



GreenPath Ver.01

ENVIRONMENT METER AND RECORDER
TEMPERATURE, HUMIDITY AND CO2



GreenPath
TEMP/HUMID



GreenPath
CO2

GREENPATHV01-04T-19857-2506

Have this manual in the palm of your hand through the FG Finder app.

- BEFORE USING THE EQUIPMENT, WE RECOMMEND THAT YOU READ THE COMPLETE INSTRUCTION MANUAL IN ORDER TO AVOID POSSIBLE DAMAGE TO THE PRODUCT.
- AS IT IS CONSTANTLY EVOLVING, FULL GAUGE CONTROLS RESERVES THE RIGHT TO CHANGE THE INFORMATION CONTAINED IN THE MANUAL AT ANY TIME WITHOUT PRIOR NOTICE.



This product is approved by Anatel in accordance with the regulated procedures for assessing compliance of telecommunications products and meets all technical requirements.

"This equipment is not entitled to protection against harmful interference and may not cause interference to duly certified systems."

06056-24-10796 For more information, see the Anatel website: www.gov.br/anatel



AVAILABLE ON
Google Play



AVAILABLE ON
App Store

GreenPath
APP



1. DESCRIPTION

GreenPath line's portable sensors are devices for measuring and recording temperature, humidity, and CO2 concentration.

They communicate with an app with a friendly interface for reading sensor information. The application shows temperature, humidity, or CO2 records in real time; creates detailed reports in PDF or CSV format with statistics, graphs, alarms and accurate date and time information. This information allows you to certify to inspection bodies that your goods are in safe environments and in perfect storage conditions. Simplify your operations, maintain complete control, and meet the highest quality standards.

Ensure compliance and safety of your products with portable GreenPath sensors.

1.1 Features

- The GreenPath line consists of 2 sensor models:
 - GreenPath TEMP/HUMID - Temperature and Humidity Sensor;
 - GreenPath CO2 - CO2 Sensor (carbon dioxide);
- Bluetooth Low Energy (BLE) communication;
- AAA type batteries (two units, replaceable);
- Reusable sensor – allows multiple reading cycles;
- Adjustable measurement interval;
- Adjustable alarm thresholds;
- Configurable delay for starting measurements;
- PDF report generation;
- Data extraction to Excel (.csv);
- Storage of more than 65,000 measurement records;
- Visual indication of sensor status;
- Periodic transmission of measured quantities;
- User management;
- Creation of access keys for guest users.

2. APPLICATIONS

GreenPath sensors are extremely versatile, in addition, to carrying out precise measurements that guarantee the reliability of records. The sensors can be used in different applications, such as:

- Pharmaceuticals and Health:** Monitoring temperature and humidity-sensitive medications during storage and transportation;
- Food and Beverage Industry:** Monitoring environmental conditions in storage, warehouse, and transportation facilities to maintain the quality and safety of food products;
- Cold Chain Logistics:** Monitoring and recording environmental conditions of perishable products during transport in cold chain;
- Transport of Sensitive Goods:** Condition monitoring during transport of goods, especially those sensitive to variations in temperature and humidity.

3. TECHNICAL SPECIFICATIONS

Power*	2 AAA 1.5V (3V) batteries
Communication protocol	Bluetooth Low Energy (BLE) 5.1
Transmission power	+2,2 dBm
Frequency	2.4 GHz - BLE Channels
Memory capacity	65024 datalogs
Protection degree	IP 65
Dimensions (W x H x D)	67 x 77,5 x 26mm / 2,63" x 3,05" x 1,02"
Weight	63,7 g
Certifications**	ANATEL: 06056-24-10796 / FCC ID: Y82-DA14531MOD

TIME TO FULLY OCCUPY THE SENSOR MEMORY

Time to reach memory capacity (without overwriting)	Measurement Range					
	5 sec.	30 sec.	1 min.	5 min.	15 min.	1 hour
	3,7 days	22,5 days	45,1 days	225,7 days	1,8 years	7,4 years

GreenPath TEMP/HUMID	Temperature Measurement	Humidity Measurement
Measuring range	-20 to 60 °C	0 to 100 %
Resolution	0,01 °C	0,01%
Precision	± 1,5°C (-20 to 0°C)	± 8% (0 to 20%)
	± 0,5°C (0 to 50°C)	± 5% (20 to 85%)
	± 1,5°C (50 to 60°C)	± 8% (85 to 100%)
Adjustable alarm thresholds	-20 to 60 °C	0 to 100 %
Battery life***		1200 days
Interval between measurements		5 seconds to 6 hours
Operating Temperature		-20 to 60 °C

Initial stabilization time: 60 minutes

After exposure to a new environment, the sensor requires a stabilization time of up to 60 minutes for the readings to meet the specified tolerances. The smaller the humidity difference between environments, the faster the stabilization.

Response time to humidity variations: 1% RH per minute

The sensor responds to humidity variations at a rate of 1% RH per minute. Allow a time proportional to the variation for the readings to meet the specified tolerances; for example, an abrupt change of 25% RH requires at least 25 minutes.

Response time to temperature variations: 1°C per minute

The sensor responds to temperature variations at a rate of 1 °C per minute. Wait for a time proportional to the variation so that the readings meet the specified tolerances; for example, a sudden change of 25 °C requires approximately 25 minutes.

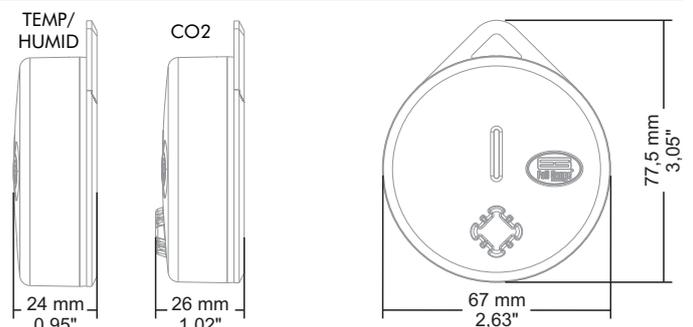
GreenPath CO2	
Measuring range	0 to 20.000 ppm
Resolution	1 ppm
Precision	± (50 ppm + 2,5% of measurement) @ (400 to 1.000 ppm)
	± (50 ppm + 3% of measurement) @ (1001 to 2.000 ppm)
	± (40 ppm + 5% of measurement) @ (2001 to 5.000 ppm)
Adjustable alarm thresholds	0 to 20.000 ppm
Battery life***	100 days
Interval between measurements	5 minutes to 6 hours
Operating Temperature	-10 to 60 °C

* Batteries are included with the product.

** This product is certified to electromagnetic safety standards. To ensure compliance with these regulations, it is recommended that the product is operated at a minimum distance of 20cm from a person.

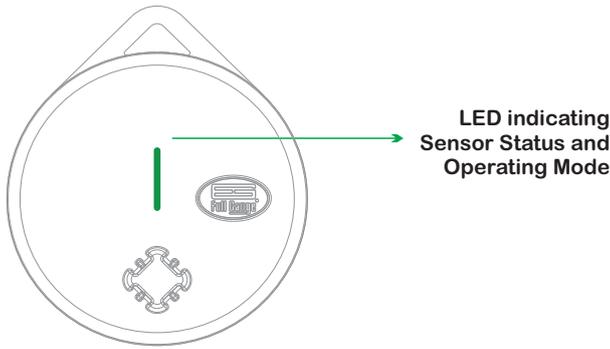
*** Battery life is estimated. User settings, environmental conditions and battery quality can affect the sensor's power consumption.

4. DIMENSIONS



5. SIGNAGE

GreenPath sensors have a visual indication to identify the sensor status and operating mode.



The sensor has two communication modes:

- **Advertising:** no application is connected to the sensor, and it is transmitting periodically its connection data.

- **Active BLE connection:** a user is connected to the sensor via the app. In this mode, the sensor can receive settings and download data from its memory.

The indication that the sensor has an active Bluetooth connection with the app is carried out through the time interval between each signaling. The sensor also has a functionality that allows users to visually identify which device the connection was established with.

This signaling occurs through the command "LOCATE" performed in the application

LOCATE

GreenPath.

BEHAVIOR	DESCRIPTION
LED Flashing every 10 seconds	Sensor without active BLE connection (Advertising only)
LED Flashing every 3 seconds	Sensor has active BLE connection
LED Flashing every second	Sensor in identification mode (LOCATE)

The following table describes the signaling patterns according to each sensor state, where the indication is carried out through the use of different colors. Furthermore, signaling can be done by a single signal (blink) or by a sequence of two signals (blinks) within a short period of time.

STATUS	COLOR OF FIRST SIGNAL	COLOR OF SECOND SIGNAL	DESCRIPTION
1	Green	-	Sensor is recording data
2	Yellow	-	Sensor is recording data and is in active alarm state
3	Green	Green	Sensor is not recording measurements
4	Green	Yellow	Sensor is not recording data and is in active alarm state
5	Yellow	Yellow	Sensor is waiting for the data logging start time
6	Yellow	Yellow	Sensor identification mode (interval between signals of 1 second)
7	Red	Red	Error sensor*
8	Off	Off	Battery change required

* The error signal on the device indicates that an error has been detected in the functioning of the sensor, which compromises its correct functioning.

6. INFORMATION SECURITY

GreenPath sensor have a security system to access the sensor and the data stored in it. Only users with permission to access the sensor will be able to complete the connection and communicate with it. **When connecting to the sensor for the first time, the user will link the device to their app account, ensuring that no other unwanted users can access it.** This ensures that other users do not can connect to the sensor, changing its settings and/or collecting its data.

The Administrator user has permission to create guest users (collaborators). The Administrator can manage the granting of access to sensors linked to their account, individually, for each guest user.

You can set the permission level for each guest user. There are two permission levels: Administrator and Read Only. The user with the Read Only level will be able to connect to the sensor, check its status and read the data stored in the sensor's internal memory. However, they do not have permission to start and end a new record. The Administrator level user has the same permissions as the account administrator, being able to start and end a measurement record, in addition to managing collaborators and access keys.

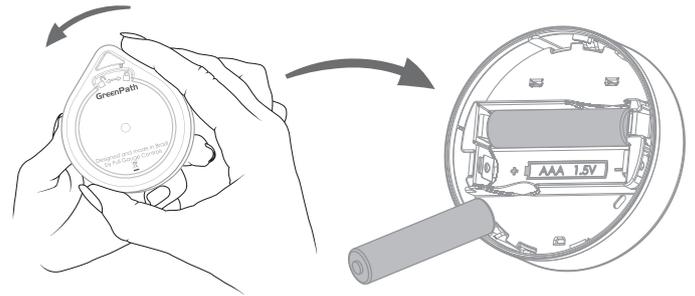


Note: Once the sensor is associated with a user, no other user without a previously granted permission will be able to connect to the sensor.

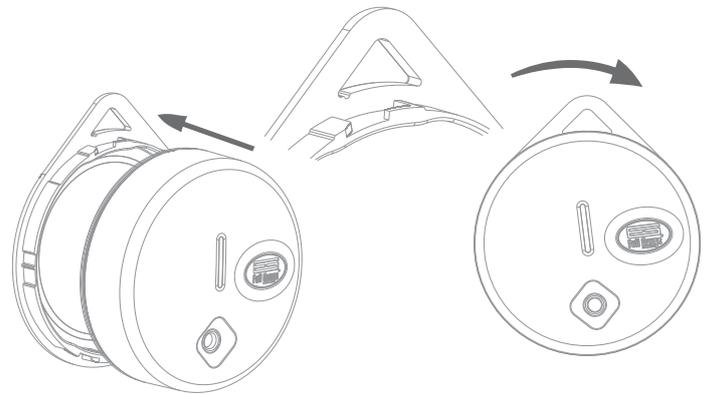
7. BATTERY

GreenPath sensors are powered by two AAA batteries. A difference in the **GreenPath** line is that the battery can be easily replaced after its charge is exhausted, prolonging the life of the sensor.

Inserting and/or changing batteries is carried out by rotating the front part of the sensor counterclockwise until a click is heard. Afterwards, the rear part must be removed, giving access to the batteries. The images below illustrate the process.



After inserting the batteries, connect the back cover to the front, as instructed in the drawing below. The back cover has a small fitting protrusion, the front must be fitted with it slightly and turned counterclockwise. Then, firmly turn the front clockwise until you feel the cabinet closing. This closure is important to ensure protection against humidity entering the sensor's electronic circuit.



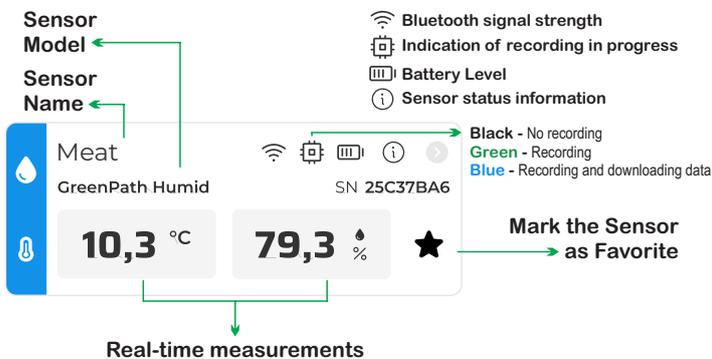
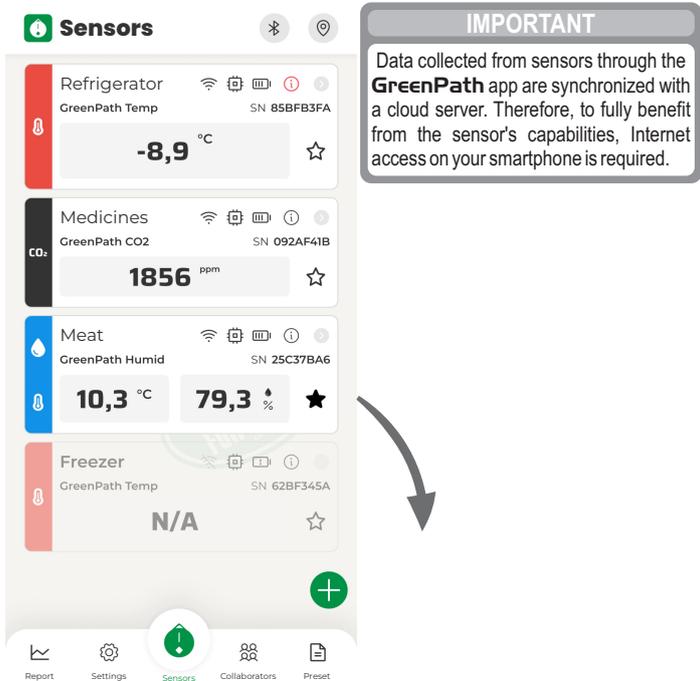
8. OPERATION MODES

GreenPath sensors continue to measure their magnitudes even when they are not recording these measurements in their internal memory. Regardless of whether they have started recording or not, the sensors send the measured values via the Bluetooth signal. These values can be viewed in real time in the **GreenPath** app. On the app's home screen, you can see all **GreenPath** devices within range and track measurements in real time.

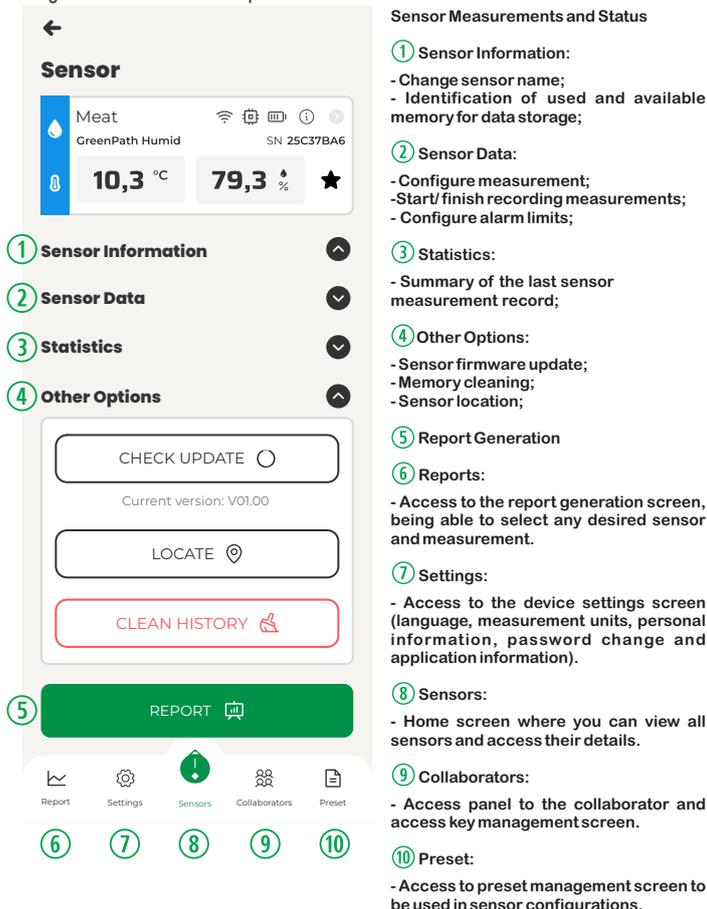
After connecting to the desired device, it is possible to configure the measurement recording parameters and define the desired alarm limits. Once the settings are configured, measurement recording can begin. From that moment on, the sensor will continue to record measurements in its internal memory. These records can be accessed whenever the user connects to the sensor. Furthermore, when the smartphone has internet access, this data is synchronized with the cloud and can be viewed from any location.

9. GreenPath APP

- Download and install the app on your Android or iOS smartphone;
- After installation, the user must open the application and grant access to the Bluetooth and the smartphone's location.
- If the user does not yet have a registered login, they must create an account by accepting the application's terms of use. After creating the account, the user must access the application using their respective login.
- After inserting the batteries into the sensor, it initializes and remains signaling state 4 of the state table. Initially, the sensor will not be linked to any user account, so the first user who connects to the sensor will have the sensor linked to their account. From that moment on, no other unwanted users will have access to it. For temporary access by other users, it is possible to generate access keys with configurable permission and validity of access to the sensor. The administrator user can manage all generated access keys. Once the sensor is associated with a user, no other user without a previously granted permission will be able to connect to the sensor.
- To link the sensor to the user who is accessing it for the first time, an active connection to an Internet network (Wi-Fi or mobile network) is required.
- Once the login process is complete, the application's home screen will be displayed, where it is possible to identify all the sensors that are within range of the smartphone. On this screen, together with the sensor identification, the current measurement of the quantity that the respective sensor is measuring is reported. The figure below shows the information available for each sensor found.
- To select the sensor the user wants to connect to, press on the desired sensor. Then, a new screen is displayed, where, in addition to showing the main sensor information, it is also possible to check the current sensor settings and configure it as desired. On this screen it is also possible to access information regarding the most recent measurement history.

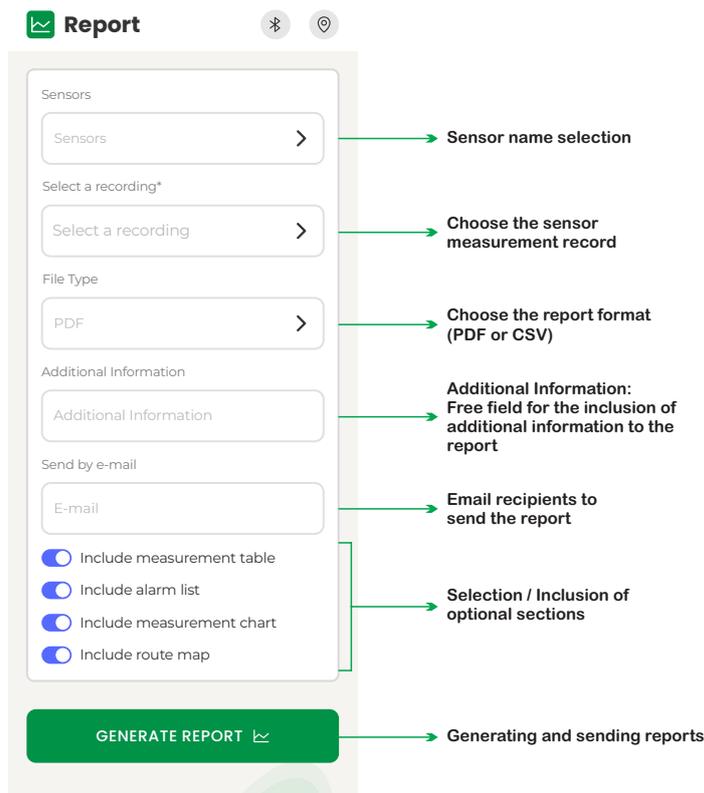


By clicking on the desired sensor, a new screen containing the sensor settings is displayed. The figure below shows a description of the functionalities on the screen.



10. REPORTS

Through the **GreenPath** app, you can generate reports in PDF and CSV formats. Reports are generated and sent by email to all recipients entered in the Email field on the screen. More than one email recipient can be added to the generated report; to do so, use a comma (",") as a separator between email addresses. On the app's report generation screen, you can select or exclude specific sections, such as the event list, alarm list and measurement table. The following image shows information regarding the report generation options.



11. WARRANTY

ENVIRONMENTAL INFORMATION
Packaging: Full Gauge products use packaging made from entirely recycled materials. Please dispose of it through specialized recyclers.
Product: The components used in Full Gauge controllers can be recycled and reused if they are dismantled by specialists.
Disposal: Do not burn or throw controllers in the domestic waste, once they have reached the end of their working life. Follow the current legislation applicable to your area in relation to disposing of electronic waste. Batteries must be disposed of separately from household waste and sent for recycling. Please dispose of in accordance with local environmental laws and guidelines. If you have any questions, contact Full Gauge Controls.

Products manufactured by Full Gauge Controls, from May 2005, have a warranty period of 10 (ten) years direct from the factory and 01 (one) year from accredited retailers, starting from the consignment date on the sales invoice. After this year, the warranty will continue to be honored for purchases from retailers if the device is sent directly to Full Gauge Controls. This period is valid in Brazil. Other countries provide a guarantee for 2 years. The products are guaranteed in the event of a manufacturing fault that makes them unsuitable or inappropriate for the uses to which they were intended. The warranty is limited to the maintenance of devices manufactured by Full Gauge Controls, regardless of any other form of costs, such as any indemnity due to damage caused to other equipment.

WARRANTY EXCEPTIONS
 The Warranty does not cover transport and / or insurance costs for sending products believed to have defects or to have malfunctioned to Technical Support. The following events are also not covered: natural wear of parts, external damage caused by falls or improper packing of products.

LOSS OF WARRANTY
 The product will automatically no longer be covered if:
 - The instructions for use and assembly contained in the technical description and installation procedures listed in the NBR5410 standard are not observed;
 - It is subjected to conditions beyond the limits specified in its technical description;
 - If it is opened up or repaired by a person who is not part of Full Gauge's technical team;
 - The damage which has taken place was the result of a fall, blow or impact, water damage, electrical surge or atmospheric discharge.

USING THE WARRANTY
 To take advantage of the warranty, the customer must send the product properly packed, together with the corresponding purchase invoice, to Full Gauge Controls. The delivery cost for the product is borne by the client. You will also need to send as much information as possible regarding the defect that has been detected, thus making it possible to streamline the analysis, testing and servicing.
 These processes and any eventual maintenance of the product will only be carried out by Full Gauge Controls' Technical Support, at the Company's head office - Rua Júlio de Castilhos, 250 - Zip Code 92120-030 - Canoas - Rio Grande do Sul - Brazil.