NUBI 4.0

Model: **NB40LPS1**
Power supply: Lithium battery 3,6V
PIR: NO

Thank you for purchasing NUBI 4.0, the intelligent smoke screen security device able to be connected to any burglar alarm system in new or existing systems.

OPERATIONAL OVERVIEW

The device is powered by a 3.6V AA size lithium battery supplied with the product, such as SAFT LS14500 or similar. This battery provides the necessary energy to the device for a period of 10 years. The ignition of the smoke cartridge is ensured even when the battery is very low (2.2V)

NUBI 4.0 efficiently protects volumes up to 100 m^3. The smoke generated by NUBI 4.0 is based on incense and does not produce toxic atmosphere as tested according to the TLV-STEL directive EU 2017/164 and ACGIH. After use the room must be ventilated before staying there.

This version of NUBI 4.0 has no integrated PIR, it has only the input to trigger the immediate smoke delivery.

The polarity of this input and its logic can be easily configured using DIP switches to interface NUBI 4.0 with anyburglar panel or command device.

NUBI 4.0 has one output to inform other devices about the low battery status. The level of the output logic can be inverted using DIP switch 5.

The box opening is detected with a tamper switch, its clean contact can be connected to the burglar panel.

The smoke cartridge works only once, the smoke emission, when triggered, can no longer be interrupted.
The smoke cartridge replacement is very easy, each spare cartridge is provided with a special board soldered on its wires to be easily plugged on the proper motherboard connector.

INSTALLATION

NUBI 4.0 can be easily installed on the wall or even in a corner at a height between 150 and 250 cm.
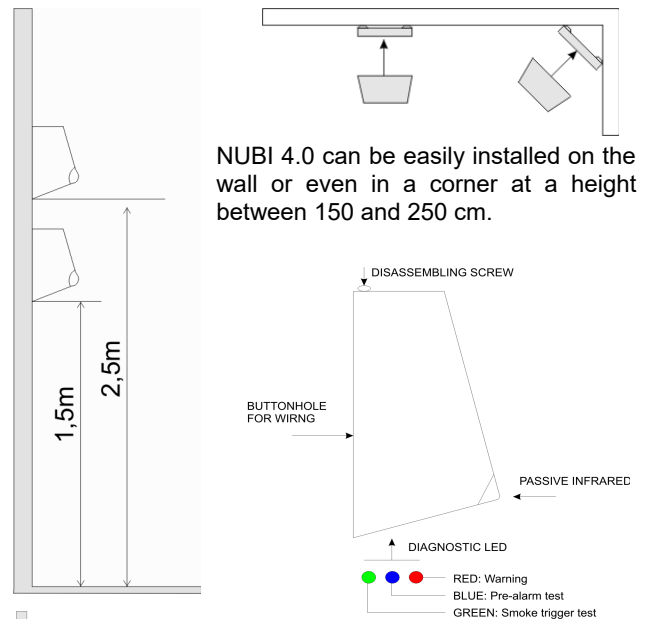
WARNING
Do not insert any obstacle at a distance of less than 1.5 meters from the smoke outlet hole.

The best performance is achieved when the jet of smoke coming out from NUBI 4.0 directly hits the floor, in this way the smoke will cool and spread better.

After opening the top cover, remove the motherboard to fix the lower part of the box on the wall.
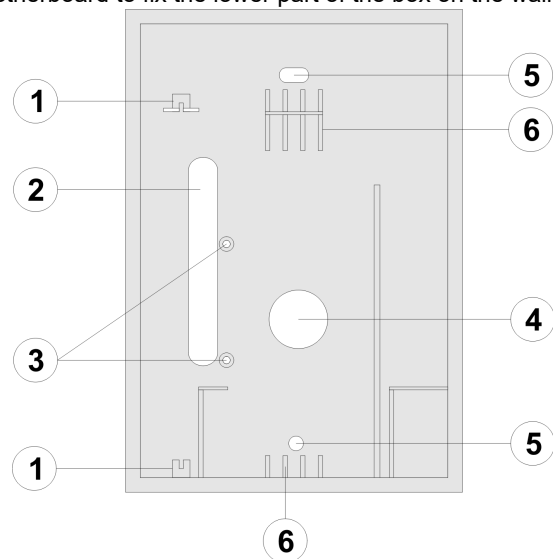
1	Motherboard rails
2	Cabling wire buttonhole
3	Internal siren fixing spacers
4	Internal siren sound outlet hole
5	Device fixing holes
6	Smoke cartridge supports

MAINBOARD
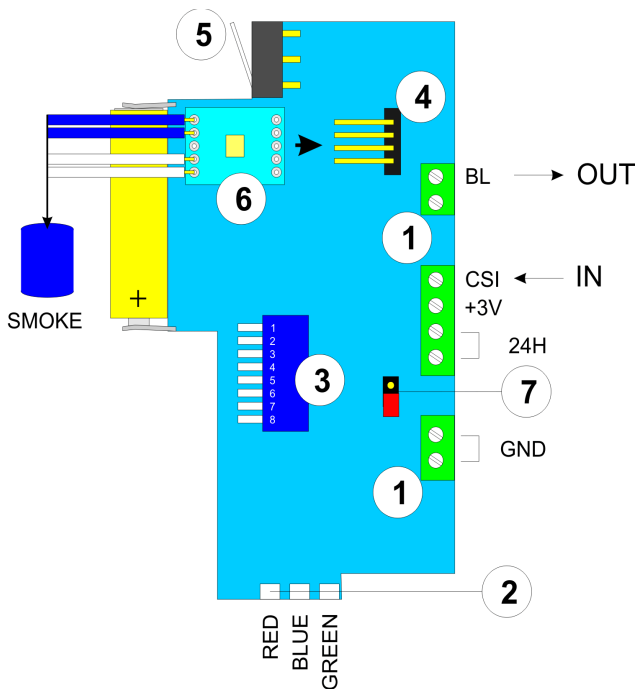
1) Main connector
2) Diagnostic LEDs
3) DIP Switch
4) Smoke cartridge connector
5) Tamper switch
6) Validation board provided with smoke cartridge
7) Close this Jumper when the motherboard is powered with external battery.

MAIN CONNECTOR

GND: Ground power supply
24H   Tamper clear contact
+3V   External power supply, input or output.
CSI   Immediate smoke delivery (INPUT)
BL   Battery low (OUTPUT)

+3V EXTERNAL POWER SUPPLY

This terminal takes the battery voltage of NUBI to power an external device or power the NUBI motherboard with an external battery instead of the one supplied. In the first case the Jumper (12) must be open and the battery life of NUBI will be reduced due to the consumption of the external device. In the second case the jumper must be closed and the supply voltage must not exceed 3.6V.

INPUTS INTERFACE
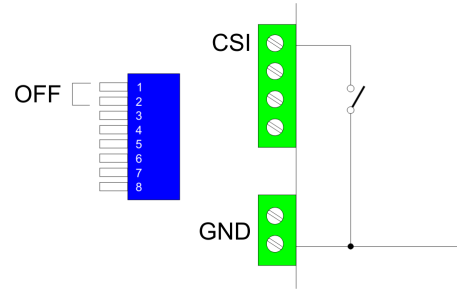
When the DIP Switches 1 and 2 are set to OFF, NUBI inputs CSI will become active when switched to GND, in this case it will trigger the immediate smoke delivery.

With DIP SW1, the input reference can be changed from GND to + 3,6V (+ VCC). Using SW2, the input logic can be switched from normally open to normally closed, in this case the smoke emission will be activated when the input is opened.

In the event that the inputs are not driven with a clean contact to GND, **never apply a voltage higher than 3.6V to the input** which would irreversibly damage the electronic circuit.

For any kind of interface, the inputs voltage thresholds are the followed:

	Min V	Max V
Level 0	GND	0,5V
Level 1	1,9V	+Vbatt

DIP SWITCHES

DIP	OFF	ON
1	Input driven to GND	Input driven to +3,6V
2	CSI input normally open	CSI input normally closed
3	Not used	
4	Not used	
5	BL output active low	BL output active open
6	Not used	
7	Operating mode	Test mode
8	Tamper enabled	Tamper disabled

DIAGNOSTIC LEDs

Diagnostic LEDs are active only in test mode.

BLUE	Flash when NUBI is in test mode.
GREEN	Flash when the smoke cartridge is triggered.
RED	Warnings.

CE
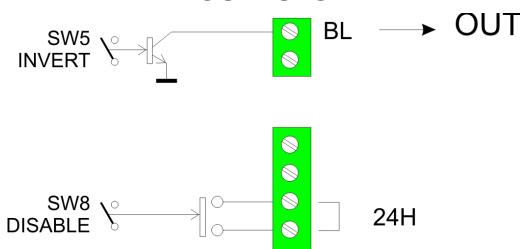
OUTPUTS

BL output is active when the battery is low. SW5 sets the output logic.

24H output is a clear contact normally closed when the NUBI 4.0 box is closed, it will open when the box will be opened. When the SW8 is set to ON, tamper output is disabled (output is always closed).

TEST MODE

Set the DIP SW7 to ON to activate the test mode. As soon as the device enters test mode, all the LEDs and the buzzer will flash 8 times, then will be performed the battery test:

- Green LED flash 3 times: full charge
- Green LED flash 2 times: medium charge.
- Green LED flash 1 time: quite low.
- RED LED + Buzzer: Battery must be replaced

When the battery is in good condition, the smoke cartridge will be tested, when it is empty the red LED and the buzzer will light up and the green LED on the validation board will be OFF. When the smoke cartridge is not empty the green LED on validation board will flash, the test will continue and the BLUE led will flash slowly, one time each second, to indicate the test mode is activated.

When, according to the programming mode of SW1 and SW2, the CSI input will trigger the smoke delivery, the GREEN LED will flash for 1 second to indicate the simulation of the activation of the smoke cartridge.

> **Remember to activate the operating mode (DIP SW7 OFF) at the end of testing.**

SMOKE CARTRIDGE REPLACEMENT

When a smoke cartridge is empty, it must be replaced with a new one. The smoke cartridge is supplied with the validation card welded to the ends of the wires. Only in test mode (SW7 ON) the green LED on validation board will flash when the cartridge is full, OFF when it is empty and needs to be replaced.

> **Remove the NUBI 4.0 battery power supply and wait at least 3 minutes before replacing the smoke cartridge.**

1) Remove from the motherboard the old validation card soldered onto the wires of the empty smoke cartridge.
2) Insert the new validation card soldered onto the wires of the new cartridge.

Commissioning

We advise to perform a test (see previous chapter Test mode) before perform a definitive commissioning of the device. Set the DIP SW7 to OFF to switch in operating mode. We advise to remove the adhesive that protects smoke exit hole of the smoke cartridge.

WARNING PROCEDURE TO PREVENT SMOKE EMISSION AT THE POWER UP

During the first 30 minutes after power the device, there is a special function to prevent unwanted smoke emissions, for example due to wiring errors.

When the smoke activation condition occurs during this time, instead of immediately emitting smoke, a warning procedure starts and the red LED flashes for 120 seconds.

It will be possible to stop the activation by opening the box and setting the DIP SW7 to ON or, in case of difficulty, it will also be possible to unplug the smoke cartridge validation card from the motherboard.

If this warning procedure is not interrupted, at the end of the 120 seconds we will have the emission of smoke.

Each time this warning procedure is activated, the 30-minute timer is regenerated to allow an additional 30 minutes of test time.

MAINTENANCE

We recommend replacing the smoke capsule every 5 years using only the original replacement.

WARRANTY

SMARTEK s.r.l. It guarantees its products against all manufacturing defects for a period of 30 months from the production date shown on the label.

RECOMMENDATIONS

Before leaving, ventilate the rooms thoroughly after the smoke has been delivered.

TECHNICAL SPECIFICATIONS

Power supply	3,6V lithium battery AA
Minimum operating voltage	2,2V
Battery low output threshold	2,6V
Autonomy	About 10 years
Size	12cm x 17cm x 14cm
Saturable volume	100m^3
Weight	760g
Smoke average delivery time	25sec
Operating temperature	From 0°C to +45°C
Storage temperature	From -20°C to +55°C
Maximum relative humidity	70%
Inputs	CSI – Immediate action
Outputs	24H – Tamper BL – Battery low