



GPS-TS User Manual

General Guidelines



Nov. 2018.



Technical Assistance

If you encounter a problem with your GPS-TS, 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.

Specialized personnel will discuss your application case.

Please have the following information available:

- All Configuration Information
- All Provided Manuals

Contact Information

To reach GPS-TS 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



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1. Overview

This document describes the features of the GPS-TS.

One of the differences of this product is that it uses the Sigfox network for communications.

Sigfox is a LPWAN network that operates in several countries.

So before starting using this product make sure that your product was correctly registered at Sigfox.

Intelligent and easy configurable APP and WEB monitoring applications, plus GPS tracker devices set for optional Temperature measurement.

1.1. Features

GPS-TS 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), able 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.
- Location and sensed variable state.
- Battery level.
- AC connector.
- Graphic record of each variable for up to 2 years.



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 GPS-TS. 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.

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

2.1. Environmental Considerations

IP66. No ingress of dust; complete protection against contact (dust tight). No ingress of water when submerged up to a depth of 1 meter for 30 minutes. Suitable for outdoor use.

Operational Temperature Range: -20°C ~ +60°C*

* Please pay a full attention that vehicle shall NOT be left under direct sunlight long time in hot weather. There is a risk of battery explosion in hot temperature.

NOTE: Locate GPS-TS 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.

2.2. Dimensions

2.2.1. Main Unit Enclosure

Housing Dimension: 75.0(W) x 50.5(L) x 22.5(T) mm
88.3(W) x 55.9(L) x 35.6(T) with magnetic holder

Weight: 78g (without holder) / 190g (with magnetic holder)



2.3. Mounting Indications

2.3.1. Main Unit

Using magnetic holder, it is only necessary to stick it to a metal surface

Or to secure main unit enclosure to a surface:

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.



3. Electrical Installation Foreword

Consider implementing electrical safeguards independent to GPS-TS 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, GPS-TS is protected against power interruptions through its battery; which also protects monitoring and storage of data.

Battery can provide power for up to 1400 days, depending on the time of publication.

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:** 1500 mAh.
- **Type:** Li-Ion.



4. Normal Operating Mode and Alternative Device States

The product has 3 LEDs, 2 external push buttons and a micro-USB connector.

The LEDs are:

- Battery charge – This LED turns RED while the product is charging the battery. In addition, it will turn GREEN while the device is transmitting to the Sigfox network.
- MCU – this LED will flash with a code that relates to battery level.
- GPS – this LED will flash slowly if the GPS is on and there is no location fix and will flash shortly when the GPS has a location fix.

The 2 push buttons are:

- ON/OFF button – if pressed for more than 2 seconds it will change the product state from ON to OFF and from OFF to ON. When the product is turned ON it will flash the MCU and GPS LEDs once at the same time. When it is turned OFF, it will flash the MCU and GPS LEDs twice at the same time. If pressed for less than 2 seconds and the device is ON, it will report the battery level using the MCU LED.
- The SOS button – When the device is ON, if pressed it will generate an event (if enabled) that can be sent to the Sigfox network.

4.1. Send Data

The configured publication time (Normal or Alarm Publication Time) for each sensor will naturally limit the data transmissions executed by GPS-TS. However, **the device may be forced to send its readings after briefly pressing its ON/OFF Button 1 time.**

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



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:

A screenshot of the 3sense login interface. At the top center is the 3sense technology logo. Below it, the word 'INGRESAR' is displayed in a light grey box. The main login area is a light grey rectangle containing two input fields: 'nombre de usuario' with a user icon and 'contraseña' with a lock icon. Below these fields is a link that says '¿Se te olvidó tu contraseña?'. At the bottom of the login area is a large, rounded 'INGRESAR' button.



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

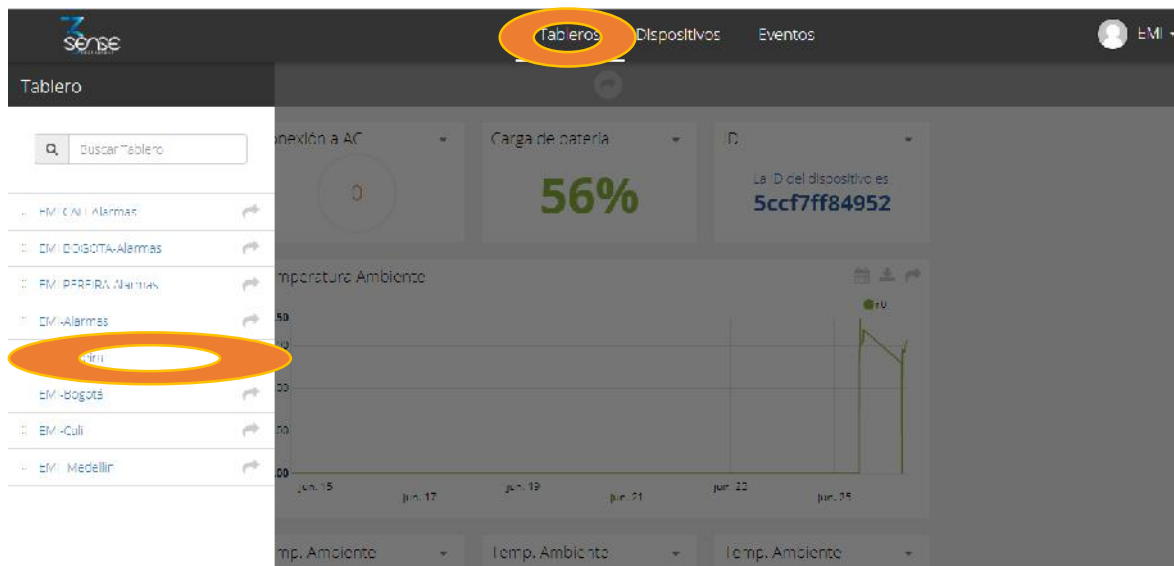
An introduction to the use of each of them will be offered in this guide.

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.

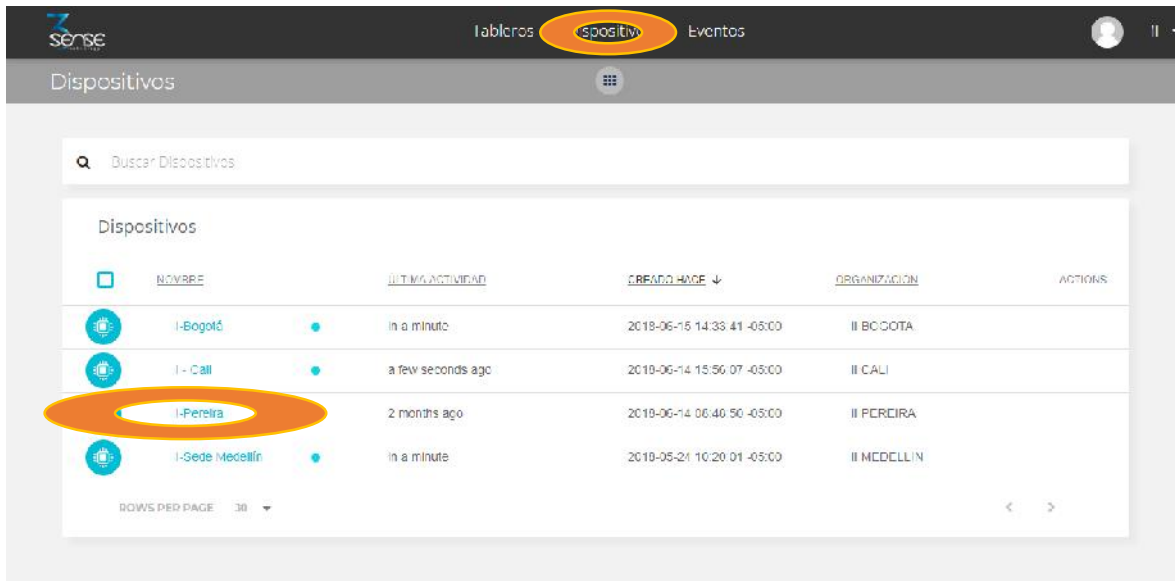
5.3. Reviewing Devices, their Variables, and Configuration

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.

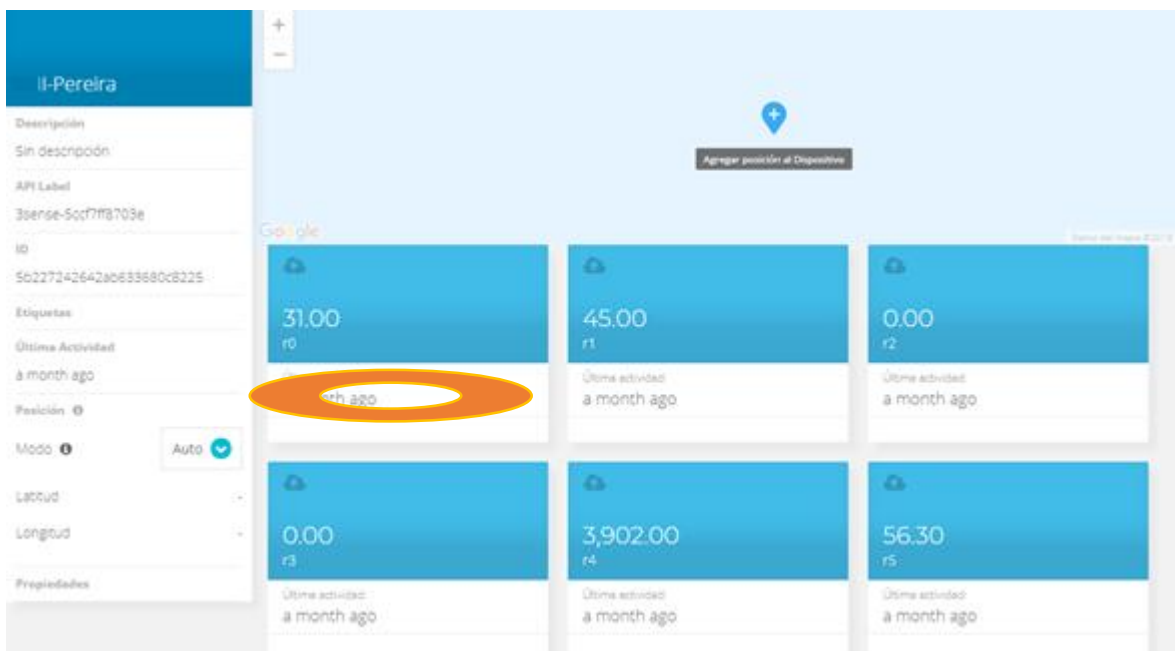
To review a specific Device, initially follow what is indicated in 1.1, to access the platform.

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.



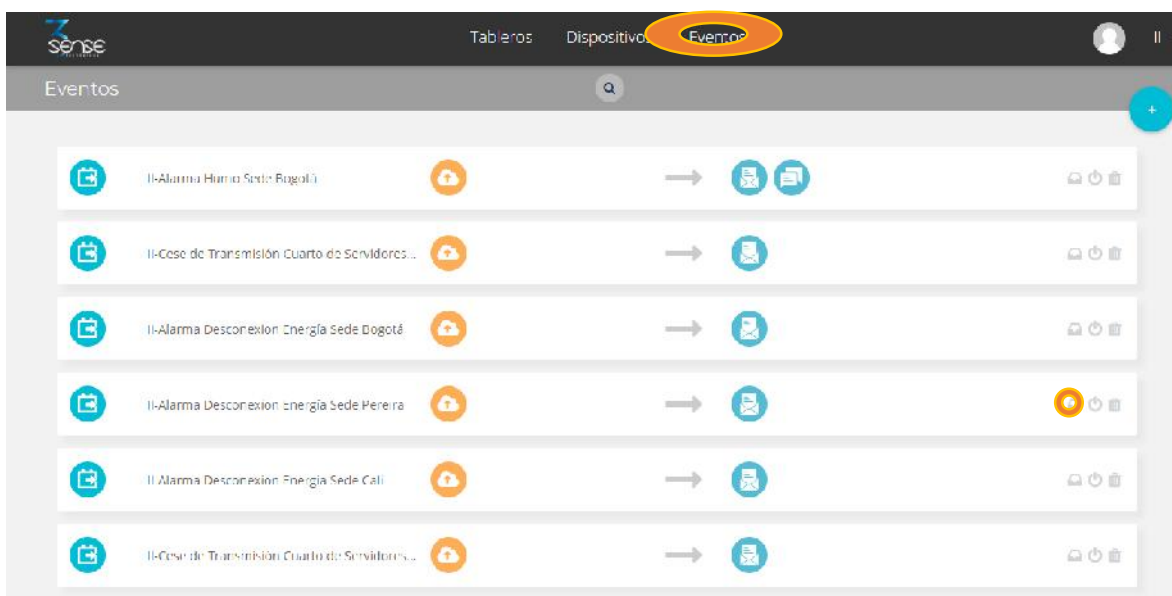
To learn how to modify the elements and configuration of a Device, refer to the manufacturer's guide provided for it.

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:

| Dispositivo | Variable | Activado | Reconocido | Resuelto | Mensaje | Comentarios |
|-----------------|----------|---------------------------|------------|---------------------------|-------------------------------------|-----------------|
| I-Sede Medellín | [Icon] | Agosto 02 2018 - 09:00:00 | - | - | II-ALARMA Temperatura Sede Medellín | Ver comentarios |
| I-Sede Medellín | [Icon] | Agosto 01 2018 - 10:27:40 | - | Agosto 01 2018 - 10:20:42 | II-ALARMA Temperatura Sede Medellín | Ver comentarios |
| I-Sede Medellín | [Icon] | Agosto 01 2018 - 11:00:28 | - | Agosto 01 2018 - 10:26:42 | II-ALARMA Temperatura Sede Medellín | Ver comentarios |
| I-Sede Medellín | [Icon] | Julio 31 2018 - 12:04:02 | - | Agosto 01 2018 - 10:47:27 | II-ALARMA Temperatura Sede Medellín | Ver comentarios |
| I-Sede Medellín | [Icon] | Junio 05 2018 - 07:36:58 | - | Julio 31 2018 - 11:13:16 | II-ALARMA Temperatura Sede Medellín | Ver comentarios |
| I-Sede Medellín | [Icon] | Mayo 25 2018 - 11:57:31 | - | Junio 05 2018 - 07:36:58 | II-ALARMA Temperatura Sede Medellín | Ver comentarios |
| I-Sede Medellín | [Icon] | Mayo 25 2018 | - | Mayo 25 2018 | II-ALARMA Temperatura Sede | 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.