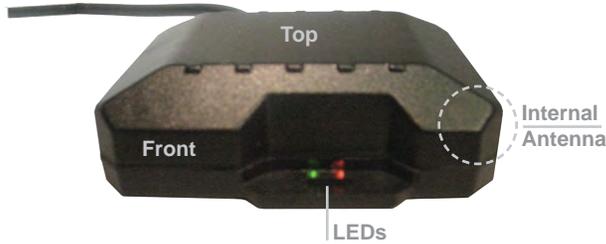


ToughTrack 2

Installation Guide



Overview

A minimal installation requires power, ground and ignition to be connected, and will only deliver GPS data. Before the device and tracking site are able to take advantage of remote **Output** functionality, the I/O must be wired appropriately **AND** the I/O must be configured on the CovertTrack site. See ***Naming the Output** for more information.

Cables

| Color | Signal Name | Description | Input/Output |
|------------|-------------|---------------------------|--------------|
| Red | Power | Primary power 6-32 VDC | |
| White | Ignition | Ignition/Input 0 | Input |
| Blue | IN - 1 | Input 1 - Optional | Input |
| White/Blue | IN - 2 | Future Use | Input |
| Green | OUT-1 | Output 1 - Optional | Output |
| Black | Ground | Vehicle or Chassis Ground | -- |

Installation

Check and verify Power, Ground and Ignition sources to ensure that the proper signaling exists. Be sure that the cables to the ToughTrack are not bent or constricted in any way. Keep the ToughTrack free from direct exposure to the elements (sun, heat, rain, moisture etc).

Placement of Tracking Device

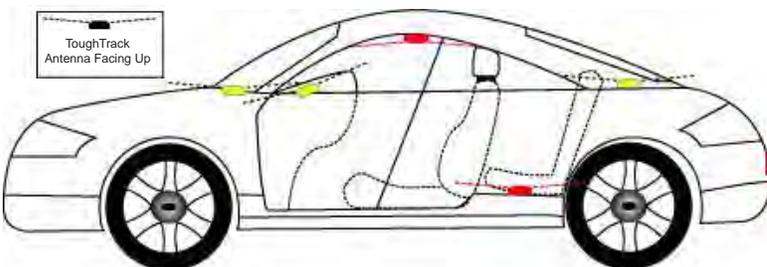
Be certain that the installation point will not violate any of the ToughTrack's environmental specification (temperature, moisture, etc.) as improper installation of the ToughTrack may void the warranty. See the ToughTrack Environmental Specifications for the exact specifications.

For best satellite reception, the unit should be placed horizontally with the light panel side facing up. Satellite signals will not penetrate through metal, therefore do not place the device in a location where it would be surrounded by metal such as in the vehicle trunk. A typical installations will place the ToughTrack under the vehicle dash board. Attach the ToughTrack to the solid body of the vehicle, not to plastic panels. Make sure you can get access to the unit afterwards as under some circumstances it may be necessary to add additional wiring or connections to the ToughTrack.

Internal Antenna Placement

The ToughTrack uses an internal antenna for both GPS and Cellular. The GPS and Cellular antennas are located on right hand side of the ToughTrack when looking at the front (see image above). It is more important to consider GPS performance over cellular performance, as GPS signal strengths are much lower than cellular network signals. Any blockage of the antenna can affect the tracking quality. In order to maximize performance, make sure that there are as few obstructions as possible close to the ToughTrack that might block the view 360° to the horizon, with the best location being near the center of the dash with a full view of the sky through the front windshield.

Examples of OK (yellow) and Poor (red) internal antenna placements



Protection from Heat

It is best not to place the ToughTrack unit in an unusually warm location such as directly near heater vents, near hot engine components or in direct sunlight. The maximum temperature that can be tolerated by the ToughTrack is described in the ToughTrack Environmental Specifications section.

Visibility of Diagnostic LEDs

Status LED lights on the front of the ToughTrack unit can provide valuable information about the operation of the ToughTrack. When feasible, attempt to install the ToughTrack in such a way that these lights can be seen with reasonable ease.

Moisture and Weather Protection

Although the ToughTrack unit is built with a fully-sealed, weather-resistant casing, it must be installed in a protected location, where it will not be exposed to direct or indirect water spray. Improper installation of the ToughTrack may void the warranty.

Connect Power, Ignition, and Ground

The power input (red wire) must be connected to a constant (un-switched) 6-32 VDC supply; preferably, connected directly to the vehicle battery terminal or as close to it as possible. This connection point should be fuse protected to not more than 5 Amps. The ignition input (white wire) must be connected to the vehicle ignition or another appropriate key operated line, such as ACCESSORY, ensuring that power to the ignition wire is available only when the vehicle ignition is on. The ground line (black wire) must be connected to chassis ground. Failure to connect these lines in the manner described may result in discharge of the vehicle battery.

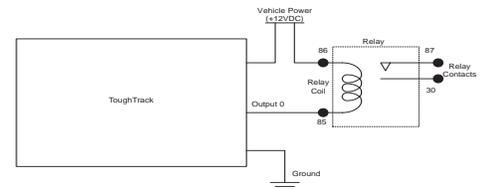
For best results, it is strongly recommended that the ToughTrack connection be on its own circuit. Connect the power input directly to the vehicle battery if possible and protect the circuit with an inline fuse. If you must connect through the fuse box, use standard commercial wiring practices to create a permanent installation rather than using press-in fuse clips or other temporary measures.

Status LED Behavior

Green SOLID - ON BLINKING - acquiring signal
Orange SOLID - Signal Acquired BLINKING - acquiring signal

Output

The ToughTrack offers a single output that is designed to drive an external relay. This output provides a high-current, open-collector driver that can sink up to 150 mA. This driver may be used to drive external relays that can then control vehicle functions such as door locks, sirens and lights. If additional current is required to drive the relays, external circuitry can be added to source the current. This diagram is a typical use of an output to drive a relay.



Environmental Specifications

Operating Temperature -30° C to 75° C (-22° F to 167° F)
 Storage Temperature -40° C to 85° C (-40° F to 185° F)
 Humidity 0% to 90% relative humidity, non-condensing

Activation

Visit www.covertrack.com to activate your ToughTrack. Activation requires the barcode number found on the silver label at the bottom of the device. Allow up to 10 minutes to download the satellite data, while the ToughTrack is outside with a clear view of the sky. Please test device and check for tracking before deploying.

Coverage Area

The tracking device must be within AT&T/Cingular coverage to function. Coverage maps are available at: www.wireless.att.com/coverageviewer

*Naming the Output

The control for the output is located in the device feature panel on the right side of the CovertTrack online tracking page and is named "blue wire". To change the output name, choose the **ACCOUNT** link in the upper right corner of the CovertTrack tracking page. Find your device from the list and choose **Select for Update**. Edit the "Blue Wire" text box to rename your output and select **Update**. Select the **TRACKING** link to return to the tracking page.