SenlabA©

Quick User guide

SENSING-LABS
EXTERNAL DOCUMENTATION
V1.2 - REV A

SEPT 2016

Thank you for your choosing our Senlab product !
We hope you will find the instructions on this user manual clearly and easily to follow.

Connection to external sensor

The SenlabA product is intented to be connected to **every 4-20mA sensors** output.

- It can also be connected to specific sensor protocol as one-wire or i2c;
- If you need to use one of this protocol, you have to contact sensing-labs to check your sensor compatibility

The connection is made by using **the provided IP67 cable connector** on which each pin are numerated from 1 to 7.

1. For connection with 4-20mA sensor, use PIN contacts n°1 & n°2
2. Other PIN contacts are reserved for other protocols.

Network activation

Device positioning

For best radio performance, the upper part of the device must be positioned upwardly in a free space area (avoid positioning against metallic element).
- For outdoor version, plastic cable ties with screw mount is recommended for wall fixation.

Starting configuration

The devices you have received are delivered in a stand-by mode waiting to be activated and with the pre-configured activation process that you've asked for:
- ABP (Activation by personalization) or
- OTAA (Over-the-air activation)

*For OTAA: Device EUI, Application EUI and application Key are already configured.*

For ABP: Device EUI, Application EUI, device address, network id, network session and application session keys are already configured.

Start the product

To start the product :

1. Put the magnet on the side of the product (as outlined in the pictures below) during 1 to 2 seconds to activate the product (i.e pulse counting, datalogging and radio sending).

2. The green LED of the product will start blinking rapidly during the « search network » process (that should last around 5 sec), then :

    - Once the network is found and the activation is done, the LED is illuminated during 2 seconds.

    - If not, the LED will end its 5 seconds blinking without any other lighting. The produc twill then come back to its stand-by mode and will be ready for a new activation attempt.

Nota : Once activated, if you pass the magnet over the activation zone again, the LED will blink during 2 second but it will not disturb the correct operation of the product.

Activation via magnet zone

LED Position

''Activation via magnet'' zone
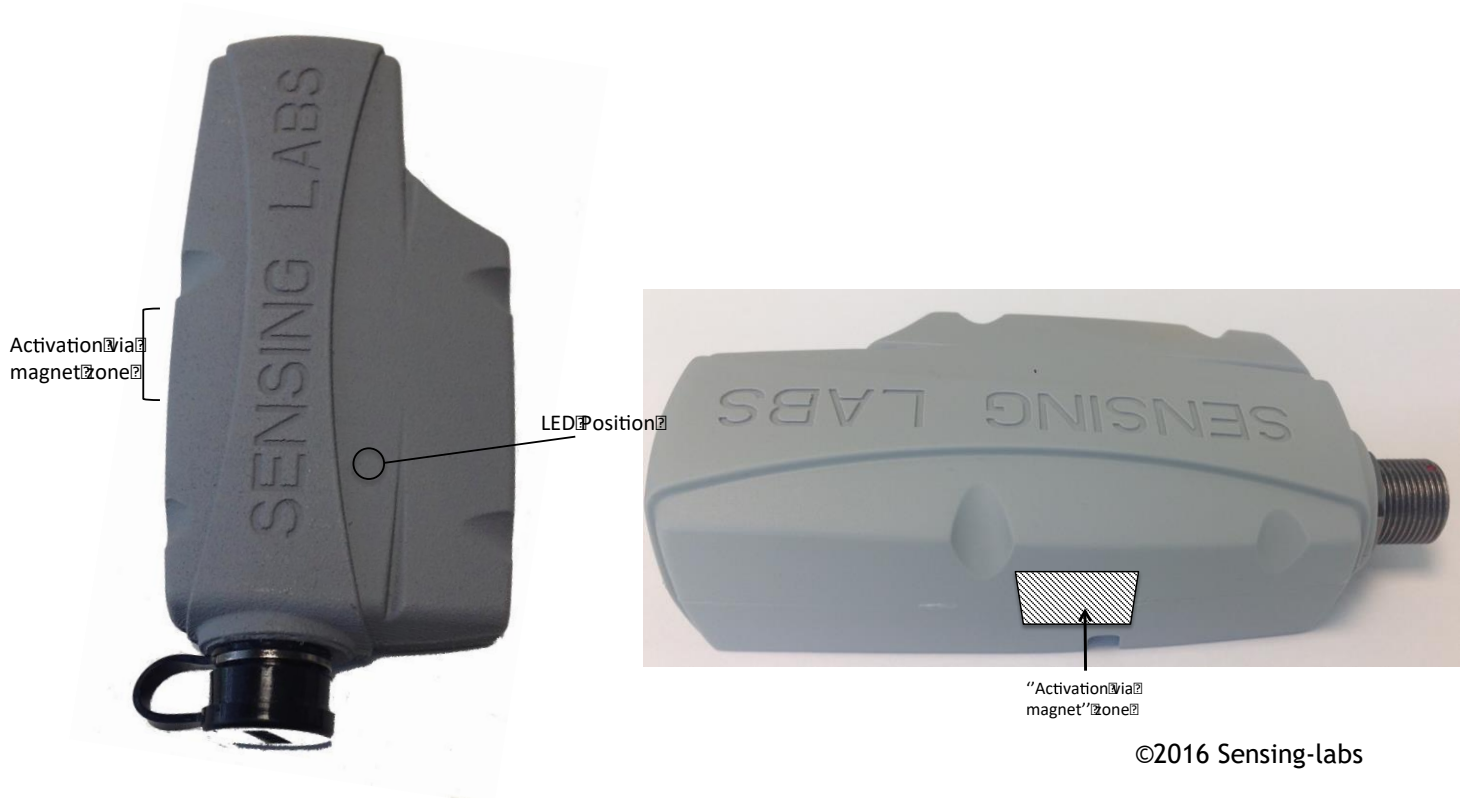
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Return to the stand-by mode

Once activated, follow next steps to put the product back in the stand-by mode :

1. Via an Sensing-Labs API (SLbase)

POST http://{AppServerURI}/V1.0/{devEUI}/SenlabT/request_stop_application
TYPE x-www-form-encoded

The request will be automatically be taken into account just after the next radio communication comming from the Senlab. No confirmation is returned by the product.

2. Via your own network server solution

Send the following downlink request. After response confirmation, new activation of device with magnet will be necessary to restart the datalog.

Request	ID (1B)	STOP PARAM. (2B)	Response	ID (1B)	STATUS (1B)	STOP PARAM. (2B)
	0x01	0x0700		0x01	0x00 OK 0x01 KO	0x0700

3. Via Sensing-Labs SLsetting tool

Sensing-Labs provides a specific tool to configured and maintained all your Senlab devices. Contact Sensing Labs to have more information.

Application configuration

External sensor current

The SenlabA product starts log periodic sensor current once activated, if datalog have been previously configured (by commissioning).

If the product is deactivated, it will stop to log measures and will start again from once activated again.

Datalog

2 type of measures are collected in each datalog transmission

- Current(Unsigned integer value, Unit mA)
- Battery level (Unsigned integer value, Unit %)

The following request operations are supported

- request_write_datalog_cfg - used for datalog configuration with parameters:
  - log period (REQ - frequency of measure value acquisition in min) (minimum 1min; maximum 24h)
  - number of logs transmitted by message (REQ - in min) (multiple of log period; minimum 3min; maximum 24h)
  - Log transmission random activation (OPT - Boolean) – add datalog transmission random feature to maximize device datalog reliability
- request_shift_log_tx – used for shifting the datalog transmission with parameters:
  - log period (only for internal check)
  - shift log transmission (multiple of log period in minute)

Security

Electrical safety

All circuits are SELV, including interface circuits which are only used for measurement (signals without power, these circuits are considered LPS).

Battery replacement (for INDOOR integration only)

Battery can be replaced for indoor integration following these instructions:

- Replacement battery must by a Lithium 3,6V AA type with 50mA min of supported continuous current
- Sensing-Labs recommends usage of model SAFT LS14500
- After battery replacement, device must be reactivated and request_reset_battery_level must be sent to device after its activation.

<p align="center">ATTENTION:</p>

EN: There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to instructions.

FR: Il y a risque d'explosion si la batterie est remplacée par une batterie de type incorrect. Mettre au rebut les batteries usagées conformément aux instructions.

Legals

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