

# INSTALLATION MANUAL



## ETLOC-50 SECURITY



**GPS SECURITY  
& Vehicle Tracking**



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## I. SIM card preparation

Make sure the new SIM card is active and disable its PIN code protection (the PIN can be disabled via mobile phone). You can use either a prepaid or tariff SIM card. The ETLOC unit communicates via mobile data and optionally via SMS commands – please pay attention to the prices for these services during the selection of your provider.

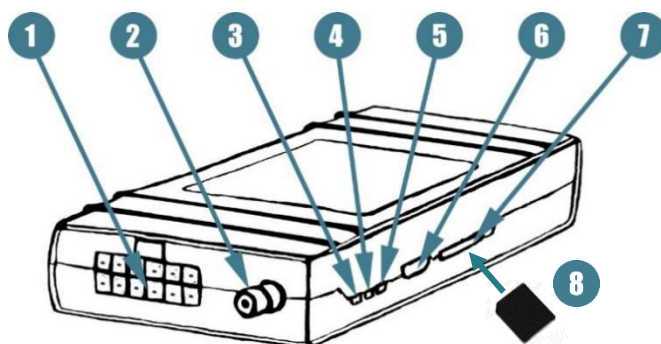


### IMPORTANT

Activate the SIM card according the service provider instructions. It is necessary to **disable the SIM card PIN code protection**. Insert the activated SIM card into the micro SIM card holder **7**. Pay attention to the **correct SIM card orientation 8**.

Note:

We recommend to activate roaming on the SIM card.



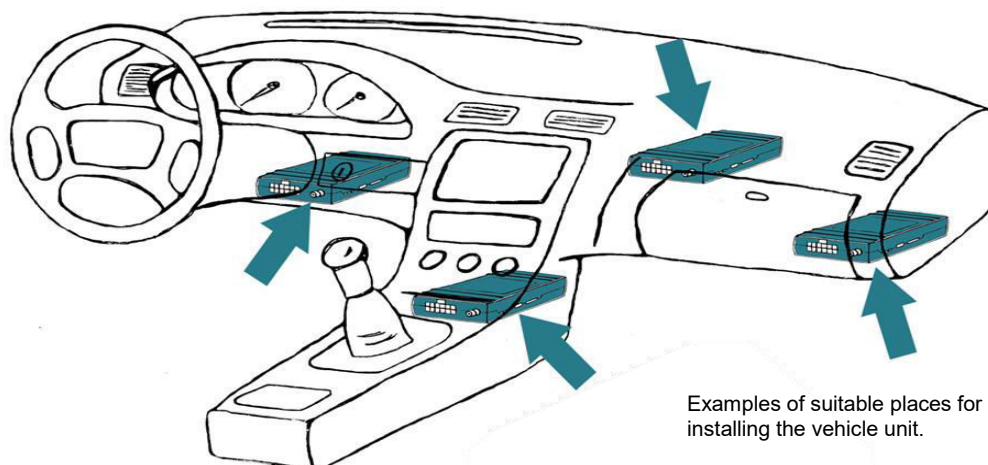
#### Description of the unit ETLOC-50 SECURITY

- 1 Wiring harness connector
- 2 SMB connector of GPS antenna
- 3 Green LED – GPS status
- 4 Orange LED – for service purposes
- 5 Red LED – GSM status
- 6 USB connector
- 7 Micro SIM card holder
- 8 Micro SIM card

## II. Installation into the vehicle

### 1. Placement of the unit

Pay special attention to the selection of a suitable place for installing the unit. We recommend using the free space under the vehicle dashboard.

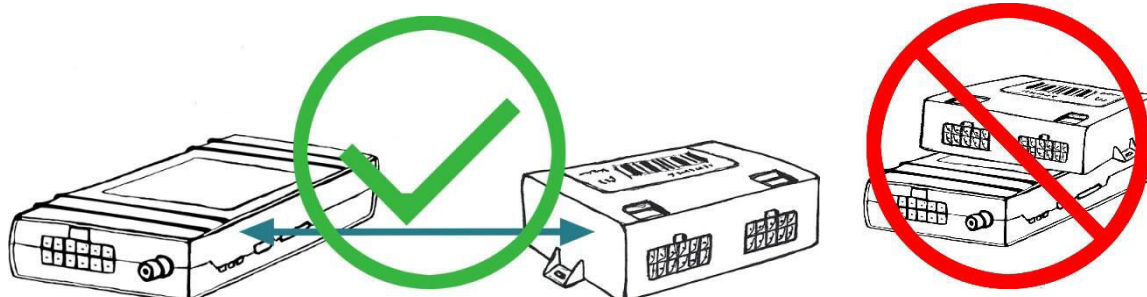


Examples of suitable places for installing the vehicle unit.



## IMPORTANT

The vehicle unit must not be placed in close proximity to **solid metal structures** (the vehicle unit has an integrated GSM antenna) or in close proximity to other devices with **increased electromagnetic radiation** (e.g. control units, electric motors, power relays, servo-drives etc.).

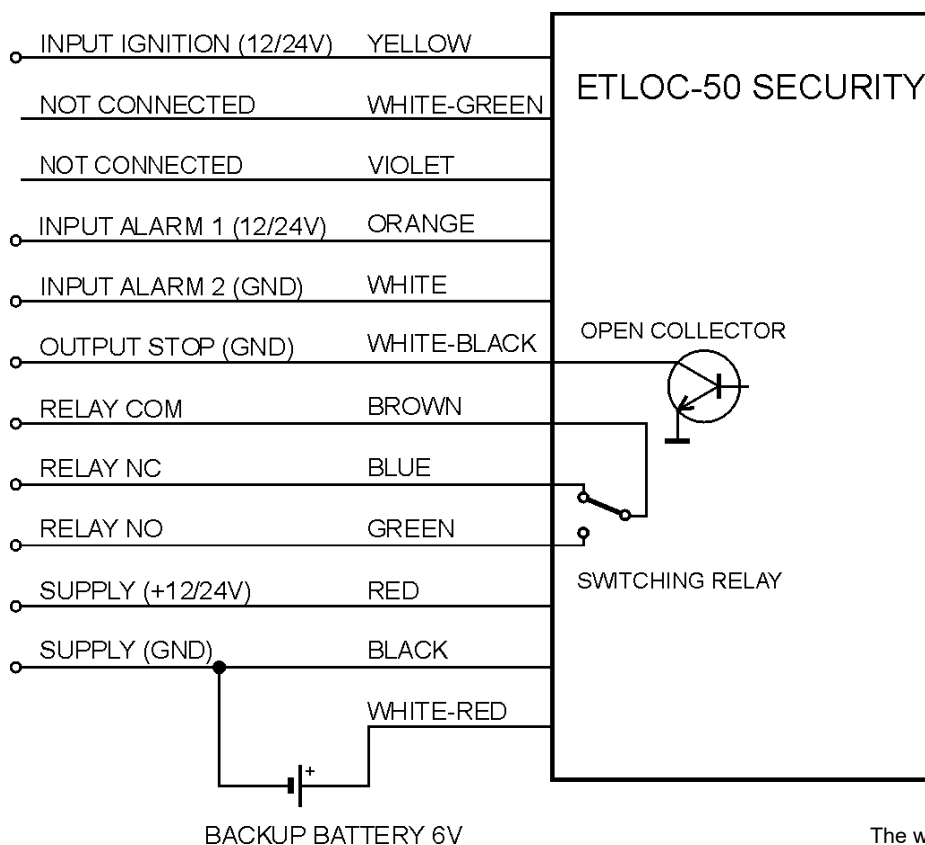


## 2. Connecting the cable harness

While connecting to the vehicle wiring, the wiring harness must be disconnected from the vehicle unit.

Basic installation is done via three wires (black, red and yellow).

The remaining wires are used for specific features of the vehicle unit.



The wiring diagram of the ETLOC-50 SECURITY unit

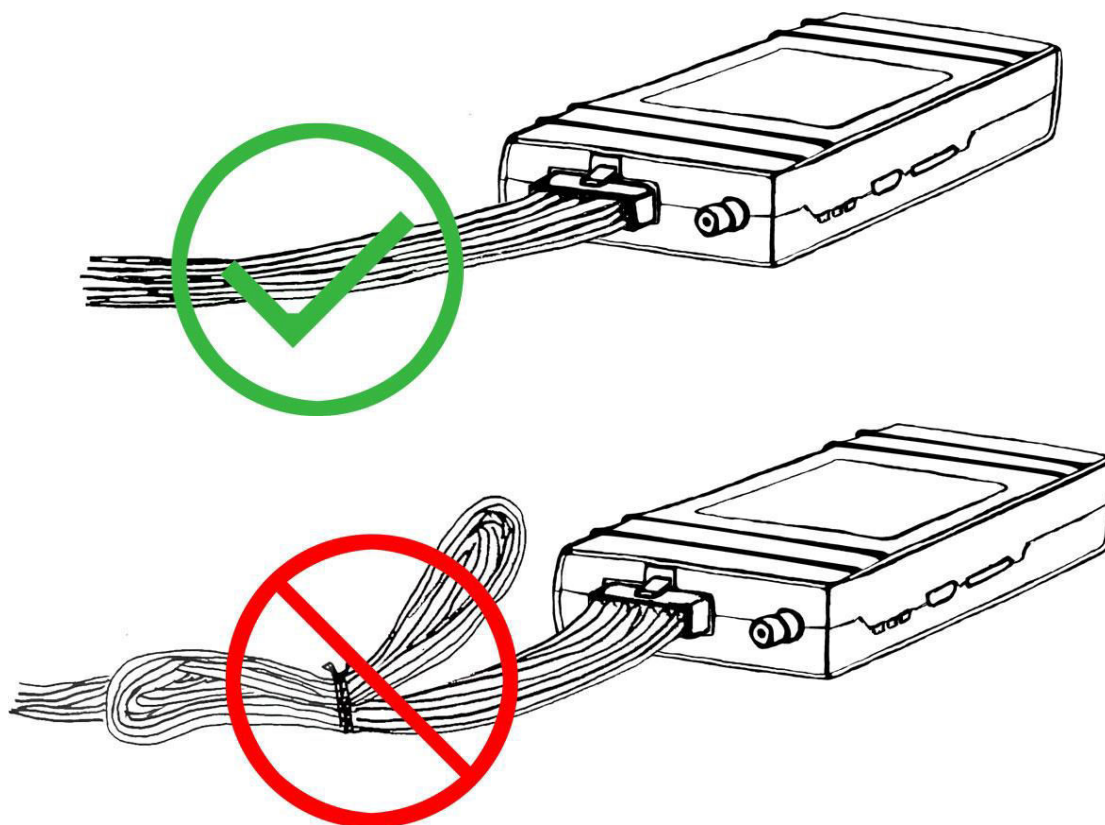
# ! IMPORTANT

The vehicle unit has to be connected via the red wire to a **constant power supply without current limit**. Protect this connection with a 5 A fuse.

**Grounding** (black wire) must be done in the **shortest possible distance** from the car battery's negative pole.

When the **engine is running there must always be +12/24 volts** on the **IGNITION input** (yellow wire).

The individual **wires** of the wiring harness **must be shortened** to the absolute necessary length. **Cut the unused wires at the connector** and **insulate** their ends.



### Description of the vehicle unit ETLOC-50 SECURITY connector

<b>Pin 1</b>	2 x black	a) vehicle GND b) backup accumulator GND
<b>Pin 2</b>	Yellow	IGNITION input (activation +12/24 V)
<b>Pin 3</b>	White-green	Not connected
<b>Pin 4</b>	White-black	STOP output (activation GND)
<b>Pin 5</b>	Blue	Switching relay – contact close (NC)
<b>Pin 6</b>	Brown	Switching relay – common contact (COM)
<b>Pin 7</b>	Red	Main power supply +12/24 V
<b>Pin 8</b>	Purple	Not connected
<b>Pin 9</b>	White	Input ALARM 2 (activation GND)
<b>Pin 10</b>	Orange	Input ALARM 1 (activation +12/24 V)
<b>Pin 11</b>	White-red	+ 6 V backup accumulator
<b>Pin 12</b>	Green	Switching relay – contact open (NO)



Overview of the vehicle unit's connector



## 2.1. IGNITION Input (connection of this input is compulsory)

This input is used for monitoring the condition of the vehicle's ignition.



### IMPORTANT

**With the ignition ON** (vehicle engine running) **there must always be** a voltage of +12/24 V on this input. The IGNITION input **can be connected to any circuit** in the vehicle, **which is active only when the engine is running.**

## 2.2. Input ALARM 1

Input ALARM 1 is used as an independent information input which monitors the state or activity of a particular device within the vehicle (e.g. external alarm activation, SOS button activation, opening the lid of a tank, opening the cargo space, alcohol tester activation etc.).

**Orange wire** - activation of the input is done by a signal +12/24 V with a length of more than 0.8 s

## 2.3. Input ALARM 2

Input ALARM 2 is used as an independent information input which monitors the state or activity of a particular device within the vehicle (e.g. external alarm activation, SOS button activation, opening the lid of a tank, opening the cargo space, alcohol tester activation etc.).

**White wire** - activation of the input is done by grounding (GND) with a signal length of more than 0.8 s

## 2.4. Output (switching relay)

The relay is used for example for controlling external heating, sirens, warning lights etc. with a maximum load 5 A / 12 VDC (2,5 A / 24 VDC).

### Note:

*If you would like to control devices with a higher current load, use an auxiliary relay which has the appropriate technical parameters.*

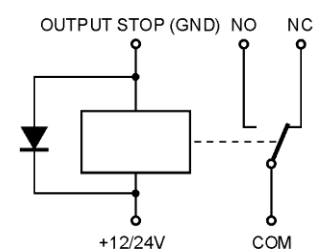
## 2.5. Output STOP

Output STOP is an independent output specifically designed to safely stop the vehicle. The output can only be activated when the vehicle stops - reduces speed to 0 km/h (e.g. at a junction).

**White-black wire** - the output in a form of an open collector (max output load 350 mA / 36 V).

### Note:

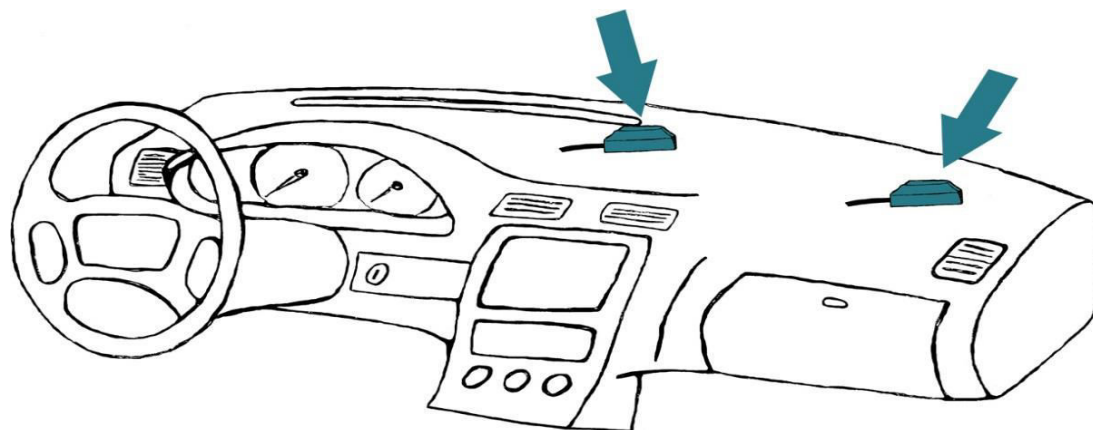
*With the STOP output an external relay can be controlled, performing an appropriate action within the vehicle (e.g. interrupting fuel injection pump power supply). In all cases, the relay used **MUST** have **diode protection**.*



Connection of an external relay with **diode protection** to the STOP output.

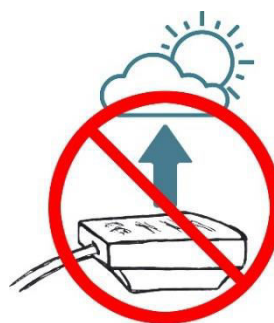
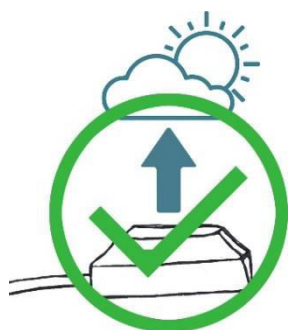
### 3. Mounting the GPS antenna

Please pay attention to the selection of a suitable place for installation of the GPS antenna. The positioning and orientation of the GPS antenna has a major impact on the accuracy of vehicle location. Suitable location for the GPS antenna is directly underneath the dashboard.

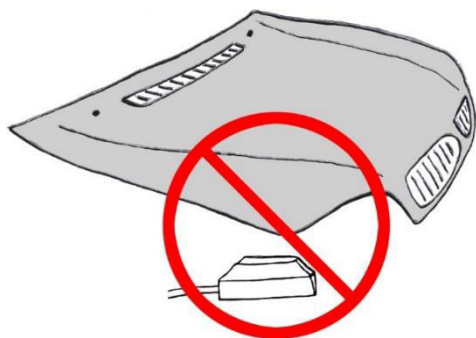


#### IMPORTANT

Ensure that the GPS antenna is in the **horizontal position** and is directed **towards the sky**.



The GPS antenna should not be placed under or in close proximity to any **solid metal structures** or in close proximity of other **GPS devices and antennas**.



**Firmly fix** the GPS antenna (e.g. double sided adhesive tape) to make sure it will not move during operation.

Note:

If the vehicle is equipped with a metallized windshield, it is necessary to place the GPS antenna, for example, into the side mirror, front plastic bumper or other location where its view to the sky won't be shielded. A heated windshield is not a problem for GPS signal reception.

## 4. Activation of the unit

a) Attach the GPS antenna's SMB connector and wiring harness connector to the vehicle unit (**after attaching the cable harness, the vehicle unit is not yet activated - it is still switched off**).

b) **Start the vehicle** and wait for approx. 2 minutes (during this time the unit initializes). The LED lights on the vehicle unit indicate its current state.

c) Send an SMS with the command **STATE** from your mobile phone to the telephone number of the vehicle unit. You will receive an SMS reply with information about the installed unit's current state.

Red LED – indicates GSM status	
LED is flashing 1 x per second	The unit is connecting to GSM network
LED is flashing 1 x per 3 seconds	The unit is connected to GSM network
LED is flashing 3 x per second	The device is connected to GSM and GPRS
LED is not flashing	The unit is switched off
Green LED – indicates GPS status	
LED is flashing 1 x per second	The unit is trying to receive GPS data
LED is flashing 1 x per 3 seconds	The unit is receiving actual GPS data
LED is not flashing	GPS module is switched off

```
STATE:
IMEI 866104028872547 1
INPUTS 1/0/0 2
SWITCH 0 3
STOP 1/0 4
CBAT 12,6V 5
BBAT 6,4V 6
CHARGE 0 7
GSM 28 8
GPRS 160s/1 9
GPS 1/1/5 10
```

Note: 0 – no/off, 1 – yes/on

1. IMEI – the unique identification number of the vehicle unit
2. Inputs states *IGNITION / ALARM 1 / ALARM 2*
3. Switching relay state
4. STOP function state  
*Function STOP activation / Execution of STOP output*
5. Vehicle battery voltage
6. Backup battery voltage
7. Charging of the backup battery
8. GSM signal power
9. GPRS state  
*Data transmission frequency / Data network connection*
10. GPS module state  
*GPS module turned OFF/ON / Current position unknown/known / Number of visible satellites*



d) Turn off the vehicle's ignition and resend the SMS with the **STATE** command. In the reply SMS, check that the IGNITION input is not active 2 (INPUTS 0/0/0).

## ! IMPORTANT

After turning the vehicle's ignition off, wait for approx. 5 minutes and check if the vehicle unit is still being powered (red LED must be flashing). With this procedure you will verify that the circuit chosen for supplying power to the vehicle unit is not time-restricted and does not cause the unit to switch off. **NOTE: in order to perform this test correctly, the backup battery has to be disconnected during the test.**



## 5. Connecting the backup battery (optional accessory)

The backup battery allows location of the vehicle even when the car battery is disconnected. As a backup battery, please use only valve regulated lead acid batteries 6 V / 1,3 Ah. The backup battery is connected through the wiring harness - **black** (-12 V) and **red-white** (+12 V) wires equipped with FASTON connectors.

Note:

*While the engine is running, the backup battery is being automatically recharged.*

*The lifespan of the backup battery is 3 years. After this period it should be replaced.*

## 6. Mounting the individual components

Firmly fix the vehicle unit, backup battery and wiring harness in the designated place under the dashboard. Mount the devices use double-sided adhesive tape and plastic cable ties.

