NaBi SOLO

The Long Life Tracker and Smart Sensor
www.nabitrack.com

Device Datasheet

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OVERVIEW

NaBi is a **NB-IoT** network based low energy smart sensor and tracker. NaBi can periodically record location, temperature and motion information and this data is transferred to the General Track servers through the NBIoT network. The device configuration regarding sensor recording and data synchronisation intervals. Sensor based alarms can be configured and batch deployed to multiple devices in the General Track online system. The recorded data is availabe in the online system, mobile application or through REST API. (**www.nabitrack.com/documentation#api**).

FEATURES AND FUNCTIONS

Flexible configuration options for different applications
Battery life prediction
MOTION SENSOR:
- Selectable sensitivity
- Configurable event on motion, standstill or orientation changing
- Vibration sensing: hour meter application, configurable events on operation or stopping

LOCATION:
- Regular geolocation logs
- Geolocation logs on motion sensor event
- Location measurement falls back to NBIoT cell based location measurement in case of GPS unavailability (when the device is inside a building)

TEMPERATURE:
- Regular temperature logs
- Over-temperature or under-temperature alerts

SCHEDULED DATA COMMUNICATION AND ACTIVE PERIODS:
- Configurable calendar for scheduled data communication
- Configurable calendar for active time periods

SENSOR CHARACTERISTICS

ACCELEROMETER:
- Static orientation detection: Adjustable event trigger: 10˚..170˚, resolution: 10˚
- Motion detection threshold*****:   Adjustable: 0.063..5 G, resolution: 0.063 G
- Maximum logged acceleration: ±12.7 m/s2
- Resolution: 0.1 m/s2

  *_In case of vibrating machines, secure the battery with foam tape in accordance with the "**Hour meter**" application note._

TEMPERATURE SENSOR:
- Resolution: 1 ˚C
- Accuracy: 0.5 ˚C
- Temperature range: -40...+85 ˚C

PUSHBUTTON FUNCTIONS

Short press:	Out of schedule instant data synchronization with the server
Long press (>5s):	Motion debug mode (3 min): The LED is on when motion is detected*
Long press (>10s):	Set orientation reference of orientation change event. After set, NaBi enters to debug mode (3 min): The LED is on when orientationchange is greater than the given threshold*

*Works only when motion detection / orientation change is configured with given thresholds.

LED FUNCTIONS

Normal operation:	Blinks once in every minute
After battery replacement:	Blinks in every second until first server communication is finished
After pushbutton press:	Blinks in every second until first server communication is finished

BATTERY LIFE PREDICTION

Power consumption depends on device settings and usage. Most power is used by localization and NBIoT communication. Battery lifetime estimation examples are shown in Table 1.

Table 1. Estimated battery lifetime in the function of data synchronisation and location rates

GPS sampling period	Data synchronisation		
	Every hour	Every 12 hours	Once a day
30 minutes	0.22 year	0.27 year	0.28 year
2 hours	0.51 year	0.97 year	1.01 years
12 hours	0.82 year	3.36 years	3.91 years
24 hours	0.87 year	4.46 years	5.48 years

Estimate the battery life of a configuration that suits your application at
www.nabitrack.com/configuration

CONNECTIVITY AND LOCALISATION

GPS CHARACTERISTICS:
- AGPS: yes
- GPS sensitivity: -165 dBm
- Constellations: GPS, Glonass

CONNECTIVITY:
- NB-IoT

NB-IOT RADIO CHARACTERISTICS:
- Output power: 22.5 dBm
- Narrow-Band IoT freq. bands: B5 / B8 / B20

ENVIRONMENTAL CHARACTERISTICS

Maximum vibration:	±5 G
Operating ambient temperature:	-40...+85 ˚C
Storage temperature:	-40...+85 ˚C
IP rating:	IP67

REPLACEABLE BATTERY (INCLUDED)

Battery type:	**ER34615M**, Spiral Type Thionyl Chloride Lithium Battery **ONLY**
Battery voltage:	3.6 V
Nominal capacity:	14 Ah

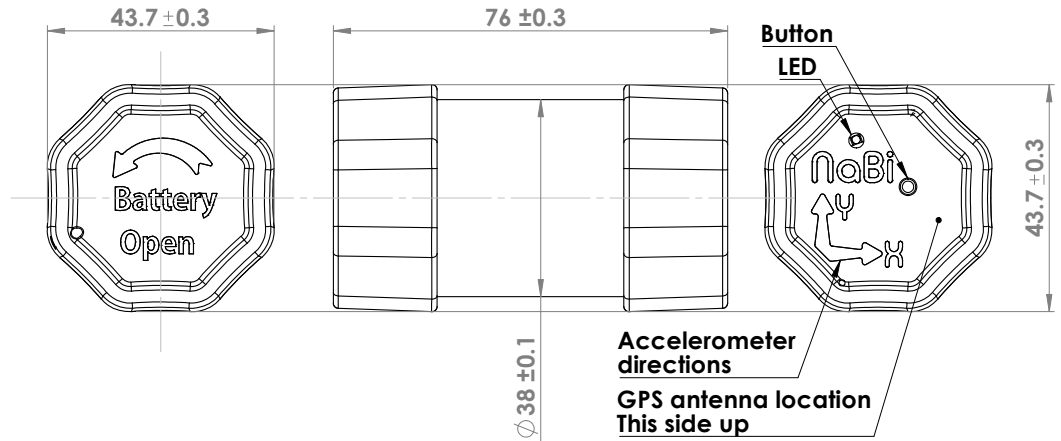# APPROVALS

CE 1413, RoHS, PbFree

CE 1413 RoHS Pb

General Track
IoT solutions

MECHANICAL DIMENSIONS

Size (L x W x H)
76 x 44 x 44 mm

Weight, incl. battery
170 g

43.7 ±0.3

76 ±0.3

Button
LED

NaBi

Battery Open

∅ 38 ±0.1

43.7 ±0.3

Accelerometer directions
GPS antenna location
This side up

Mounting options: **www.nabitrack.com/documentation#mounting_solution**

⚠ SAFETY & WARRANTY

The following precautions need to be ensured for safety and to maintain warranty:
- Do not exceed the limits stated under environmental characteristics.
- Do not mount or use ∩aBi in any way which cause deformation or other mechanical damage to the enclosure. Severe deformation of the rubber caps may reduce water resistance.
- Use ∩aBi with the proper type of battery, as described in the replaecable battery section.
- Clean and dry ∩aBi before opening the battery replacement lid.
- Do not expose ∩aBi to dust or water if the battery replacement lid is open.
- Do not touch the battery contacts and keep them clean during assembly. Clean them with isopropyl alcohol if needed.
- Replace the sealing O-ring every time, when the battery replacement lid is reclosed. Ensure, that the O-ring is in its place. Use silicone grease lubricate to avoid the adhesion of surfaces and ensure water resistance.
- Warning: Product contains Lithium Thionyl Chloride battery.
  Fire, explosion, and severe burn hazard. Do not short circuit, recharge, crush, disassemble, heat above 85°C, or incinerate. Please read the detailed battery safety instructions at below:
  www.general-track.com/fleet/static/nabi/battery_safety.pdf
  For more information, please call: **+36-20-386-6282**

  UN 3091

- The warranty does not cover defects or malfunction caused by misuse, abuse or improper maintenance, failure to follow operating instructions, or use with equipment with which it is not intended to be used.
- The warranty shall not apply to damage caused by unauthorized alteration, modification or repairs of the product, either.
- The device should be used at a distance of more than 20 cm from the human body.

DISCLAIMER

For more information contact: **info@nabitrack.com**