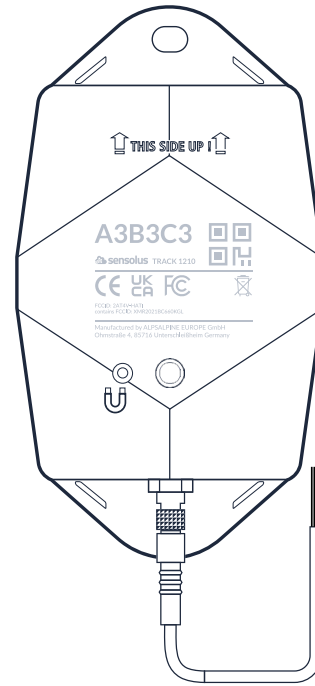The rugged low-power tracker can be wired to an external power source. It has NB-IoT connectivity and guaranteed data recovery. The tracker provides general localization, zone and high precision. The tracker comes with an on-board temperature sensor and shock detection. Compatible with multiple external environmental sensors. The tracker firmware can be upgraded over the air.

- GNSS
- Wi-Fi scanning
- Bluetooth geobeacon for zone precision

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

- Up to 12 years of back up battery
- IP rating in progress
- IK07
- Flame retardant

Connectivity

NB-IoT
· Energy efficient transceiver
· Internal omnidirectional antenna
· Bi-directional communication
· NB-IoT bands: Europe and 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)

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

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

Sensing

Internal

- Activity monitoring
- Orientation monitoring
- Virtual tamper detection
- Temperature monitoring (range: -20°C till 60°C, typical accuracy: +/- 0,25°C, worst case accuracy: +/- 1°C)
- Configurable shock detection

Connectable environmental BLE sensors

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

Mounting

- 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
218,3 gram (7.68 oz) without cable

Color
White and black

Casing
- PBT/PC 29 TM-Z2 FR UV LS
- Flame retardant
- UV-stabilized

Water & dust resistance
IP 67

Impact resistance
IK07

Drop shock and vibration
EN 60068

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

Battery life can be affected when devices function for extended periods at the extremes of this range.

Power supply

Voltage
Input voltage: 10 - 30 V DC with overvoltage protection

Cable terminations
Connectors to the power source can be soldered to the cable ends

Back up battery

Standard 3 cell
- Battery life depending on operating mode.
- User replaceable battery pack (Li-SoCl$_2$) 12000 mAh
- 2.94 gram (0.1037oz) lithium

Certifications

Regulatory
· CE
· FCC
· IC

Environmental
Drop shock

Bluetooth 5.0
Declaration ID in progress

Electrical safety
EN-60905-1

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
· Back up 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

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

Orientation service
· Orientation detection parameters

Activity service
· Activity detection parameters

Shock detection
· Shock algo detection parameters

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
· Indoor detection algo
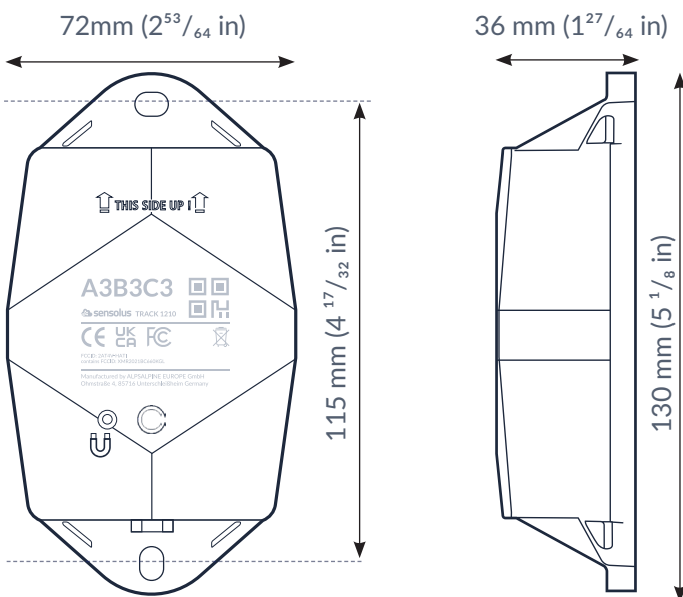· Wi-Fi scan strategy
· BLE scan strategy

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

Tracker measurements

72mm (2 $^{53}/_{64}$ in) 36 mm (1 $^{27}/_{64}$ in) 115 mm (4 $^{17}/_{32}$ in) 130 mm (5 $^{1}/_{8}$ in)

A3B3C3

Accessories

CAB 8600: 6 m power cable for TRACK 1210