

General Instructions

- Important
 - SIM Cards (usually in the device)
 - Mounting Positions
 - In-Vehicle Tracker
 - Mobile Tracker & Container Tracker
 - Connecting Wires
 - Connecting the Permanent Power Source / Ground
 - Connecting Ignition
 - GPS Antenna
 - GSM Antenna
 - Power Consumption
 - Connecting Digital Inputs / Outputs
 - Connecting Positive Inputs
 - Connecting Negative Inputs
 - Connecting Outputs (Open Collector)

Important

- **Before beginning the installation of your product, qualified personnel (skilled in electronic/electrical installation) must read completely this guideline. Important information contained herein is to prevent danger and damages of the used product or vehicle. The Workshop / Company that is responsible for the initial installation must guarantee the proper installation for at least 12 months**
- We are not liable for any damages or errors that occur due to following this installation manual.
- Do not disassemble the device. Do not touch before unplugging the power supply if the device is damaged, the power supply cables are not isolated or the isolation is damaged.
- The device may be connected only by qualified individuals.
- Warning!! May explode, if wrong accumulator is used.
- Any installation and/or handling during a lightning storm is prohibited.
- **All installations have to be completed with a function test according this manual.** Instructions must not be ignored (e.g. missing permanent power or connection to ignition) and wrong installations will cause the need of a new installation date.

SIM Cards (usually in the device)

Usually the SIM card comes with the device. Sometimes customers take their own SIM cards.

Only SIM Cards without a pin can be used.

The device is preconfigured for a certain provider, the usage of other SIM cards will not work.

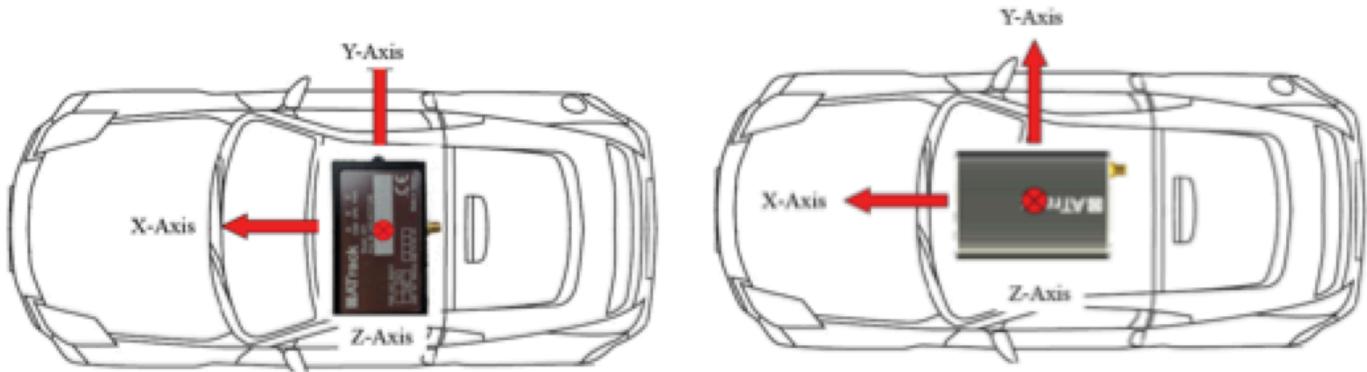
The sim card must be done in the device, where there is no power connected.

To test a Sim card, if it works or not, an unlocked mobile phone can be used.

Mounting Positions

In-Vehicle Tracker

- **It is necessary to make sure that the direction of the device is following the picture demonstrated in the below picture.**
- The device then should be installed parallel to the vehicle body and fixed with mounting bracket or double side adhesive.
- The device is designed to mount in a zone of limited access, which is inaccessible for the driver.
- As any electrical device the tracking unit is susceptible to humidity or too much heat. Placing it safely under the dashboard should be a safe.



Mobile Tracker & Container Tracker

In this case it is only necessary that the device can face the satellite!

Connecting Wires

If there are cables to connect, the following rules apply:

- Wires should be connected while module is not plugged in.
- **Wires and the tracking device should be securely fastened.**
- If the wires are placed in the exterior or in places where they can be damaged or exposed to heat, humidity, dirt, etc., additional isolation should be applied.
- **If unused, insulate the ends properly to ensure that the unused cables do not short to anything in the vehicle or any other cables.**

Connecting the Permanent Power Source / Ground

If a power must be connected, the following rules apply:

- **Permanent stable power is very important to operate the device.**
- Be sure that after the car computer falls asleep, power is still available on chosen wire. Depending on a car, this may happen in 5 to 30 minutes period.
- Don't take the power source from the radio as this might affect the quality of your radio (radio noise).
- Connect to ground firmly.

Connecting Ignition

If the device must be connected to ignition, the following rules apply:

- Make sure that it is really the ignition signal (no loss of voltage during start, no voltage if ignition is OFF)
- Make sure that the permanent power connection is still getting power even if ignition is off.
- Make sure that the ignition signal is really off after the ignition has been turned off.

GPS Antenna

The GPS antenna can be fixed visibly on the dashboard or right below the dashboard. The green areas shown below are recommended (close to the windshield):



- GPS antenna must be placed so its state is as horizontal as possible with the right side showing to the sky (sticker down). Don't put it on the front window.
- Don't place it under metal.
- Don't bend the cable.
- Try to avoid electric disturbance (radio, mp3 player). If electric fields could disturb the signal, you can place most antennas also outside (check with your dealer first).
- **For covert installation:** place the antenna first on the dashboard, it should fetch the signal prior to hiding it. Under certain circumstances hiding the antenna will deteriorate the GPS Fix (the quality of the GPS position) and could lead to higher power consumption (search for GPS).

GSM Antenna

If the device has an external GSM antenna, the following rules apply:

- GSM antenna must be placed with as little metal obstacles around it as possible.
- **Avoid placing GSM antenna near car radio, speakers or alarm systems.**
- After hiding it, a test of GSM/GPRS connection must be done.
- If the GSM antenna is embedded in the tracking device, the above rules apply for the position of the gps device.

Power Consumption

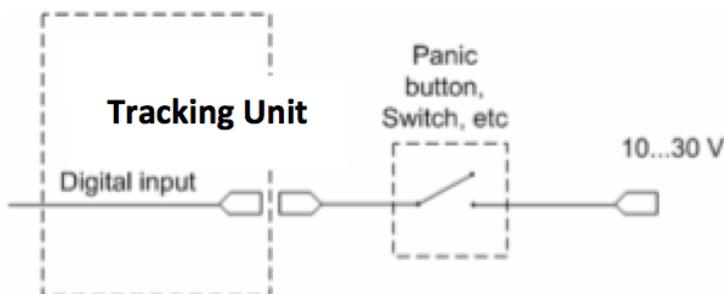
Please note that external factors might cause the box to enter sleep mode (searching for GPS, reloading batteries).

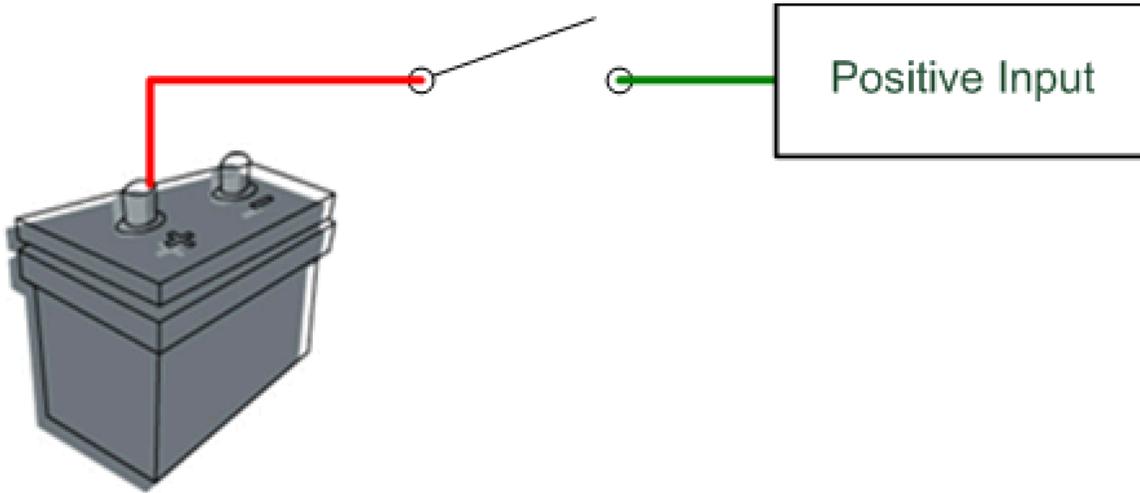
Different factors (box operations, antenna positions) will cause different power consumption. **To avoid total battery depletion after very long inactivity you can add a main power switch that can be installed hidden so that you can disconnect the device from power if needed.**

Connecting Digital Inputs / Outputs

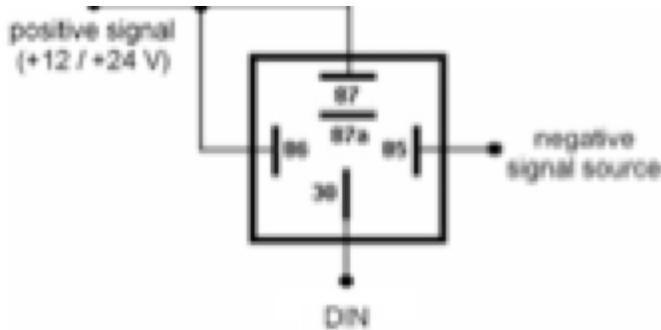
Connecting Positive Inputs

Most external signals (alarm buttons, door sensors, ignition, etc) return two states: high or low voltage. Digital inputs should be used to read this information. The figure below shows how to connect alarm button, door sensor, etc.





Different tracking units have different numbers of Digital Inputs. See above for finding the right pin for digital inputs. In cases when sensor output signal is negative an additional relay has to be installed to convert negative signal to positive.



GPS Tracking Units have various digital inputs that can process simple status signals (0 = off, 1 = ON).

Other examples for vehicle signals that could be connected to digital inputs (depending on the vehicle and how you can connect): Ignition, Door/hood open/closed, Seat belt on/off, Fuel tank lid open/close, 4-wheel drive on/off, light on/off.

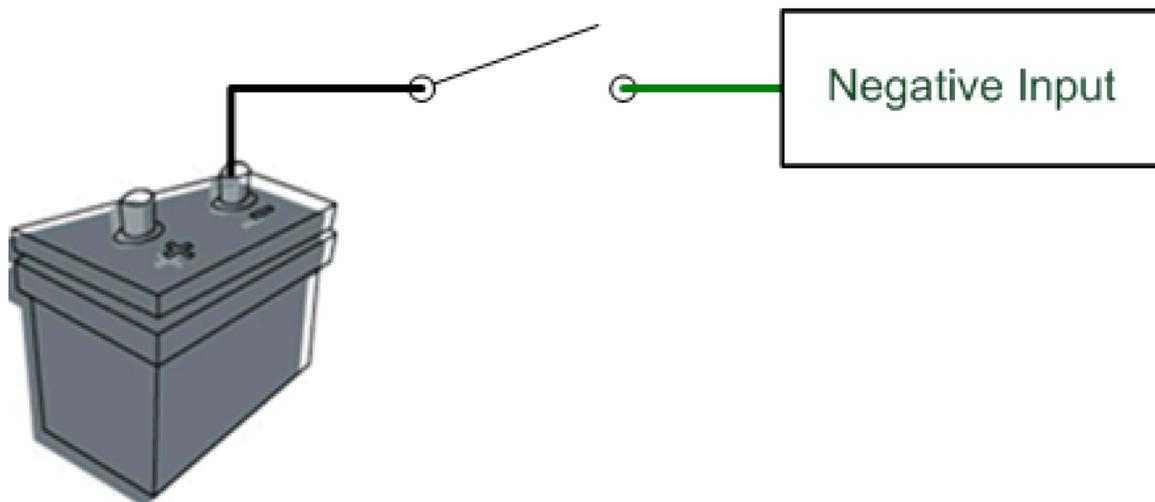
Interaction between the tracking box digital inputs and the vehicle signal needs skilled professional people (in a workshop) AND the electrical plan of the vehicle. Most workshops know about how and where to connect a digital input to the vehicle. In rare cases (or depending on the vehicle brand and model) you will need a special CANBUS interface to get the vehicle signal safely from the vehicle without interfering the CANBUS. If you are not sure, consult a professional workshop or dealer or search for the vehicle electrical switching plan online:

http://www.installation24.com/index.php?i=0&seiten_id=3&id=

Connecting Negative Inputs

As it is common in the automotive industry, tracking devices also have negative inputs

In this case the ground signal has to be switched instead of the positive voltage.



Connecting Outputs (Open Collector)



The usage of outputs can lead to dangerous situations and needs precaution. The provider EXPRESSLY DISCLAIMS ALL WARRANTIES OR LIABILITIES that could be caused by connecting outputs. The customer bears the risk of any consequential damages.

Example connection Plan - Negative Input

A possible configuration:

The relay is connected with the OUT 1 cable, that its pulls , if the output is active (in other words when ground is coming over the OUT 1 cable)

If the relay is active, the ignition will not work.

If the relay is not active, the ignition will work.

If the tracking device is not working or would be damaged, the ignition would work!