The rugged low-power tracker with long battery life with NB-IoT connectivity and guaranteed data recovery. The tracker provides general localization, zone and high precision. The tracker comes with an onboard temperature sensor and shock detection. Compatible with multiple external environmental sensors. The tracker firmware can be upgraded over the air.

- GNSS
- Wi-Fi scanning
- Bluetooth geobeacon for zone precision
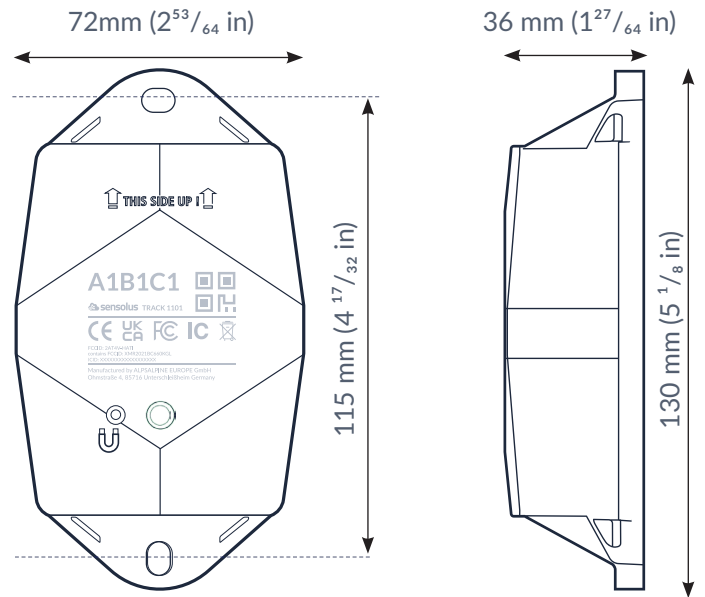- Quuppa tested for high precision

- NB-IoT
- Europe and North America
- Data recovery

- IP69K & IP68
- IK 09
- Flame retardant

72mm ($2^{53}/_{64}$ in) · 36 mm ($1^{27}/_{64}$ in)

115 mm ($4^{17}/_{32}$ in) · 130 mm ($5^{1}/_{8}$ in)

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sensolus TRACK 1101

Connectivity

NB-IoT
· Energy efficient transceiver
· Internal omnidirectional antenna
· Bi-directional communication
· NB-IoT bands: Europe/North America
· Data recovery
· OTA firmware upgrade (NB-IoT)

Bluetooth Low Energy (BLE)
Bluetooth Low Energy 5.0

Geolocalization

GNSS
Multi GNSS constellation chipset (GPS+GALILEO)

BLE
· Sensolus proximity beacon detection
· Detectable by zone and high precision anchors

Wi-Fi scanning
· Wi-Fi based geolocalization
· Wi-Fi 2.4 GHz

Sensing

Internal
· Activity monitoring
· Orientation monitoring
· Virtual tamper detection
· Temperature monitoring
   · range: -20°C till 60°C (-4°F to 140°F)
   · typical accuracy: +/- 0,25°C (+/- 0.45°F)
   · worst case accuracy: +/- 1°C (+/- 1.8°F)
· Configurable shock detection

Environmental BLE sensors
· Temperature, humidity
· Fill level, contact, magnet
· Other BLE sensors can be added

Activation and mounting

· [Activation manual](#)
· Holes 7x9mm ($^9/_{32}$ * $^{23}/_{64}$ in) for screws or rivets. 115 mm ($4^{17}/_{32}$ in) distance between the centers of the mounting holes.
· Instructions for mounting the device are available in the [Sensolus documentation center](#).

Mechanics & design

Antennas
All antennas are internal

Size
130x72x36 mm ($5^1/_8$ x $2^{53}/_{64}$ x $1^{27}/_{64}$ in)(L W H)

Weight
212 gram (7.6 oz)

Color
White

Casing
· Shell: PBT + PC Cover: PBT GF30% + TPE
· Flame retardant
· UV-stabilized

Water & dust resistance
IP68 & IP69K

Impact resistance
IK09

Drop shock and vibration
EN 60068

Operating temperature
-20°C to 60°C (-4°F to 140°F) *

The specifics regarding operational temperature are contingent upon the application, installation circumstances, and environmental factors such as sunlight exposure. For further information, please reach out to Sensolus. Battery life can be affected when devices function for extended periods at the extremes of this range.

Battery

Standard 3 cell
· User replaceable battery pack (Li-SoCl$_2$) 10500 mAh
· 2.94 gram (0.1037oz) lithium

Certifications

Regulatory
· CE
· FCC
· IC

Environmental
Drop shock in progress

Bluetooth 5.0
Declaration ID D068598

Electrical safety
EN 62368-1

User interaction

Device activation
Magnetic activation

LED feedback
Green & red LED feedback on the device

Synchronize remote settings
· Instant: Magnet activation
· Periodic: No user interaction needed

Management services

Diagnostics
· Battery lifetime prediction
· Detailed energy consumption
· Geolocation diagnostics
· Installation
· Communication quality

Management
· OTA firmware updates over NB-IoT and BLE
· Remote configuration
· Tracker usage profiles
· External environmental sensors

Application services

· Localization
· Journeys
· Activity
· Utilization
· Connectable with environmental sensors
· Temparture detection
· Tilt detection
· Shock detection

Firmware configuration

Communication service
· Data recovery strategy
· Communication conditions

Location service
· Motion based,context based, periodic or scheduled
· Configurable update rate and journey detection
· Priority sequence (GNSS, Wi-Fi scanning , Bluetooth geo-beacon)
· GNSS fix parameters
· Quuppa certified for high precision
· Indoor detection algo
· Wi-Fi scan strategy
· BLE scan strategy

General configuration
· Rule engine configuration
· Diagnostic levels
· Boot methods
· Accurate time synchronization

Orientation service
Orientation detection parameters

Environmental sensing
· Polling and aggregation strategy
· Alerts
· Edge processing parameters

Activity service
Activity detection parameters

Shock detection
Shock algo detection parameters

Tamper service
Virtual tamper algo configuration

Security

· Device unique encryption keys
· End to end payload encryption Chacha 20
· AES encrypted firmware
· Firmware upgrade allows only signed firmware images