Nuvap N2Health

ProSystem Series

User Manual

Summary

1. Introduction

This user manual provides instructions for the correct installation and use of the Nuvap N2Health device - ProSystem series.
Both the manual and the product described are copyrighted; all rights reserved. Therefore, the user manual cannot be reproduced in whole or in part without the formal permission of Nuvap.

2. Device

Nuvap N2Health is a multisensor device that allows continuous monitoring of 11 environmental parameters:

- Temperature (resolution 0,1°C, range from -40 to +120 °C)
- Relative Humidity (resolution 1% Rh, range from 0 to 100 %Rh)
- TVOC volatile organic compound (resolution 1 ppb up to 2008 ppb, range da 0 to 60000 ppb)
- Carbon dioxide (resolution 50 ppm up to 5000 ppm, range from 0 to 10000 ppm)
- Carbon monoxide (resolution 1 ppm, range from 0 to 5000 ppm)
- Particulate matter, (resolution 1 ug/m3, range from 0 to 1000 ug/m3), granularity:
    - PM 1
    - PM 2,5
    - PM 10
- Ozone (resolution 0,5 ppm , range from 0 to 5 ppm)
- Nitrogen dioxide (resolution 0,1 ppm , range from 0 to 30 ppm)
- Formaldehyde (resolution 0,5 ppm , range from 0 to 10 ppm)

In addition to detecting the parameters listed above, the device performs a calculation based on Nuvap algorithms to build the synthetic Nuvap Index indicator. The Nuvap Index allows to identify the level of healthiness of the environment in which the device is placed, with a value between one and ten (one indicates the "Poor" air quality level and ten indicates an "Excellent" quality).

The device continuously measures the detected parameters. Approximately every 15 minutes it transmits the aggregate data (5 values per each parameter) to the Nuvap cloud platform:

- Minimum value of the last 15 minutes
- Maximum value of the last 15 minutes
- Average value (depending of the parameter the average is weighted based over previous sampled values)
- Value at the beginning of the sampling period
- Value at the end of the sampling period

The data, in addition to being transmitted to the cloud, can be saved in the internal memory of the device, which allows to keep up to 30 days of historical data. In case of lack of connectivity, the data are locally stored, until they are transmitted to the cloud (when the connectivity is restored).

The device is equipped with two connectivity technologies for data transmission:

- WiFi 2.4Ghz 802.11 b/g authentication WPA PSK
- LTE Cat M1/Cat NB1/EGPRS 850/900/1800/1900MHz (micro SIM - pre-installed)

The BTLE connectivity protocol is used only for the configuration and commissioning phase of the device.

The N2Health device has an internal battery that allows operation even in the absence of electricity for about 2 hours.

Device components:

- External Power supply (to be connected on the back of the device, next to the power button)
- Power button (On/Off)
- Touch Button (the top of the device)
- Led
- Light guide (along the perimeter of the top of the device)
- QrCode (placed at the bottom of the device)

3. Nuvap platform and mobile app for smartphones

Nuvap Platform

The device is connected to the Nuvap platform through the internet connectivity. Platform guarantees data storage and secure access to the Nuvap services and devices by the ProSystem solution's users.

The platform provides the following main services:

- Device management
- User management
- Collection and elaboration of the sensors' data
- Value added services, analytics and historical data series

The platform can be used through a web browser and can be reached at the public link:
https://my.nuvap.com/

Smartphone application

The Nuvap solutions also include a mobile app (both iOS and Android) enabling the access to a list of services.

- Login
    - o New account registration
    - o Service access
- Home
    - o Device list - configured
    - o Data visualization - configured device
    - o Historical charts - monitored parameters
    - o Alerts/alarms visualization
- Device management
    - o Configuration - new devices
    - o Modification - configured devices
- Account
    - o Account password change
    - o Personal data modification

4. Device installation

The Nuvap N2Health device operates in indoor environments with temperatures between -5 and +40 ° C and a relative humidity level between 20% and 80%.

The device can be desktop mounted and its installation simply requires its positioning on a flat surface, between 1.1 and 1.7 m above the floor, in places where occupants usually stay.

The device must be positioned at least 1 meter at least 1 m away from electromagnetic sources (electronic equipment), doors, windows and air / exhaust vents.

5. Device configuration

Once installed, the device must be powered and configured on the Nuvap cloud platform. Make sure you have all the required items to set up the connection, depending on the mode you choose:

- Configuration with WiFi connectivity: have the SSID name and WiFi authentication password. The device supports the types of WiFi networks indicated in the 'The Device' section of this manual.

- Configuration with mobile connectivity: the SIM is supplied pre-installed by Nuvap, during the configuration phase you will be asked to enter the APN name (iot.1nce.com).

For the configuration it is necessary to be equipped with a smartphone with integrated camera and BTLE connectivity (bluethooth).

Before proceeding with the configuration, make sure you have a Nuvap account and the Nuvap application installed on your mobile device. Otherwise, download the application and register your account following the wizard.

In order to configure the device proceed with the following steps:
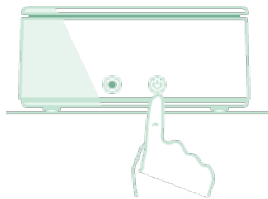
Connect the device to the mains via the supplied power supply and switch on the power button as shown in the picture. (Warning: if the device emits a short tone (half a second) it means that the battery is low. Leave the device switched on and connected to the mains for at least 4 hours and then repeat the procedure).

Wait for the light guide on the top of the device (see the picture) to switch on. When the blue light turns on, open the application on the mobile device and select the item "add device" from the "Device Management" menu. (Attention: If the indicator light emits a green light, perform the "Reset" procedure. When the indicator is red, contact Nuvap technical support).

The application will guide the user through the configuration procedure. At the end, a green light signal will be emitted. If the procedure is not successful, the light signal will be yellow. In this case, consult the "Sound and light signals" section of this manual.

6. Device Reset

To be configured, the device must be in "waiting for configuration" state. If it is not (or if it is necessary to change the parameters of the WiFi network), it is necessary to reset the device through the following procedure:

- If already powered, turn the device off and on again using the power button
- Wait 2 minutes for the device to activate the features

- With the palm of your hand, press the touch button and keep it pressed for 15 seconds (picture).
- When the blue light guide is turned on, release the touch button.
- When the light guide flashes blue, it shows that it is in the "configuration waiting" state. To avoid inadvertent resets, this option is automatically disabled 1 hour after switching on.

7. Sound and light notifications

Light notification:

- blue light flashing every 5 seconds: waiting for user device configuration
- green light on for 2 seconds: device configuration notification
- green light turns on for 0.5 seconds: start of measurement cycle
- yellow light flashing for 0.5 seconds: generic error and / or no connection to the internet. Check the correct functioning of the WiFi hotspot or SIM mobile network
- 5 yellow light flashes of 0.5 seconds each: wrong WiFi network password, re-configure the device
- Red light: fatal error, contact Nuvap support

LED signals:

- steady light: device powered
- intermittent flashing for 3 seconds: device startup procedure

Sound notification:

- 0.5 second tone emission: low battery. Connect to the mains and wait for complete charging. If the battery is completely discharged, it takes at least 4 hours to fully charge. Warning: if the battery of the device is completely discharged, the device does not perform measurements and does not transmit data to the platform during the recharging phase.

8.   Maintenance

The device does not require software maintenance, all software updates are automatic, remotely managed by Nuvap that keeps the device updated to the latest firmware version. Remote maintenance is a service provided by Nuvap. Please refer to your sales representative for more information about this service.

For each device, the calibration certificate issued by the manufacturer may be requested, by sending an email to support@nuvap.com indicating the MAC and serial number - SN - indicated on the label on the back of the device.

Cleaning the device requires a few steps:

- Unplug the power cord before starting cleaning.
- Use a clean sponge or an antistatic cloth wet with a non-abrasive solution and a few drops of warm water.
- Dry with a soft cloth and reconnect the device to the mains.
- Do not wet the device directly and do not use detergents on the surface to avoid electric shock and damage.

9.   Disposal

Do not throw the device in the waste bin. The product has been designed to allow an appropriate use of the components and the recycling of materials. Be sure to dispose of or recycle your device in accordance with local laws and regulations regarding the disposal of electronic products.

10. Certification standards

Model: NVP220

The device is manufactured by Nuvap SPA, with headquarters in Via Pietro Giannone, 9 20154 Milan and VAT number 02137180507. We declare that this device complies with the essential requirements and other relevant provisions established by the directives:

LOW VOLTAGE DIRECTIVE: 2014/35/EU
EMC DIRECTIVE: 2014/30/EU
RED 2014/53/EU
It is stated that the following standards and / or specifications have been applied:

IEC 61010-1:2010 e EN 61010- 1:2010 EN 61326-1:2013
ETSI EN 301 489-1 V2.1.1
ETSI EN 301 489-17
V3.1.1, ETSI EN 300 328 V2.1.1 (clause 5.4.9.2.2)

11. Operating conditions

The device is designed to work under the following environmental conditions:

- Max altitude 2000 m
- Operating temperature (-5 ° C to +40 ° C)
- Storage temperature (from -5 ° C to +40 ° C)
- Charging temperature (-5 ° C to +35 ° C)
- Operating humidity <90%
- Power supply voltage (+5 V dc)
- Overvoltage category: "II"
- Pollution degree: "2"
- Rated for protection according to IEC 60529: "IP20"

12. Warnings

Read this safety information carefully before using the device.

Nuvap N2Health is a versatile solution for a representative monitoring of air quality and therefore should not be understood as a safety / alarm or scientific measurement tool:

- It is not a measuring instrument and therefore cannot be used to establish compliance with legal parameters regarding the presence of environmental pollutants. It is not a substitute for professional measurements and technical expertise.
- It is not able to monitor the air quality in environments that host a large number of people.
- It cannot function properly if it is not installed outside the packaging.
- It may not detect the presence of dangerous gases if the device is not close in the detection range (maximum range of 80 m2 in open space).
- It is not able to act in any way on the possible presence of pollutants in the monitored environment. After an alarm always check for the existence of potential hazards in the installation environment. Otherwise it can lead to occupants' health risks.
- A professional installer is not required to install Nuvap N2Health.
- Must be connected to the grid network via the supplied AC/DC power supply.
- It must be used in environments with temperatures between -5 ° C (25 ° f) and 40 ° c (105 ° f).
- It has been designed to be used indoors, at work or in residential areas; it is not suitable for monitoring open spaces.
- Do not expose the device to direct sunlight, heat, flames or water. The lack of this precaution could result in malfunction or fire.
- Do not place on uneven or unstable work surfaces.
- Do not hold on the lap or any other part of the body.
- Do not allow the device to come into contact with objects that could scratch or damage it.
- Do not touch the device, power supply or cable with wet hands and do not disconnect the battery charger by pulling the cable.
- Do not use damaged cables, plugs, or loose sockets, and do not bend or damage the power cord.
- Do not expose the device to strong external pressure, which could cause an internal short circuit and overheating.
- Never place the device near or inside heating systems, such as stoves, heaters, ovens, etc ...
- Do not break or drill the device, do not disassemble and do drill the internal battery.
- Do not put the device or the supplied accessories in your eyes, ears or mouth and always supervise children if they come into contact with the device.
- Do not use the device at service stations or close to other potentially explosive environments.
- Do not bend or deform the device.
- Do not immerse the device in water.