and wiring. Ingress of such fragments and chips may cause a fire hazard, damage or malfunction of the device.**

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Every device is already programmed before delivery with all its functionalities, so it's ready to mount.

### 2.1. Environmental Considerations

Device's main unit is restricted for indoor use, since its case is offered with IP40 protection. However, external sensors can use IP67 protected probes, to allow their contact with fluids, dust or UV radiation.

- Ambient Temperature: 50°F (20°C) to 113°F (45°C)
- Relative Humidity (RH): 60±25 %

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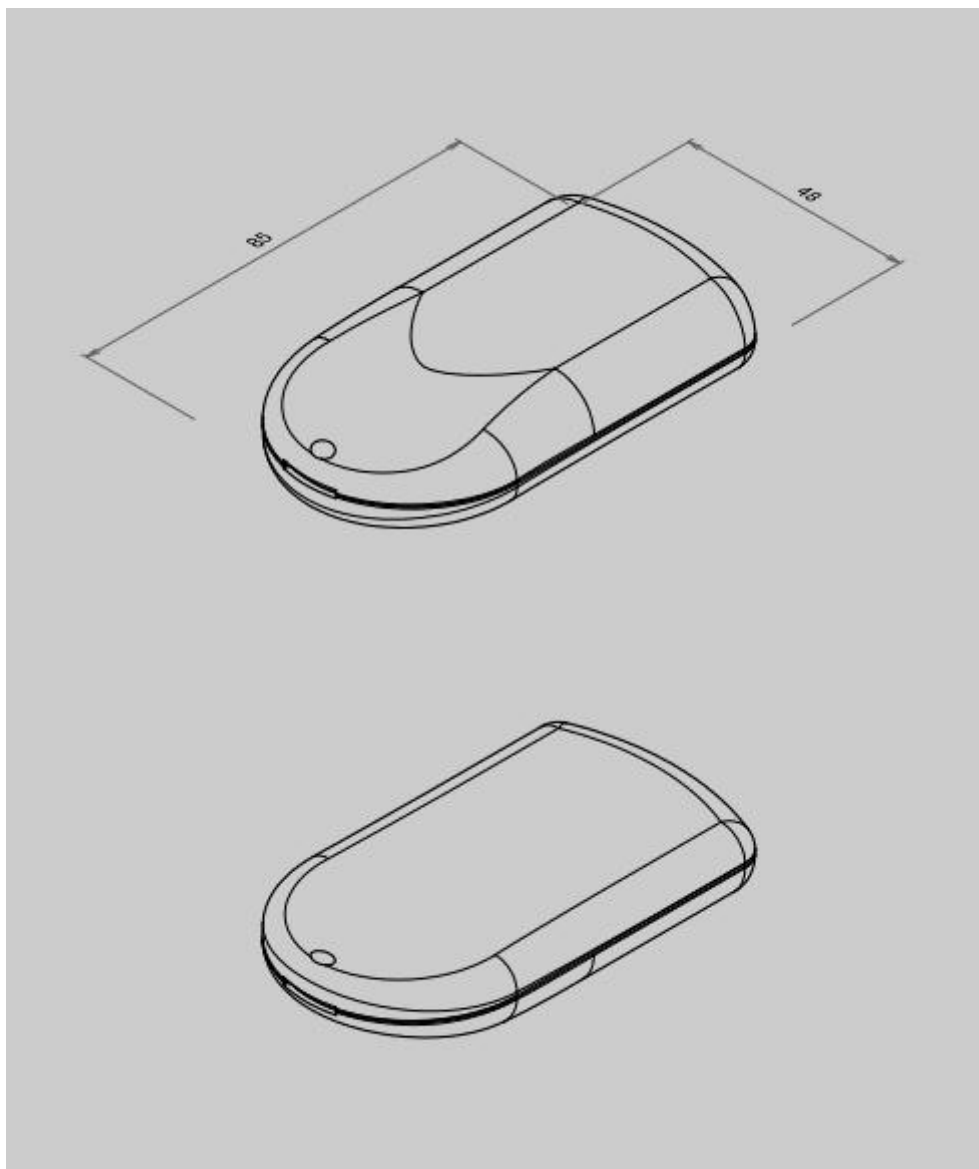
**NOTE: Locate Datalog IoT away from AC power/motor wiring and sources of direct heat output such as transformers, heaters, large capacity resistors, or shock and vibration sources. Avoid using the device in areas where chemicals or flammable gases are present to minimize any risk of ignition.**

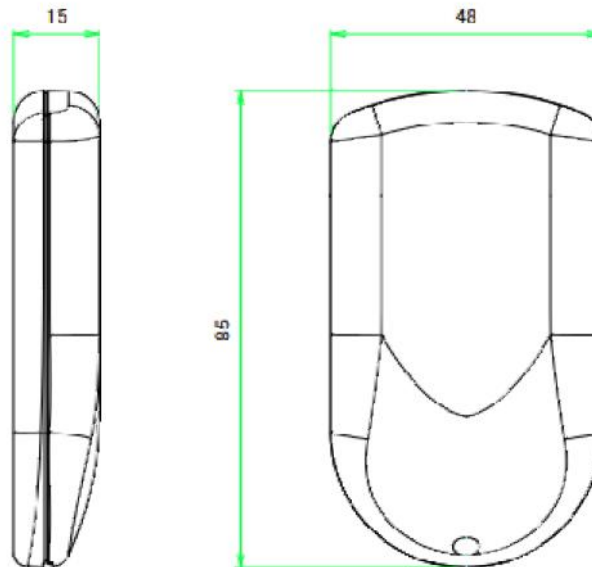
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## 2.2. Dimensions

### 2.2.1. Main Unit Enclosure

The main unit enclosure is a simple snap-in ABS UL94HB case without screws. Its dimensions are indicated by the following schemes:





Dimensions in mm. Material: ABS UL94HB. For further information concerning this enclosure, visit: [//goo.gl/DrbQyX](https://goo.gl/DrbQyX)

Weight: 80g, without accessories.

## 2.3. Mounting Indications

### 2.3.1. Main Unit

To secure main unit enclosure to a wall:

1. Clean and prepare the surface on which the main unit will be placed, so that no grease or liquid residues are left on it.
2. Adhere the unit to this surface using the double-sided tape that the device has on its back face.

**It is more convenient to install the main unit before connecting the external sensor, if necessary; however, the device can also be mounted with a peripheral connected without major complications.**



## 3. Electrical Installation Foreword

Consider implementing electrical safeguards independent to Datalog IoT when designing the wiring and grounding plans for your application. This helps to assure optimum system operation, provides additional electrical noise protection for your application and the device; and prevents any malfunction on the process to be managed due to unexpected operating failures, to which any electronic system is susceptible.

### 3.1. Power Requirements

Among other hardware and firmware precautions, Datalog IoT is protected against power interruptions through its battery; which also protects monitoring and storage of data.

Battery can provide power for up to 60 days, depending on the implemented external sensor.

#### Electrical Ratings:

- **Rated main input voltage:** 5 VDC.
- **Max. Electric Current:** 0.15 A.
- **Power Adapter:** Mini USB A/AB plug.

#### Battery Ratings:

- **Rated Voltage:** 3.7 VDC.
- **Power Rating:** 250 mAh.
- **Type:** LiPoly.

## 4. Normal Operating Mode and Alternative Device States

**If properly energized, the system will automatically enter Normal Operating Mode**, which can be recognized by checking the inner central LED, placed aside the button on the main unit (LED Indicator, from now on); if it flashes blue sporadically (almost, once a minute), the device reports no issue. If, on the contrary, after powering the device no activity is shown, refer to section 4.1.3, since the device could be on Sleep/Off Mode.

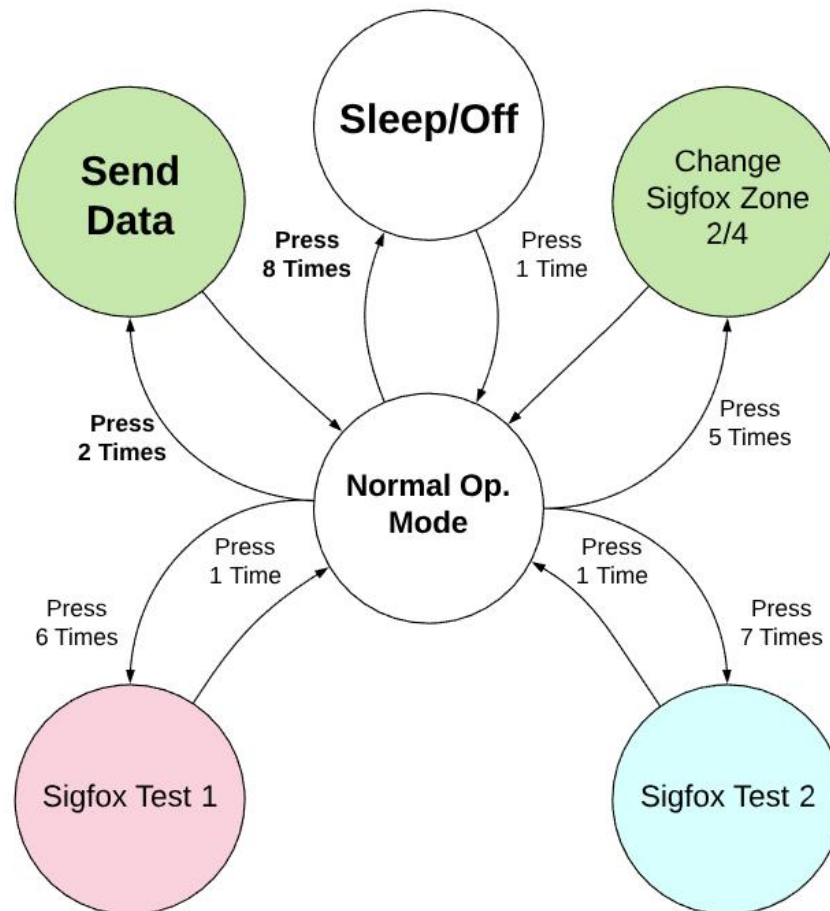
**LED Indicator will flash green only to show that the device is configuring its Communications Module. Another inner LED (called from here Transmission LED), located over the port to connect an external sensor, aside the Indicator LED, serves to indicate to the user when the device is sending a data.**

**From Normal Op. Mode, users can take the device to several alternative states using the button on the top of main unit's enclosure (from Now On, Configuration Button). Access to these is performed after briefly, and on several occasions, pressing the Configuration Button.**

## 4.1. Alternative Device States

While in Normal Operating Mode, as long as a magnet is near the main unit, as described before, the LED Indicator will shine red.

Depending on the number of times the magnet is briefly brought close the main unit, users can reach any of the alternative states indicated below:



### 4.1.1. Send Data

The configured publication time (Normal or Alarm Publication Time) for each sensor will naturally limit the data transmissions executed by Datalog IoT. However, **the device may be forced to send its readings after briefly pressing its Configuration Button 2 times.**

LED Indicator will flash green only to show that the device is configuring its Communications Module.

#### **4.1.2. Sleep/Off**

The device can access Sleep/Off mode after **briefly pressing its Configuration Button 8 times**. In this state, the device stops reading and sending data; which minimizes battery consumption.

After approaching the magnet as indicated, the LED Indicator will light violet 8 times to indicate that the device is about to Sleep/Off. Remember that LED Indicator will flash green only to show that the device is configuring its Communications Module.

**To quit this mode, briefly press Configuration Button 1 time.**

#### **4.1.3. Change Sigfox Zone 2/4**

**Datalog IoT is only able to transmit in zones 2 or 4 of Sigfox network.** Therefore, if the user wants to configure the zone in which the device operates, he should **briefly press its Configuration Button 5 times**. After this, the device will respond with its LED Indicator.

If the LED Indicator flashes 4 times, the device is being set to work in zone 4 of the network; on the other hand, if such LED lights twice, it is to show that the device will be configured to operate in zone 2 of the network.

Remember that LED Indicator will flash green only to show that the device is configuring its Communications Module.

#### **4.1.4. Sigfox Test 1**

Through the Normal Op. Mode, user can access different modes to test the transmission characteristics of Sigfox module that may come with the device, if ordered.

**To enter the mode in which a continuous wave is sent, at maximum power, in one of the frequencies enabled for the module (or Sigfox Test 1), briefly press Configuration Button 6 times.**

The visual LED Indicator will light violet 8 times to show that the device is about to enter the Sigfox Test 1. Remember that LED Indicator will flash green only to show that the device is configuring its Communications Module.

**Once the device has entered this mode, the LED indicator will flash violet every second.**

**To quit this mode, briefly press Configuration Button 1 time.**

#### **4.1.5. Sigfox Test 2**



Through the Normal Op. Mode, user can access different modes to test the transmission characteristics of Sigfox module that may come with the device, if ordered.

**To enter the mode in which a pseudo-random pattern is sent (or Sigfox Test 2), briefly press Configuration Button 7 times.**

The visual LED Indicator will light violet 7 times to show that the device is about to enter the Sigfox Test 2. Remember that LED Indicator will flash green only to show that the device is configuring its Communications Module.

**Once the device has entered this mode, the LED indicator will flash turquoise every second.**

**To quit this mode, briefly press Configuration Button 1 time.**

## **5. 3Sense Remote Monitoring and Control Platform**

**3Sense 4.0 devices, like Datalog X PRO, work in conjunction with Web Platform® WEB platform and Web Platform® APP.**

Users can access Web Platform® platform, via WEB or APP, to perform, among other things:

- Remote monitoring and visualization of historical data records, in graphs and data tables, from up to 2 years.
- Alarm management for variables out of range, battery levels and main power supply fails.
- Add comments to alarm records.
- Set alarm limits, among other custom settings like sensors' names.
- Set alarm events such as e-mail or SMS notifications.

### **5.1. Access to Web Platform®**

Using the credentials provided by the manufacturer, devices' administrators can login at [login.3sense.tech](http://login.3sense.tech):



The platform uses some basic elements to organize the information it manages, and facilitate interaction with users. These are: **Dashboards, Devices and Events**.

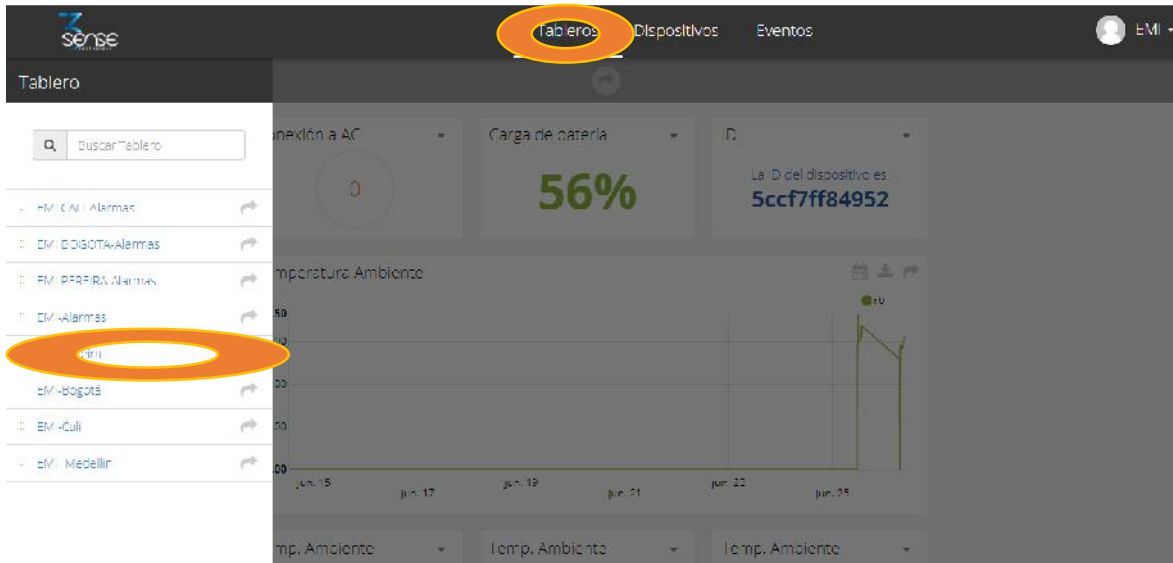
An introduction to the use of each of them will be offered in this guide.

## 5.2. Reviewing One Device Historical Data

Dashboards are interfaces where relevant data is presented to the users. Web Platform® allows to create custom Dashboards to integrate any information desired (if using an account with permission to do so); however, by default it offers panels for remote monitoring of the data published by each device linked to the platform, and panels to display Alarms or Events that have recently occurred.

**To review a Dashboard, initially follow what is indicated in 1.1, to access the platform.**

Once inside, you can find the link to the section that includes all the Dashboards available to your account, by clicking on the icon. Then, you can select the Board of your interest:



After selecting a particular Dashboard, the user is able to see the information that corresponds to said panel in multiple graphs and visual elements:



To learn how to modify said elements and how to configure a Dashboard, refer to the recommended manufacturer's guide.

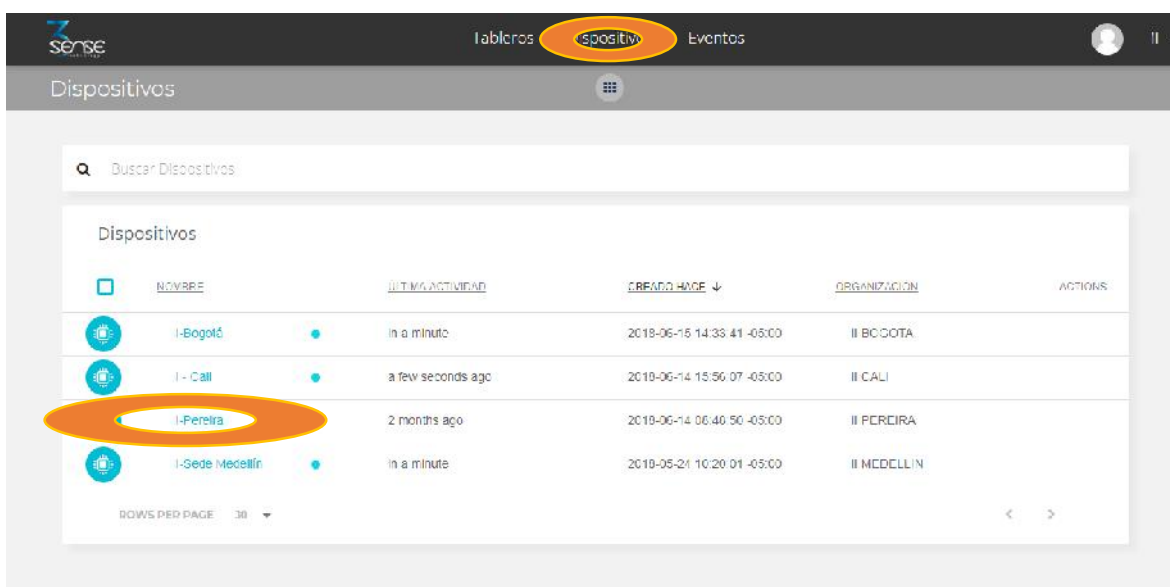
### 5.3. Reviewing Devices, their Variables, and Configuration

A Device, in Web Platform®, is a virtual representation of a physical device that takes data from sensors and transmits them through a particular network to the platform. Thus, each Device visible to an account receives the data of the physical equipment acquired by the administrator of said account.

The data received by a device is stored and organized in multiple variables.

To review a specific Device, initially follow what is indicated in 1.1, to access the platform.

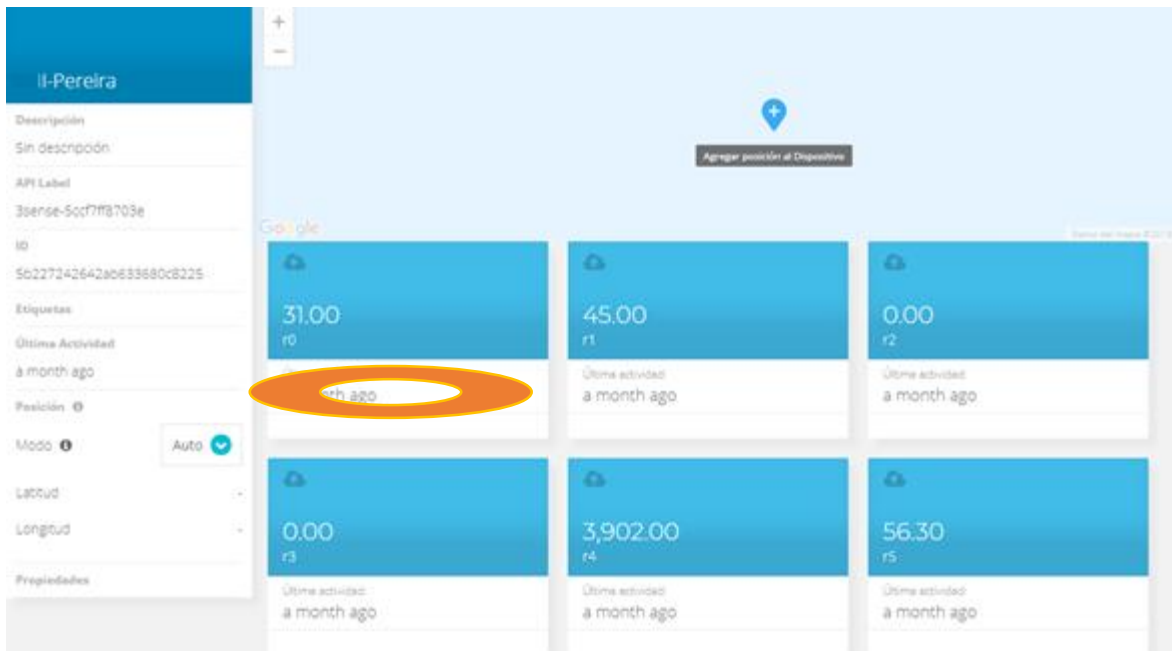
Once inside, you can find the link to the section that includes all the available Devices to your account and select the Device of your interest:



After selecting a particular Device, the user is able to see the information that corresponds to said Device in multiple panels and Variables.

Reviewing the Variables of a certain Device allows checking the update status and presence of each Variable. If it is suspected that one variable is not being updated properly, after entering the Device panel that should include it, its last activity period could be reviewed.





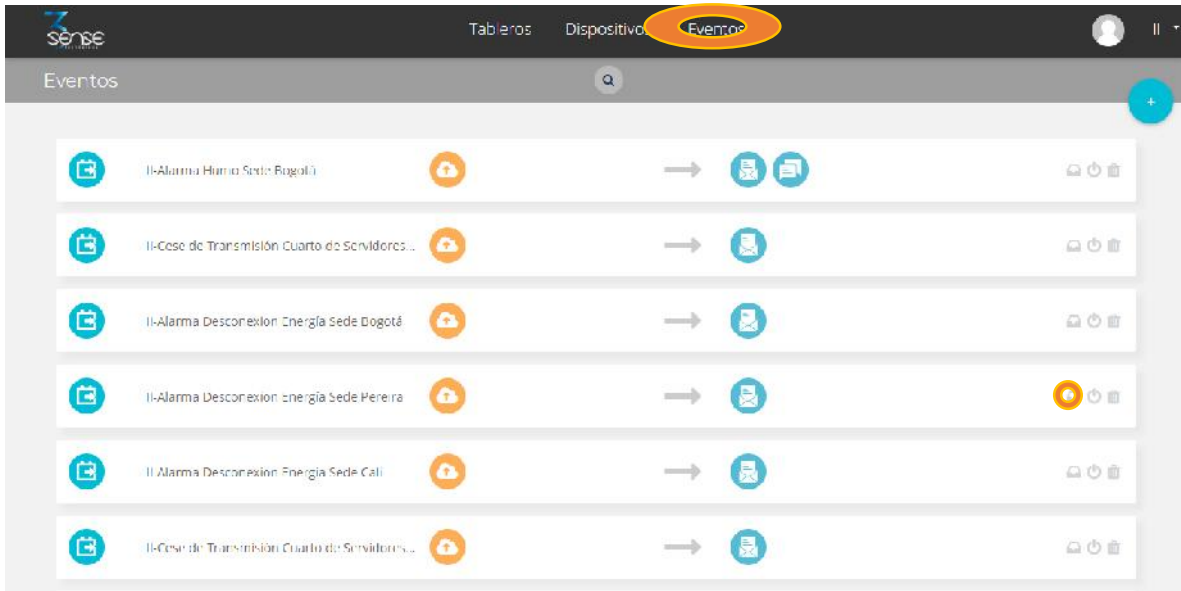
To learn how to modify the elements and configuration of a Device, refer to the manufacturer's guide provided for it.

## 5.4. Reviewing Alarms and Programmed Events

In Web Platform®, Events (or Incidents) are configurable conditions that activate the sending of alert messages via email, SMS messaging, Telegram messaging or Webhooks. Events that are in condition to send a message, can be reviewed in a Board associated with your account, in whose name the suffix -Alarms is included.

**To review an Event, initially follow what is indicated in 1.1, to access the platform.**

Once inside, you can find the link to the section that includes all Events available to your account and locate the Event of your interest:



To review the last activity of an Event, the icon associated with each event can be clicked. By doing so, you can view a table like the following:



To review the Dashboard with the recently activated Alarms, refer to section 1.2, and look for the Dashboard whose name contains the suffix -Alarms.

This Dashboard will contain a table like the following:

Incidentes						
Dispositivo	Variable	Activado	Reconocido	Resuelto	Mensaje	Comentarios
I-Sede Medellín		Agosto 02 2018 - 00:00:00	-	-	II-ALARMA Temperatura Sede Medellín	Ver comentarios
I-Sede Medellín		Agosto 01 2018 - 10:27:40	-	Agosto 01 2018 - 10:30:42	II-ALARMA Temperatura Sede Medellín	Ver comentarios
I-Sede Medellín		Agosto 01 2018 - 11:00:28	-	Agosto 01 2018 - 15:26:42	II-ALARMA Temperatura Sede Medellín	Ver comentarios
I-Sede Medellín		Julio 31 2018 - 12:04:02	-	Agosto 01 2018 - 10:47:27	II-ALARMA Temperatura Sede Medellín	Ver comentarios
I-Sede Medellín		Junio 05 2018 - 07:36:58	-	Julio 01 2018 - 11:31:16	II-ALARMA Temperatura Sede Medellín	Ver comentarios
I-Sede Medellín		Mayo 25 2018 - 11:37:31	-	Junio 05 2018 - 01:35:17	II-ALARMA Temperatura Sede Medellín	Ver comentarios
I-Sede Medellín		Mayo 25 2018	-	Mayo 25 2018	II-ALARMA Temperatura Sede Medellín	Ver comentarios

To learn how to modify the elements and configuration of a Device, refer to the manufacturer's guide, provided for it.

**Remember that, if a certain explanation not clear, or you need more assistance, you can contact the 3Sense technical service department. Contact Information can be found at the beginning of this manual.**