Pro-E 4.0
User Manual

General Guidelines

Nov. 2018.

Technical Assistance

If you encounter a problem with your Pro-E 4.0, 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 (786) 584-7439, 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 support@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 Pro-E 4.0 manufacturer, refer to:

Mail: info@3sense.tech

Phone: +1 (786) 584-7439

WhatsApp: +1 (786) 584-7439

                 +57 (317) 405-1205

Visit: www.3sense.tech

CONTENT:

1. Overview

Pro-E 4.0 is designed for remote monitoring of Ambient Temperature, Ambient Relative Humidity, and variables from one specific process, it's set to receive two different sensors simultaneously.

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

Pro-E 4.0 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, Text Messages (SMS), Chat Messages and phone calls, and keeps historical record of the evolution of each registered variable, corrective actions and comments taken when alarms have occurred.

Relevant features include:

- Wifi or 2G/3G communication.
- • 2,5" touch screen with real time variables, maxium an minium record and 7 days gratification data
- Remote View/Control using PC, Tablet or Smartphone.
- Historical data records on 3Sense Monitoring System®.
- Visual and sound high and low alarms
- Email, SMS, chat and phone call notifications.
- Off-line temporary storage, in case of network connection failure.

- Parameters' configuration protected by password.

- 7 days recording data

- 24 hours of battery autonomy

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 Pro-E 4.0. 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.

NOTE: Prevent metal fragments and pieces of wire from dropping inside the enclosure of any Pro-E 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.

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 %

NOTE: Locate Pro-E 4.0 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.
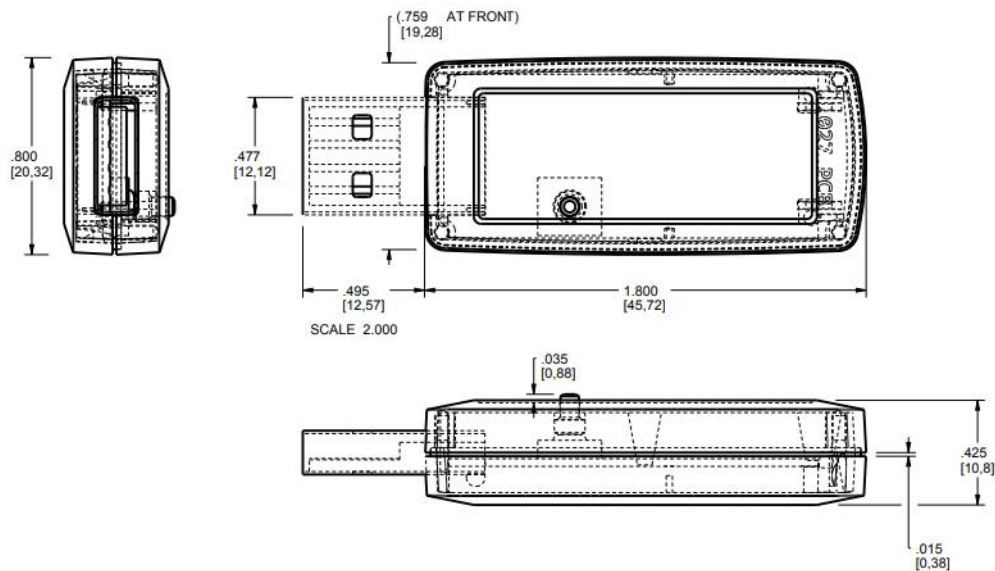
MAIN UNIT DIMENSIONS
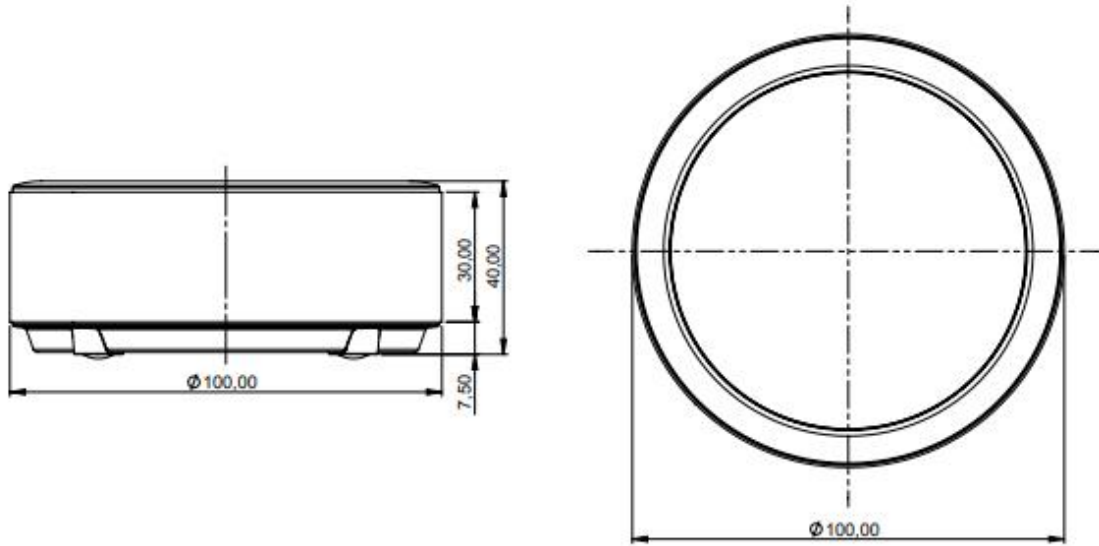
Material: Aluminum AlMgSi 0.5. Frame: ASA+PC-FR (UL 94 V-0), Plastic parts. For further information concerning this enclosure, visit: //goo.gl/FTfW5Z

Weight: 180g, without accessories.

Sensors Dimensions

2.2. Mounting Indications
2.2.1. 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. Ad here 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 Pro-E 4.0 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, Pro-E 4.0 is protected against power interruptions through its battery; which also protects monitoring and storage of data.

Battery can provide power for up to 24 hours, depending on the implemented external sensor.

Electrical Ratings:

• **Rated main input voltage:** 5 VDC.

• **Max. Electric Current:** 0.15 A.
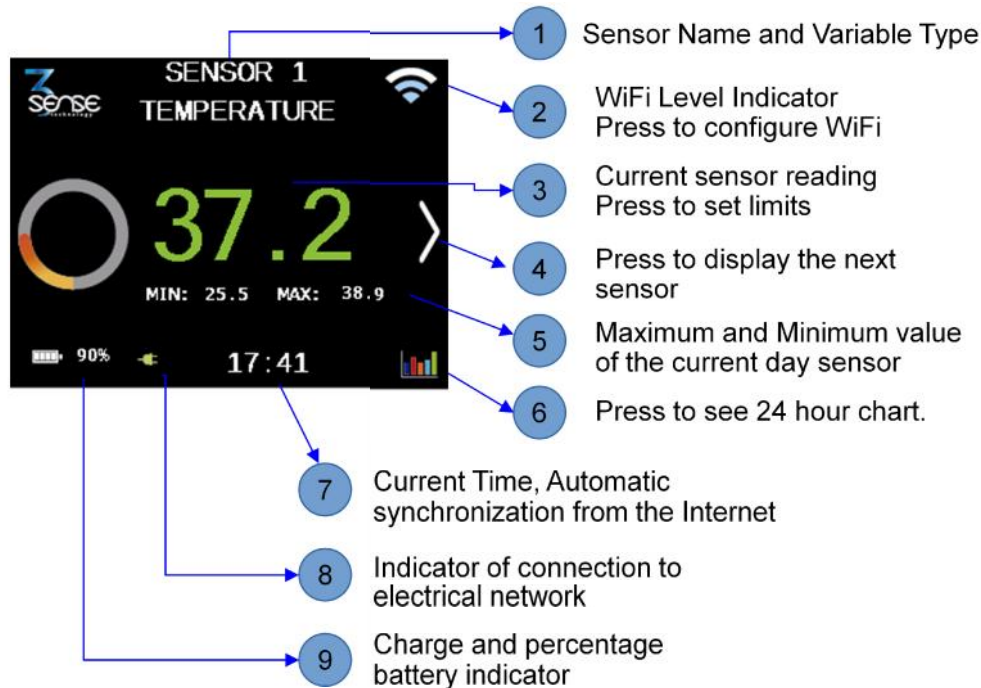
• **Power Adapter:** Mini USB A/AB plug.

Battery Ratings:

• **Rated Voltage:** 3.7 VDC.

• **Power Rating:** 1220 mAh.
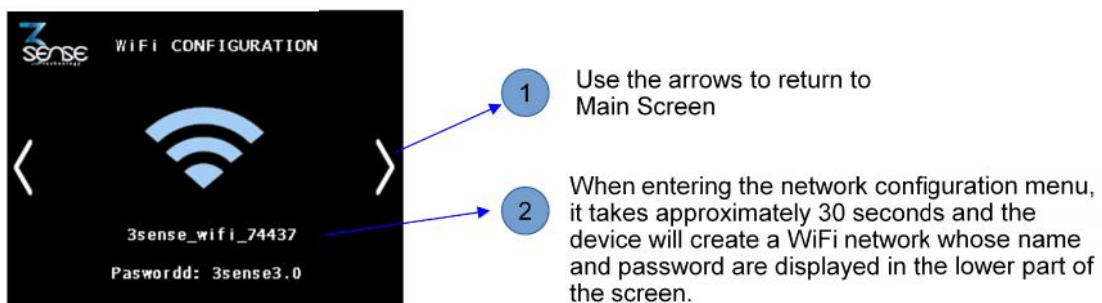
• **Type:** LiPoly.

4. Normal Operating Mode and Alternative Device States

If properly energized and at least one sensor connected the system will automatically enter Normal Operating Mode, which can be recognized by checking the touch screen

MAIN SCREEN

1. Sensor Name and Variable Type
2. WiFi Level Indicator
   Press to configure WiFi
3. Current sensor reading
   Press to set limits
4. Press to display the next sensor
5. Maximum and Minimum value of the current day sensor
6. Press to see 24 hour chart.
7. Current Time, Automatic synchronization from the Internet
8. Indicator of connection to electrical network
9. Charge and percentage battery indicator

ENTRY TO CONFIGURATION OF THE WIFI DEVICE CONNECTION

1. Use the arrows to return to Main Screen
2. When entering the network configuration menu, it takes approximately 30 seconds and the device will create a WiFi network whose name and password are displayed in the lower part of the screen.

Note: Because the configuration of the WiFi network requires more power from the device, make sure it is connected to the AC network, or that it has a battery charge greater than 40% for the connection to be stable.

Connect Pro-E 4.0 to a Wi-Fi® network

Only after engaging to said network, a page identified with the IP address: **192.168.4.1 (whose interface is shown below), can be displayed:**

To set the SSID of the network to which the device will be connected, its Password; as well as the URL and Port that will receive the transmitted data, proceed as follows:

1. **On the Home Page, press the Configure Wi-Fi®** button to be directed to a page where you can see a scan of Wi-Fi® networks detected by the device as available, 2 input fields, and two buttons (Save and Scan).

   The page that loads after selecting Sensor Settings, on Home Page, is presented in the following image:

This device is part of 3Sense product family

2. In the form at the bottom of the Configure Wi-Fi® page, **enter the credentials (SSID and password) of the network to which you want the PRO-E 4.0 to connect, as well as the Server IP (or URL endpoint) and Port that will receive the data** (ask PRO-e manufacturer to know which URL and Port corresponds to 3Sense Monitoring and Control Platform, if you aim to use it), **and then press the Save button**.

If the entered credentials are invalid, the next page will appear:

3SENSE

Credentials NOT Saved
Invalid SSID

Back to Home

EXTRAORDINARY IS OUR LIMIT

Otherwise, you will see:

3SENSE

Credentials Saved
Trying to connect your 3Sense to
network.
If it fails go to WiFi Config and try
again

Back to Home

EXTRAORDINARY IS OUR LIMIT

3SENSE

Server IP
Server port
Sensor 1
Sensor 2

save

Scan

EXTRAORDINARY IS OUR LIMIT

The IP server port of the device is **d0.de.omicroning.co** and the port is **80**.

The names of the sensors can be defined by the user

Check Other Settings

If you wish to see the factory ID of the Communications Module that is being configured, its firmware version, its MAC, and its latest dynamic IP, follow the next steps:

1. **On Home Page, press the More Info** button to be directed to a list with all this data.

3SENSE

Chip ID: 14237262

Last Dynamic IP:

Station MAC: 5C:CF:7F:D9:3E:4E

Software WiFi Version 3.0.1

Back to Home

EXTRAORDINARY IS OUR LIMIT

192.168.4.1/info

GENERATION OF HISTORICAL GRAPH OF A SENSOR

SENSOR 1
TEMPERATURE

37.2

MIN: 25.5   MAX: 38.9

90%   17:41

To visualize the historical behavior of the last 24 hours of the sensor, press on the graphic symbol

The device will generate a reference graph with the last 24 hours of data captured by the sensor.
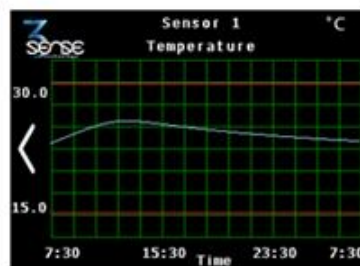
If the device has not yet captured data, the values will appear at 0.

If the value leaves the scale, it will be drawn at the maximum or minimum end of the graph, the exact historical values can be consulted in the 3Sense WEB monitoring system

Sensor 1   °C
Temperature

30.0

15.0

7:30   15:30   23:30   7:30
Time

Press to return to the main menu

SENSOR CONFIGURATION MENU
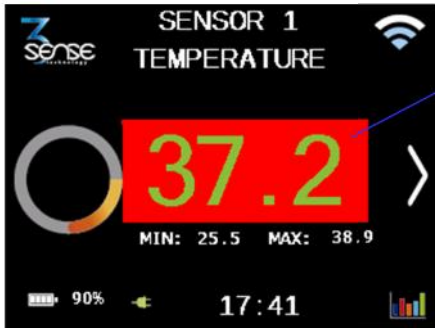
You can enter the configuration menu of a sensor by tapping on the current value of the variable.
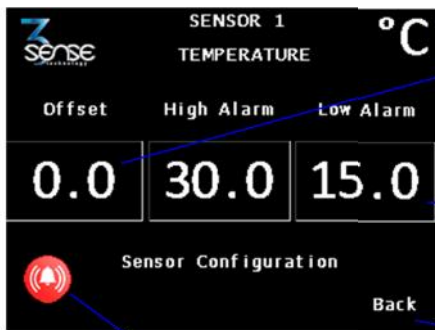
(1) If the variable that is configured is temperature, you can change the scale from °C to °F when you press on the symbol of the current scale

(2) Sensor reading adjustment Touch on the offset value if you need to make an adjustment to the current sensor reading.

(3) Alarm Limit Setting Press the high or low alarm value to adjust the working limits of the sensor

(4) Press to return to the main screen

(5) Silence the Alarm Press to silence the active sound alarm of a sensor for 10 minutes. The visual alarm will remain active until the sensor reading enters the working range
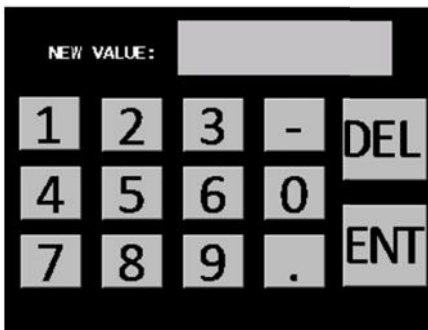
(6) Once you press on an Adjustment you can modify its value in the pop-up menu The password (333) will be requested before allowing the modification of the configured parameters

Press DEL to erase if you have wrong to assign the value.

Press ENTER to record the new value assigned to the variable and return to the configuration menu

CONNECTION OF SENSORS AND AUTOMATIC SHUT-OFF
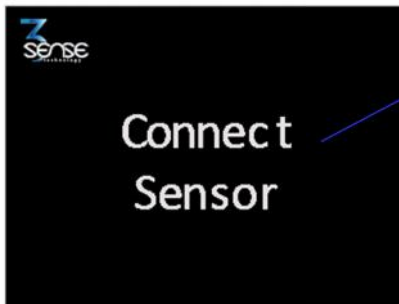
The sensors to be connected, will be recognized automatically by the device, who will initiate the deployment of data sent to the system

If the device has no sensor connected
The message "Connect Sensor" will appear

If this message appears and one or more sensors are connected, it is possible that the device has stopped recognizing the sensor, please disconnect and reconnect the sensor to be recognized again.
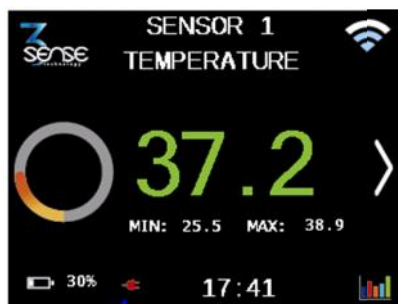
Device turned off

If the device does not find an active sensor, after 5 minutes, it will turn off. to activate it again connect a sensor and automatically the device will turn on. To restart the device this procedure can be used.

If you find the device off, and the sensors are connected, it is possible that the device has stopped recognizing the sensor or because the battery is exhausted, please disconnect and reconnect the sensor or sensors and the power supply so that the device is active

EQUIPMENT IN ENERGY SAVING MODE

The 3Sense 4.0 device is designed to stay permanently connected to the AC Power network. If there is a power cut, the device will enter the energy saving mode and thanks to its backup battery will maintain the monitoring and alarms for at least 24 hours, the WiFi / 2G / 3G communication will also continue (provided that the network remains active) with the 3Sense Monitoring System, informed of the failure of the AC network supply.

In this mode, the device will send data to the 3Sense Monitoring System more spaced as the battery runs out, will also decrease the brightness of the screen from 100% to 30% gradually, until the battery runs out and the device is completely turned off.

Once the device is reconnected to the AC network or the power is restored, the device will turn on, if the battery has been completely depleted and enter the normal operating mode.

Indicator of failure in the AC power network

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:

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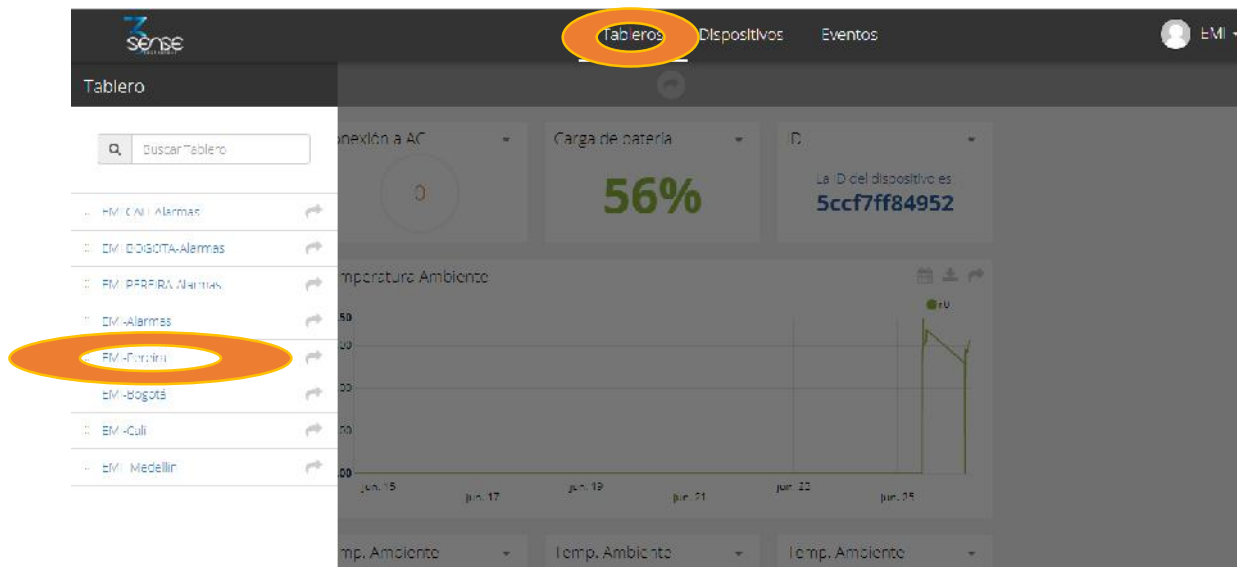
After selecting a particular Dashboard, the user is able to see the information that corresponds to said panel in multiple graphs and visual elements:

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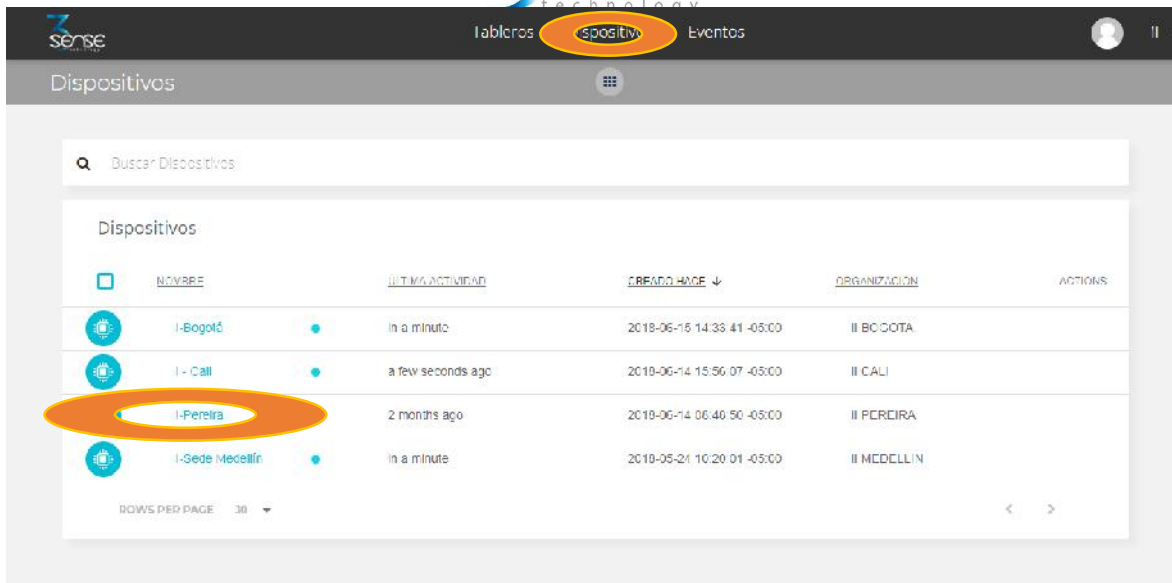
After selecting a particular Device, the user is able to see the information that corresponds to said Device in multiple panels and Variables.

Reviewing the Variables of a certain Device allows checking the update status and presence of each Variable. If 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.
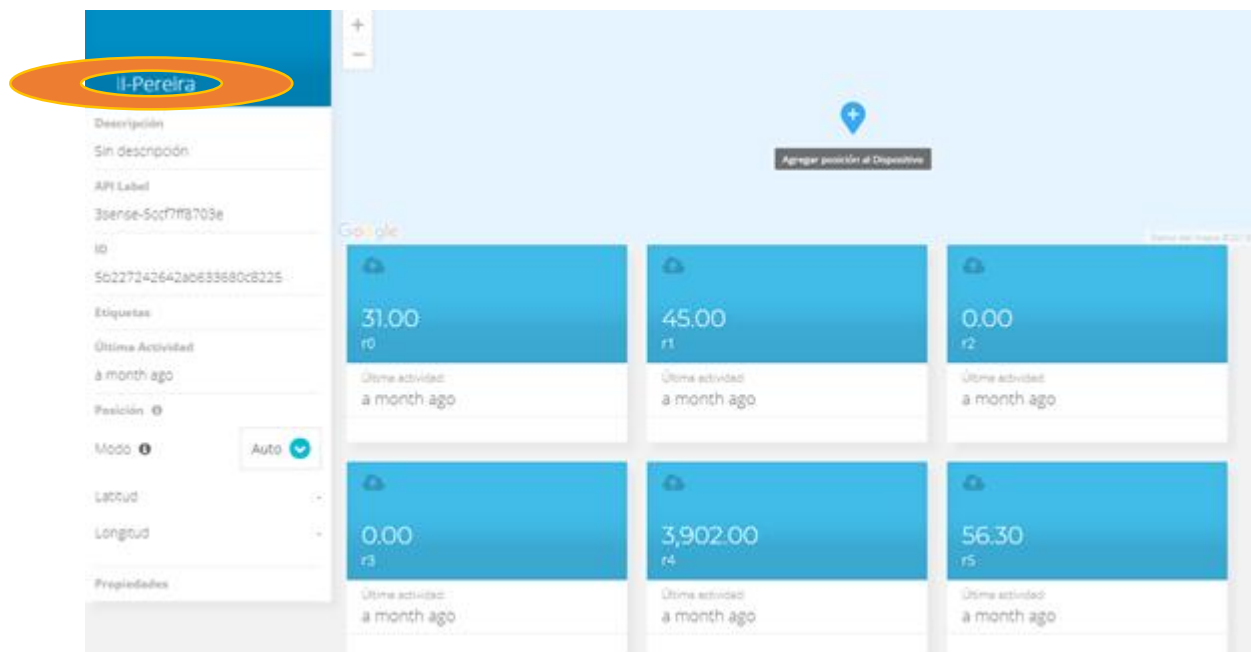
To learn how to modify the elements and configuration of a Device, refer to the manufacturer's guide provided for it.

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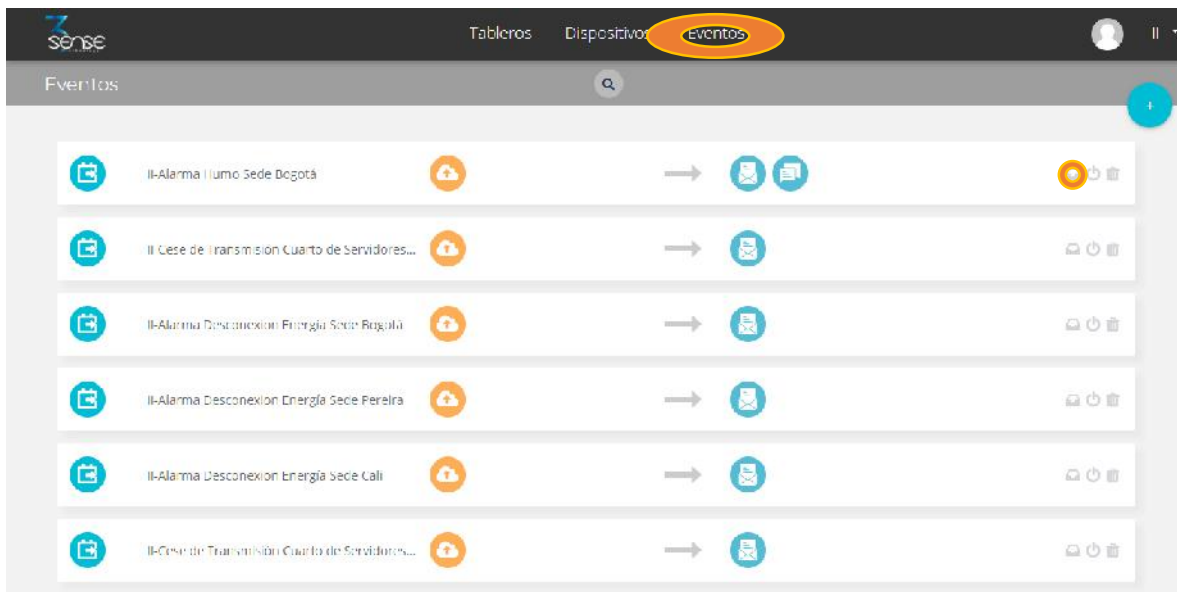
To review the last activity of an Event, the icon associated with each event can be clicked. By doing so, you can view a table like the following:

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:

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.