COGNIMADE

USER MANUAL

ENVISAFE

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1. INTRODUCTION

EnviSafe is an environmental parameter detection device that integrates various sensors. Its main applications are building automation and environmental monitoring. It is powered via a micro-USB port and is easy to mount on walls or ceilings.

The device can be connected to various Building Management Systems (BMS), home automation systems, and energy consumption monitoring systems via a Wi-Fi connection.

2. DATASHEET

TECHNICAL FEATURES	
Case	100 x 100 x 42 mm – Plastic (ABS)
Mounting Options	Wall-Mounting: Screws, Velcro
Power Source	5VDC – Micro USB
Power Consumption	600mW (via WI-FI)
Configuration	Web Page / Modbus TCP
WI-FI Association	WPS / Web Page
WI-FI Interface	IEEE 802.11 b/g/n 2.4 GHz
Firmware Upgrade	OTA (HTTP/Web Page)
Operating Temperature	-20°C, 60°C

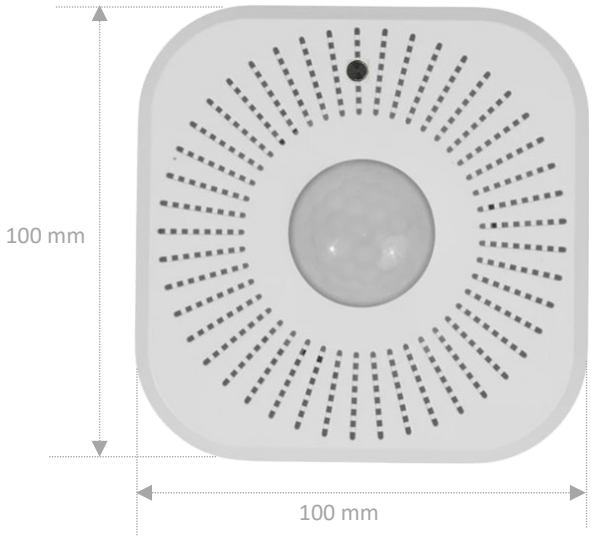

Fig. 1: Front-view of the device

Fig. 2: Side-view of the device

3. MEASURES

MEASUREMENTS*	
Temperature	0°C to +50°C, ±0.35°C
Humidity	10% to 80% RH, ±3.5%
Luminosity	up to 128klx
Presence (PIR)	range 82° - 8m
Air Quality – TVOC	160ppb to 2000ppb, ±25ppb
Air Quality – CO_2	0ppm to 40000ppm
PM1 / PM2.5 / PM10	0µg/m³ to 1000µg/m³
Smoke Detection	Infra-red LED
Sound Pressure Level	up to 128dB, ±1dB
Vibrations	Frequency: 200Hz Noise density: 90 µg√Hz Scale ±2g/±4g/±8g/±16g

** The accuracy of measurements is valid for 5 years. The long-term-drift to which the sensors may be subject considers only a proper use of the device, excluding any possible contact with dust, solvents, fluids, vapour and other substances and materials that can interfere and compromise the measurements.*

3.1. Temperature and Humidity

Temperature and Humidity are sampled every 2 seconds and averaged between data transmissions.

WARNING:
DO NOT obstruct the holes on the enclosure.

3.2. Luminosity and White Light

Luminosity and White Light are sampled every 2 seconds and averaged between data transmissions.
The Luminosity value is filtered by a photo-diode with a frequency-response similar to the human eye, while the White Light is a channel with higher responsivity for a much wider wavelength spectrum.

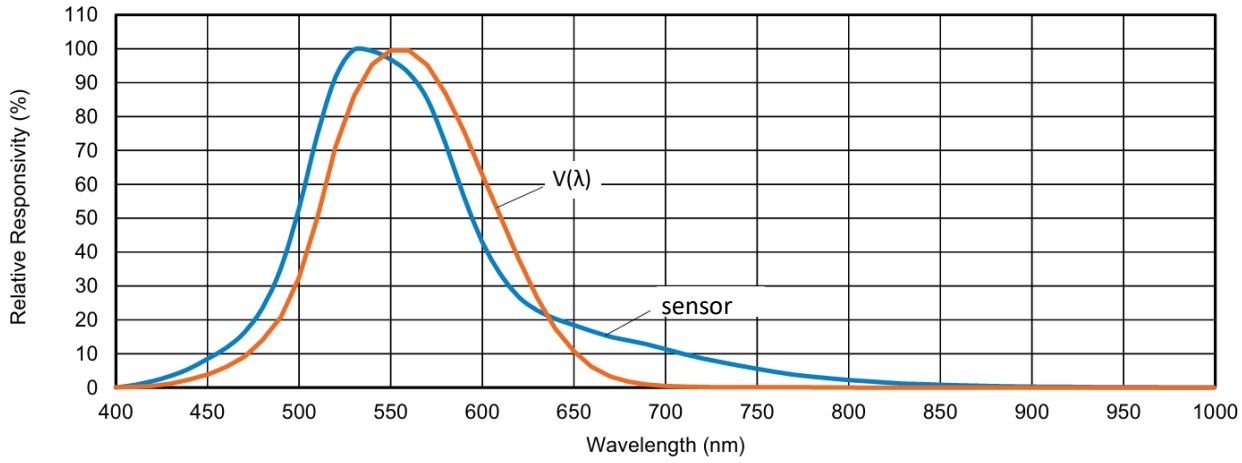

Fig. 3: Spectral Response, Ambient Light Sensor Channel

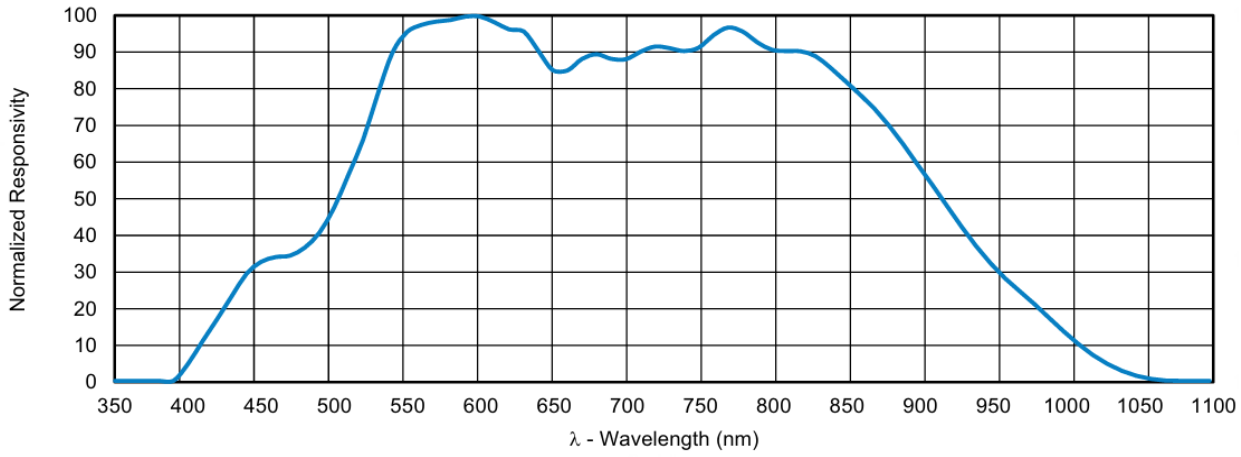

Fig. 4: White Channel Responsivity

WARNING:
DO NOT cover or shade the sensor, choose a suitable place.

3.3. Air Quality - TVOC

The Air Quality is measured as Volatile Organic Compounds concentration (TVOC). The measurement is updated every 5 seconds.
Volatile Organic Compounds (VOCs) are organic chemicals that have a high vapor pressure at ordinary room temperature. They include both human-made and naturally occurring chemical compounds. Most scent or odours are of VOCs. The measurement of their concentration in an indoor environment can be used as an index of air pollution and comfort of occupying people.
It is possible to establish a correlation between TVOC concentration and high levels of carbon dioxide (CO_2) due to human presence, thus calculating an estimate of CO_2 (eCO_2) based on VOC concentration.
Additionally, from the TVOC concentration, an Air Quality Index (AQI) is also calculated.

WARNING:
In order to have accurate measures let the sensor be powered for at least twenty minutes.
DO NOT place the sensor near heat sources, since they can affect the air quality measurement.

3.4. Air Quality - CO_2

The CO_2 concentration is measured by an NDIR sensor every 5 seconds.
The level of carbon dioxide recorded in an indoor environment is used as an indicator of the room's air quality. In fact, exceeding the 1000 ppm CO_2 threshold indicates poor air quality and the need to ventilate the room. EnviSafe can therefore be used to monitor the air quality of rooms, ensuring a healthy environment and promoting the well-being of its occupants.

WARNING:
For proper sensor operation, DO NOT cover or shade the sensor.

3.5. PM1 / PM2.5 / PM10

The presence of particulate matter (PM) is detected by the sensor at 1-second sampling intervals. Particulate matter is classified based on the diameter of its constituent particles:

- PM1: particles with an aerodynamic diameter smaller than 1µm
- PM2.5: particles with an aerodynamic diameter of 2.5µm
- PM10: particles with an aerodynamic diameter smaller than 10µm

High concentrations of fine dust in indoor environments are an indicator of pollution and can cause serious health problems for those exposed.

WARNING:
For proper sensor operation, DO NOT cover or shade the sensor.

3.6. Movement Detection (PIR)

The detection is performed by a PIR sensor.
The coverage distance is 8 meters from the device. A 16-bits counter is incremented for each detection. When the counter value is read, it is reset to zero. Also, an everlasting counter is available. It is reset only after a power-off.
A time window can be set in order to ignore successive detections. After each detection a timer starts. Until it reaches the window interval no other PIR detections are counted.

ATTENTION:
Place the box in a vertical position on a wall or ceiling, with the sensor facing downward, so that the sensor can properly cover the room for motion detection.

3.7. Smoke Detection

An optical sensor detects the presence of smoke. The device does not distinguish between types of smoke; any dirt, dust, or obstruction of the device may prevent accurate detection.

WARNING:
For proper sensor operation, DO NOT cover or shade the sensor.

3.8. Sound Pressure Level

A low-power analog MEMS microphone samples sound waves at a frequency range from 35 Hz to 20 kHz, taking into account the range audible to the human ear. The sound pressure level (SPL), or its intensity, is expressed in decibels (dB).
The sound pressure level can be an indicator of acoustic noise in indoor environments, signalling potentially harmful conditions for human hearing. The comfort threshold is set at 120 dB. Exceeding this threshold can pose health risks, causing discomfort and pain, and in extreme cases, even leading to deafness.
The sound pressure level measurement can also be used to set alarms or control sequences in combination with other sensors, such as the PIR.

WARNING:
For proper sensor operation, DO NOT cover or shade the sensor.

3.9. Vibrations

EnviSafe measures the vibrations of the surface on which it is mounted using a low-power tri-axial accelerometer. Specifically, the sensor calculates:

- Maximum sampling frequency: 200Hz
- Noise density: 90 µg√Hz
- Gravity acceleration scale: ±2g/±4g/±8g/±16g. Currently, EnviSafe is set to ±4g.

4. APPLICATIONS

EnviSafe can be used for all applications involving Modbus TCP fields.
In particular it is well suited for the following applications and markets:

- Energy metering
- Building automation
- Industrial automation
- Environmental monitoring
- Factory 4.0
- Domotics
- Workplace safety
- Surveillance
- Robotics
- Smart Cities

5. INSTALLATION AND INSTRUCTIONS

WARNING:
The installation procedure must be accomplished only by qualified personnels with a proved electrician qualification.
Adopt the specific safety precautions outlined in this manual for proper device installation.

5.1. Mounting and Powering

EnviSafe can be installed on the ceiling or on a side wall. In the case of wall mounting, for proper coverage, the device must be mounted with the connector facing downward. On the back of the device there are the guides for the insertion of the screws for a quick assembly (*fig. 5*).
The device is powered through a Micro-USB port (*fig. 6*).

WARNING:
Make sure the device is mounted correctly before connecting it to the power supply.

Fig. 5: Back of the device; guides for the insertion of the crews

Fig. 6: Micro-USB port for power

5.2. WI-FI Connectivity

EnviSafe supports Wi-Fi connectivity. To connect the device to the wireless network, you can perform the association as follows:

A. Manual association using the physical WPS button on the router and EnviSafe:

1. Turn on EnviSafe;
2. Press the button on EnviSafe for 3 seconds;
3. Press the WPS button on the router;
4. The EnviSafe LED is yellow and flashing, indicating the network search and association phase;
5. When the LED on EnviSafe stops flashing then the device is paired.

B. Association via EnviSafe Web Page (alternative or if there is no physical WPS button on the router)**:**

1. Turn on EnviSafe;
2. Access the EnviSafe Web Page (if it's your first time accessing it, refer to *paragraph 5.3* for configuring access to the Web Page):
   - Log in as an administrator (see *paragraph 7.2*);
3. From the navigation menu, go to the Administration section (see *Network and Wi-Fi* > *Wi-Fi Configuration*, *paragraph 7.4*);
4. Proceed with the connection:
   - If using WPS (router with a physical WPS button):
     - Press the Activate WPS button to proceed with the association;
     - Follow procedure A, starting from step 3;
   - If using WPS (without a physical WPS button on the router):
     - Access the router's Web Page to enable the access point for the association by typing the router's IP address (usually 192.168.1.1 or 192.168.0.1) in the browser;
     - Enter login credentials (the default credentials are on the label on the back of the router);
     - Go to the network settings (usually in the *Wi-Fi Setup* or *Wireless Settings* section) and activate WPS via the virtual button (usually *Activate WPS*);
     - Press the *Activate WPS* button on the EnviSafe Web Page to proceed with the association;

- If using credentials:
    - Manually enter the SSID of the wireless network to which you want to connect the device and the WPA password (available on the back of the modem or consultable through its web interface);
    - Press the *Save Wi-Fi* button to save the settings;

WARNING:
The router's WPS mode is usually active for 120 seconds. If the connection is NOT established within this time frame, the WPS mode automatically disables for security reasons.

5.3. Web Page access Configuration

To access the EnviSafe Web Page, you need to configure your network. When the device is not yet associated with an access point, it functions as an access point itself:

1. Turn on EnviSafe;
2. Search for the device's network among the available networks: the SSID is *EnviSafeWifi_<MAC ADDRESS>*, where <MAC_ADDRESS> is the device's MAC address;
3. Enter the WPA password: the default password is *envisafe*;
4. Access the device's Web Page by entering the IP address *192.168.4.1* in the browser's search bar.

WARNING:
The SSID and WPA password associated to the device are default credentials. Once you complete the first login to the Web Page, you can connect the device directly to the local network.

5.4. LED

LED	DESCRIPTION	DETAILS
	Flashing	WI-FI data transmission
	Flashing	WPS pairing phase
	Flashing	Condition of no association with an access point
	Steady	Error condition (device malfunction)

6. MODBUS TCP PROTOCOL

All analog values related to the measurements taken by the sensors integrated in EnviSafe are returned as IEEE 32-bit floating point numbers. For each analog measure one statistic is computed: it includes average, minimum and maximum value in the polling window, between a Modbus poll and the next one.
The device implements a Modbus server polling on port 502.

INPUT REGISTERS					
NOME	**ADDR.**	**TYPE**	**LENGTH**	**UOM**	**DESCRIPTION**
Temperature	0	Float	2	°C	
Humidity	2	Float	2	%	
Luminosity	4	Float	2	lux	
White Light	6	Float	2	lux	
CO_2	8	Uint16	1	ppm	
AQI	9	Uint16	1	[1..5]	Air Quality Index (UBA)
TVOC	10	Uint16	1	ppb	
eCO_2	11	Uint16	1	ppm	Estimated CO_2 from TVOC
SPL Avg	12	Uint16	1	dB	Sound pressure level computed over 62.5 ms windows. Avarage of the Modbus polling period.
SPL Avg	13	Uint16	1	dBA	Sound pressure level computed over 62.5 ms windows. Frequency weighted scale accounting the human hearing response frequency. Avarage of the Modbus polling period.
SPL Max	14	Uint16	1	dB	Sound pressure level computed over 62.5 ms windows. Maximum over the Modbus polling period.
SPL Max	15	Uint16	1	dBA	Sound pressure level computed over 62.5 ms windows. Frequency weighted scale accounting the human hearing response frequency. Maximum over the Modbus polling period.
SPL Frequency	16	Uint16	1	Hz	Frequency peak of the Max
Acceleration Max	17	Uint16	1	mm/s^2	Absolute value of the acceleration peak
Acceleration RMS	18	Uint16	1	mm/s^2	Acceleration RMS calculated over 640 ms windows. Maximum in the Modbus polling period.
Vibration RMS	19	Uint16	1	mm/s^2	Acceleration RMS calculated over 640 ms windows of only the peak frequency component. Maximum in the Modbus polling period.
Vibration frequency	20	Uint16	1	Hz	Frequency of the peak (see previous register definition)
Alarms	21	Uint16	1		bit 0 = movement bit 1 = smoke (automatically reset after reading the register)
Product String	100	Char[]	4		
Firmware Version	104	Uint16	1		
Hardware Version	105	Uint16	1		
Sensors Status	106	Uint16	1		Bitmask (data valid: bit = 1): bit 0: Temperature + Humidity bit 1: Luminosity bit 2: Smoke bit 3: PIR bit 4: TVOC
Sensors Fault	107	Uint16	1		Bitmask (fault: bit = 1): bit 0: Temperature + Humidity bit 1: Luminosity bit 2: Smoke bit 3: PIR bit 4: TVOC
Uptime	108	Uint16	2	[min]	minutes
Temperature Min.	110	Float	2		
Temperature Max.	112	Float	2		
Humidity Min.	114	Float	2		
Humidity Max.	116	Float	2		
Luminosity Min.	118	Float	2		
Luminosity Max.	120	Float	2		
CO_2 Min	122	Float	1		
CO_2 Max	124	Float	1		
TVOC Min.	126	Float	1		
TVOC Max.	128	Float	1		

PIR Counter	130	Uint16	1		PIR detection counters from power-on
PIR Calibration	131	Uint16	1	[%]	PIR calibration status rate
Smoke Calibration	132	Uint16	1	[%]	Smoke calibration status rate
PIR_ADC_Val	134	Uint16	1		Debug only: PIR internal value
Smoke_ADC_Val	135	Uint16	1		Dubug only: Smoke internal value

HOLDING REGISTERS					
NAME	**ADDR.**	**TYPE**	**LENGTH**	**DEFAULT**	**DESCRIPTION**
Serial Number	0	Char[]	4		Serial Number
Modbus ID	4	Uint16	1		Modbus Slave ID (not used)
SSID	5	Char[]	16		Current Access Point
WPA Key	21	Char[]	32		Current WPA Password
Cal_PowerUp_Flag	53	Bool	1		Calibrate at every power-on
PIR Offset	54	Uint16	1		PIR calibration constant
Smoke Offset	55	Uint16	1		Smoke calibration constant
PIR Thresh	57	Uint16	1	120	PIR sensibility threshold
Smoke Thresh	58	Uint16	1	8	Smoke sensibility threshold
PIR Persistence	60	Uint16	1	50	PIR persistence threshold
Smoke Persistence	61	Uint16	1	2	Smoke persistence threshold
Luminosity Offset	63	Float	2	0	Luminosity lightpipe compensation offset
Luminosity Coeff	65	Float	2	3	Luminosity lighpipe compensation factor
White Light Offset	67	Float	2	0	White Light lightpipe compensation offset
White Light Coeff	69	Float	2	3.36	White Light lighpipe compensation factor
Temperature Offset	71	Float	2	0	Temperature compensation offset
Temperature Coeff	73	Float	2	1	Temperature compensation factor
Humidity Offset	75	Float	2	0	Humidity compensation offset
Humidity Coeff	77	Float	2	1	Humidity compensation factor
Force Calibration	1000	Bool	1		Write 1 to force a re-calibration
Reboot	1001	Bool	1		Write 1 to force a reboot
Default Contiguration	1002	Bool	1		Write 1 to force a reset of all configuration **WARNING!** SSID, WPA Key and Calibration Values will be lost and reset to default.

7. WEB PAGE

The Web Page allows for configuration and administration of EnviSafe. To configure the device, it is necessary to log-in to the Page as an administrator.

7.1. Dashboard Live Info

Upon each login, the user is presented with a dashboard displaying the results of measurements taken by EnviSafe, with the page automatically refreshing every 3 seconds. The displayed values are derived from the real-time readings of the individual sensors integrated into the device, within the device's uptime interval (*uptime*).

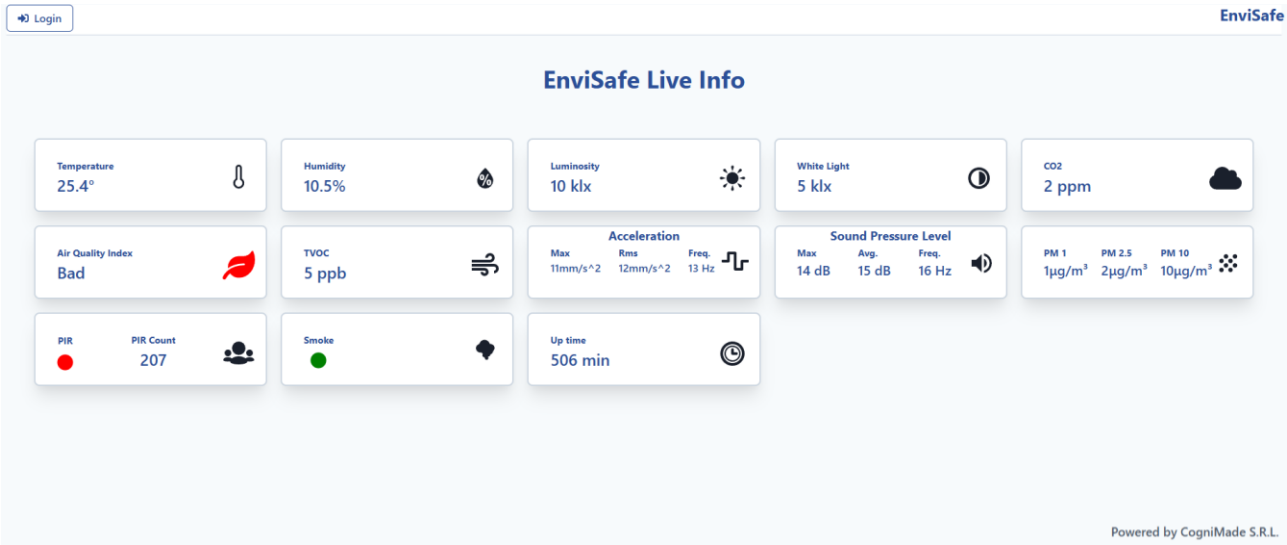

Fig. 7: Dashboard Web Page EnviSafe

LABEL	DESCRIPTION
Temperature	Temperature [°C]
Humidity	Humidity [%]
Luminosity	Luminosity [lux]
White Light	White Light [lux]
CO_2	CO_2 level [ppm]
Air Quality Index	Air Quality Index based on TVOC level [mg/m³]
TVOC	Concentration of Volatile Organic Compounds [ppb]
Acceleration	Vibration Acceleration: • Absolute value of the peak vibration acceleration (*Max*) • RMS acceleration (*Rms*) • Vibration acceleration frequency (*Freq.*)
Sound Pressure Level (SPL)	• Sound pressure level (*Max*) • Average (*Avg.*) • Frequency peak of the maximum value (*Freq.*)
PM1 / PM2.5 / PM10	Presence of fine particulate matter: • Diameter smaller than 1µ (PM1) • Diameter smaller than 2.5µ (PM2.5) • Diameter smaller than 10µ (PM10)
PIR / PIR Count	Motion detection alarm: 🟢 NO motion detected 🔴 ALARM: motion detected The counter (*PIR Count*) indicates the number of alarms recorded by the device during its uptime, based on checks performed every 3 seconds (with automatic dashboard refresh). The *PIR Count* is reset each time the Web Page is accessed.
Smoke	Smoke detection alarm": 🟢 NO smoke detected 🔴 ALARM: smoke detected The sensor alarm status is checked every 3 seconds (interval for automatic dashboard refresh).
Uptime	Device uptime [min].

AIR QUALITY INDEX				
	LEVEL		TVOC (mg/m³) *	DESCRIPTION
	Very Good	**1**	<0.3	Very good air quality Clean air (ideal condition for health)
	Good	**2**	0.3 – 1.0	Good air quality Satisfactory air cleanliness (carries little or no health risk)
	Medium	**3**	1.0 – 3.0	Moderate air quality Perceptible comfort issues (exposure for NO more than 12 months)
	Poor	**4**	3.0 – 10.0	Poor air quality Significant comfort issues (exposure for NO more than 1 month)
	Bad	**5**	>10.0	Very poor air quality Unacceptable conditions for health (it is recommended to avoid any outdoor activities)

**Conversion from mg/m3 to ppm for many common TVOC is by the factor approximately 0.5 (e.g., 10mg/m3 equals approximately 5ppm). Conversion from ppm to ppb is by the factor 1000 (e.g., 0.1ppm equals 100ppb).*

7.2. Login

To configure EnviSafe via Web Page, the user must log-in to the Page as an administrator.
The default password is ***admin***. However, it is possible to personalize this password after the first login, within the *Administration* section of the Page (see *section 7.4*).

WARNING:
If the user forgets the personalized password required to access the Web Page, they can reset the password and restore the default one by holding the button on the side of the device for 10 seconds. Once access is restored, the password can be modified again.

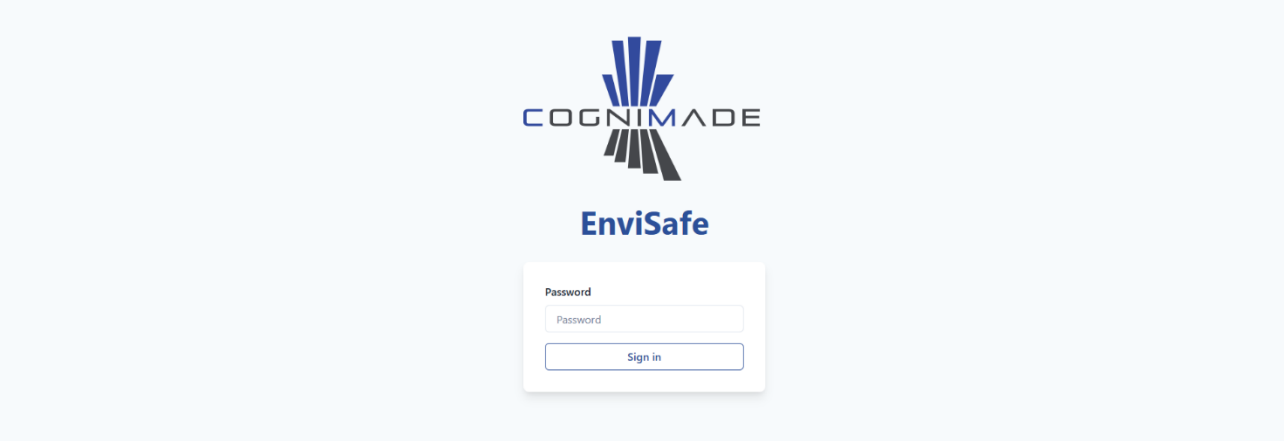

Fig. 8: Web Page login

7.3. Configuration

The page dedicated to device configuration (*Config*) allows the setting of custom coefficients and thresholds by modifying the default values so that the sensors integrated into the device can read and return measurements according to the user's specific needs.
The measurement returned by the device to the user (y) is the sum of the value read by the sensor (x), corrected according to the specific compensation factor (*coeff*), and the calibration constant (*offset*):

$$y = coeff * x + offset$$

The *Upper Threshold* is a limit that, when exceeded positively, or negatively in the case of the *Lower Threshold*, triggers an alarm event, meaning the transmission of a notification indicating that the threshold has been surpassed. For some measurements, the *Lower Threshold* is not available.
This section of the Web Page also allows you to manage the MQTT events related to the device's activity. The user can enable each sensor for data transmission (*Enable MQTT Events*) in case of an alarm or event, and set the time interval [s] that must pass between the sending of one notification and the next-one in case of a persistent event (*Event Mask Interval*).

In this specific section of the Web Page, the user can also perform other actions:

- *Force Calibration*: restarts the calibration of the smoke detector. This operation must be carried out in the absence of smoke.
- *Reboot*: to restart the device
- *Reset*: to restore the default configurations.

WARNING:
The reset with the restoration of default settings is applied to all calibration values. The reset is also applied to the WPS association settings, including SSID and WPA Key, as well as to Web Page access settings, restoring the default password.

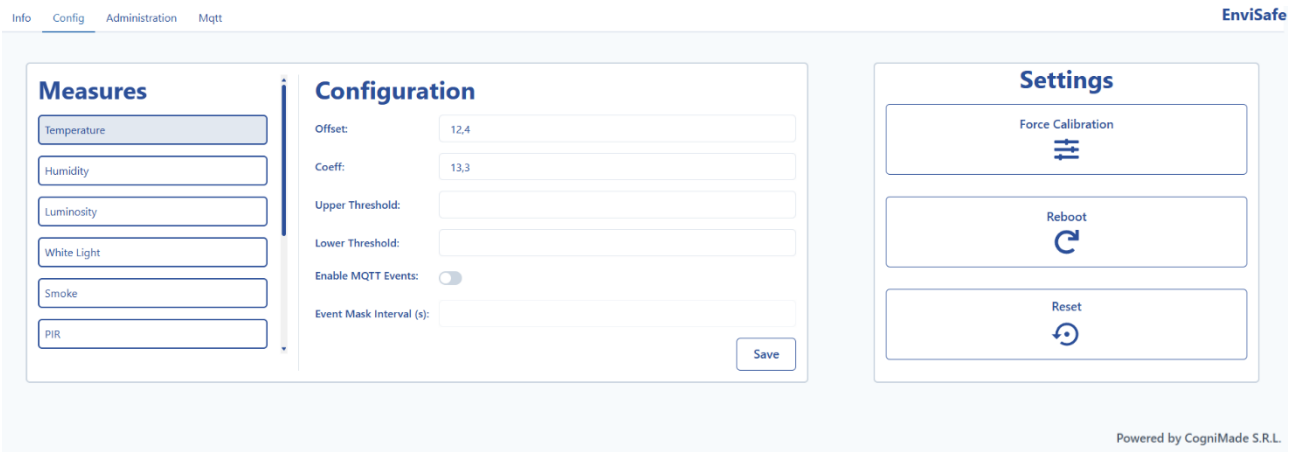

Fig. 9: Configuration page, Web Page

7.4. Administration

Administration is the section of the Web Page that allows the user to:

- View specific device information (*Device Info*), such as Firmware and Hardware version, product type (e.g., *Lite* version of the device), serial number, as well as the associated IP address and MAC address;
- View any sensor faults (*Sensor Fault*), with an alarm in case of malfunction;
- Change the login password for the Web Page (*Login Settings*);
- Perform a firmware update for the device (*Firmware Update*), by uploading a .bin file or searching for automatic updates online;
- Consult and configure the settings for connecting the device to a WI-FI access point, either through WPS mode (*Network and WI-FI – WI-FI Configuration*) or by setting the SSID and WPA password;
- Configure network settings such as IP address, Netmask, and Gateway (*Network Settings*).

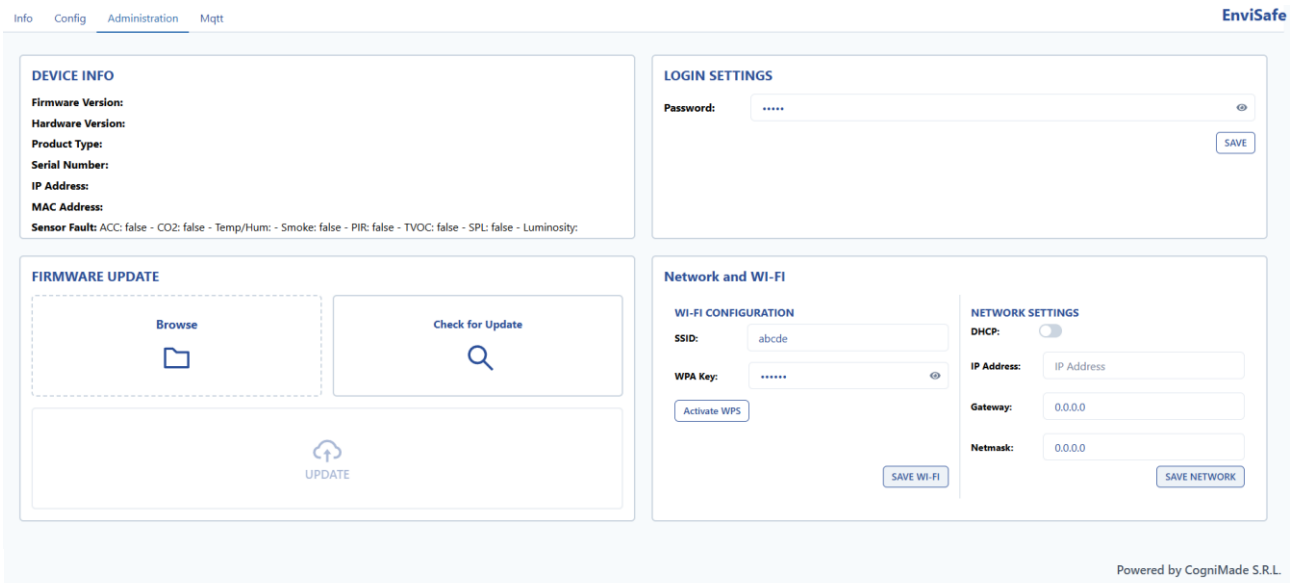

Fig. 10: Administration section, Web Page

7.5. MQTT Configuration

This section allows you to configure the device for data transmission using the MQTT protocol. It is possible to set a custom authentication method:

- Authentication with credentials (*Login*): username and password;
- Authentication via certificate (*Certificate*). Upload of three files is required: .CA, .crt, .key;
- *Plain*, without credentials or certificate.

For the MQTT configuration, and regardless of the authentication method selected, the user is required to enter the MQTT data transmission interval [s], the broker URL, and the topic. For more secure data transmission, the user can also enable the TLS transfer protocol.

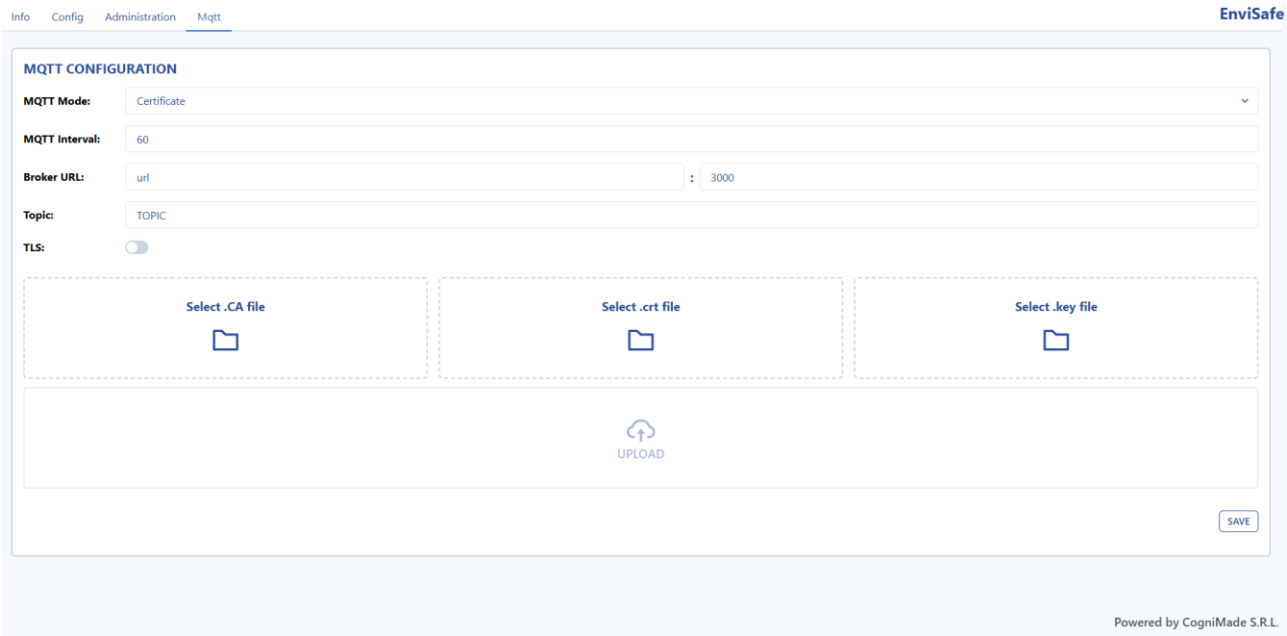

Fig. 11: MQTT Configuration, Web Page

8. TROUBLESHOOTING

PROBLEM	DESCRIPTION	ACTION
HEATING	The device is hot after powering it.	Unplug the power cable and contact CogniMade Srl.
NOT TURNING ON	The device seems to not turn on. Display is switched off after pressing the button.	Unplug the power cable and contact CogniMade Srl.
NOT RESPONDING	The device does not respond to Modbus queries.	Check the IP configuration for Modbus TPC and Serial Configuration for Modbus RTU.
NOT WORKING	The device does not respond with correct values or the output relay does not change its status.	Unplug the power cable and contact CogniMade Srl.

9. SAFETY PRECAUTIONS

The personnel responsible for installing, connecting cables for, commissioning, maintaining, troubleshooting and replacing CogniMade products should be qualified and trained to master the correct operation methods and the knowledge of safety precautions.

WARNING:

The safety precautions provided in this document do not cover all the safety precautions. CogniMade shall not be liable for any consequence caused by the violation of the safety operation regulations and design, production, and usage standards.

9.1. Personnel requirements

Operation personnel must meet the following requirements:

- Receive professional training;
- Read through this document and follow all the precautions;
- Be familiar with the safety specifications about the electrical system;
- Wear proper personal protective equipment (PPE) during any operation on the device, in compliance with laws and regulations in terms of personal health and protection.

9.2. Installation

During the installation of the device:

- Ensure that the device is not connected to a power supply or powered on before finishing installation.
- Ensure that the device is installed in a well-ventilated environment.
- Ensure that the device is well mounted, fasten to the wall with screws, before connecting it to the power supply.
- Ensure that the device is well mounted, fasten to the wall with screws, before let people walking under or in the same room where it is placed.
- DO NOT use damaged power coords or plugs, or loose electrical sockets.
- Before connecting cables to the device, ensure that it is secured in position and not damaged in any way. Otherwise, electric shocks or fire may occur.
- Ensure that all electrical connections comply with local electrical standards.
- High voltage may cause an electric shock, which results in serious injury, death or serious property damage from the device in operation. Strictly comply with the safety precautions.

9.3. Maintenance

Observe the following safety precautions during the maintenance of the EnviSafe device:

- High voltage may cause an electric shock, which results in serious injury, death or serious property damage from the device in operation. Prior to maintenance, power off the device and strictly comply with the safety precautions.
- Temporary warning labels or fences must be placed to prevent unauthorized people entering the site.
- Observe electrostatic discharge (ESD) precautions during maintenance.

9.4. Usage

For a proper use of EnviSafe:

- DO NOT open the device case. The warranty will be void if the case is opened.
- DO NOT scribble on, scratch, damage, or block any component of the device.
- DO NOT touch the connector of the case with wet hands.
- DO NOT cover the light/luminosity sensor.
- DO NOT drop or cause an impact to the device.
- DO NOT place the device near or inside heating devices of any kind.
- DO NOT use your device near pacemaker, as it can interfere with the peacemaker.

- DO NOT use your device in a hospital or near medical equipment that can be interfered with by radio frequency.
- DO NOT use your device in potentially explosive environments.

9.5. Cleaning

Observe the following cleaning precautions to avoid compromising the functionality of EnviSafe:

- DO NOT spray the device with water or any detergent.
- DO NOT flush the device with water.
- DO NOT use liquid or steam jets near electrical components.
- DO NOT use abrasive cleaners, scouring pads or strong oxidizing agents on any part.
- DO NOT autoclave the device.
- Use a soft cloth or tissue and wipe the device external surface.

***Important information for correct disposal of the product in accordance with EC Directive 2002/96/EC**. At the end of its working life, the product must not be disposed of as urban waste. It must be taken to a special local authority differentiated waste collection centre or to a dealer providing this service. Disposing of a household appliance separately avoids possible negative consequences for the environment and health deriving from inappropriate disposal and enables the constituent materials to be recovered to obtain significant savings in energy and resources.As a reminder of the need to dispose of household appliances separately, the product is marked with a crossed-out wheeled dustbin.*

10. DISCLAIMER

CogniMade shall NOT be liable for any consequences caused by any of the following events:

- Transportation damage.
- Violation of the storage requirement specified in this document.
- Incorrect storage, installation or use.
- Installation or use by unqualified personnel.
- Failure to obey the operation instructions and safety precautions in this document.
- Installation or use in environments which are not specified in related international standards.
- Operation in extreme environments which are not covered in this document.
- Operation beyond specified ranges.
- Unauthorized modifications to the product or software code or removal of the product.
- Device damage due to force majeure (such as lightning, earthquake, fire and storm).
- The warranty expires and the warranty service is not extended.

11. CONFORMITY DECLARATION

EnviSafe satisfies the relevant and mandatory CE directive 2014/53/EU with the application of the following product standards (for details see *Annex A – Declaration of Conformity*):

STANDARD	TITLE
EN 62311:2008 **IEC 62311:2007**	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz – 300 GHz)
EN 61010-1:2010 **IEC 61010-1:2010**	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
EN 301 489-1 V2.2.3	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements; Harmonised Standards for Electromagnetic Compatibility
EN 301 489-17 V3.2.4	Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband Data Transmission Systems; Harmonised Standards for Electromagnetic Compatibility
EN 300 328 V2.2.2	Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz band; Harmonised Standard for access to radio spectrum

12. WARRANTY

Subject to the exclusions contained below, CogniMade Srl warrants EnviSafe to be free from defects in materials and workmanship under normal consumer usage for a period of one (1) year from the date of original purchase. This Limited 1 Year Warranty is a consumer's exclusive remedy and is subject to the following exclusions.

NORMAL WEAR AND TEAR	Periodic maintenance, repair and replacement of parts due to normal wear and tear.
ABUSE AND MISUSE	Defects or damage that result from: • Improper operation, storage, misuse or abuse, accident or neglect, such as physical damage (cracks, scratches, etc.) to the surface of the product resulting from misuse; • Wrong power source voltage, or power source overvoltage and overcurrent events, also for a limited amount of time; • Contact with liquid, water, rain, extreme humidity or heavy perspiration, sand, dirt or the like, extreme heat, or food; • Use of this product(s) for commercial purposes or subjecting the product(s) to abnormal usage or conditions; • Other acts which are not the fault of EnviSafe.
UNAUTHORIZED MODIFICATION	Defects or damages resulting from services, testing, adjustment, installation, maintenance, alteration or modification in any way by someone other than CogniMade Srl or its authorized service centers.

ALTERED PRODUCTS	• Products or accessories with serial numbers or date tags have been removed, altered, or obliterated; • Broken seals or that show evidence or tampering; • Mismatched board serial numbers; • Non-conforming or different housings, or components.
COMMUNICATION INTERFACE	Defects, damage or the failure of products caused by improper use of the communication interface, interferences, electrical discharges, electromagnetic interferences on the communication cables.

If CogniMade Srl deems the claim to be warrantable, it will, at its sole option, repair, replace or refund the purchase price of any EnviSafe products. Product replacement will be with a functionally equivalent reconditioned / refurbished / pre-owned or new product, accessory or part.
You will receive instructions on how to ship any products or accessories at your expense, to an authorized repair center. To obtain service, you must include:

- a copy of your receipt, bill of sale or other comparable proof of purchase;
- a written description of the problem;
- the location where the device was installed, with the address;
- phone number and email address.

13. ASSISTANCE

For assistance or support contact CogniMade Srl using the following contacts:

- E-mail address: support@cognimade.com
- Phone number: (+39) 0239286731

ANNEX A

EC Declaration of Conformity

CogniMade s.r.l.
Via Cristoforo Colombo, 10/A
20066 Melzo (MI)
P.IVA e C.F.09277650967

REA 2080304
Reg. Imprese di Milano
Cap. Soc. €10.000
http://www.cognimade.com

EC Declaration of Conformity

According to RED directive 2014/53/EU

The undersigned Leonardo Costa declares under its sole responsibility that the following product:

Name: **EnviSafe**

Revision: **1**

Description: **Building automation device with sensors for environmental parameters, with radio Wifi 2.4 GHz connectivity**

manufactured by:

CogniMade Srl – via Cristoforo Colombo, 10/A – 20066 Melzo (MI)

complies with the essential requirements of the EU directive:

Directive 2014/30/EU (RED)

The following harmonised standard and technical specifications have been applied:

Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques:

EN 300 328 V2.2.2

Electromagnetic Compatibility standard for radio equipment:

EN 301 489-1 V2.2.3

EN 301 489-17 V3.2.4

Safety requirements for electrical equipment for measurement, control, and laboratory use:

EN 61010-1:2010

IEC 61010-1:2010

Human exposure restrictions for electromagnetic fields (0 Hz -300 GHz)

EN 62311:2008

IEC 62311:2007

Melzo (MI), Italy – December 13th, 2024

Leonardo Costa – Managing Director

Leonardo Costa

CogniMade Srl

Via Cristoforo Colombo 10/A, 20066 Melzo (MI), Italy

Phone Number: +39 0239286731

E-mail: info@cognimade.com

Web Site: www.cognimade.com