

Commercial Vehicle Security & Productivity

The GGE-7100 is designed for commercial vehicle applications that call for productivity and security oriented location-based services. This device is ideally suited for applications that necessitate the ability to locate, track, and report on the activities of fleets or individual vehicles.

Installation of this device should be performed by a professional familiar with installation of vehicle electronics.



Kit Contents

- GPS Beacon device
- GPS antenna (square, flat)
- Wireless data (GPRS) antenna (tall, thin)
- Power wiring harness
- I/O wiring harness
- Panic button
- Mounting hardware
- Getting Started Guide

Tools Required

- Wire cutters / wire strippers
- Voltmeter (multimeter)
- Soldering Iron / Solder
- Electrical tape
- Plastic cable ties
- Screw drivers
- Wrenches/sockets

1 Install Antennae

Selecting a Location

The kit comes with two antennae – a square, flat GPS antenna and a tall, thin wireless data (GPRS) antenna. The GPRS antenna position is not critical and can be mounted in most any location that is dry and distanced from sources of extreme heat (eg. the engine). The GPRS antenna should not be positioned where it is completely surrounded by metal; however, orientation of the GPRS antenna is not critical.

Orientation and positioning of the GPS antenna is critical for proper beacon operation. The antenna must be mounted horizontally with the rounded side facing



upwards. It is critical to position the antenna in a location where it has a view of the sky that is not obstructed by any metal. The antenna can be safely mounted under the plastic or rubber dashboard of most vehicles, positioned as far forward as possible to maximize the antenna's access to the sky through the windshield. The GPS antenna can also be installed beneath the rear windshield deck in passenger cars, again unobstructed by metal, and positioned as far towards the rear of the vehicle as possible.

Installation

Once a suitable position has been determined, the antennae should be securely affixed to the mounting point to ensure their position does not shift (this is especially important for the GPS antenna as it is highly sensitive to its positioning). The antennas both have embedded magnets for instant mounting to a flat metal panel, but in the absence of such a mounting surface they can be affixed to any suitable component of the vehicle with high-grade double-sided tape, silicon adhesive, or plastic cable ties.

2 Identify Power and Ignition Sense Sources

Identifying an electrical ground is the first step in wiring the power harness. Ground can be a chassis ground, a direct connection to the negative terminal of the battery, or a tie-in with an existing ground wire. The black wire in the power wiring harness must be connected to your ground source before proceeding with the 12V power connections.

Identifying suitable power sources for the beacon is critical. The beacon requires two power sources – one that provides continuous 12V power at all times, and the other which is ignition controlled, providing 12V power when the vehicle's ignition is turned on and 0V (ground) when the ignition is turned off. Using a voltmeter to test for these conditions will help ensure a successful installation. When searching for continuous and ignition controlled power sources, ensure all vehicle accessories—radio, lights, air conditioning, etc.—are turned off.

Continuous 12V power is always available by connecting directly to the positive terminal of the car battery. The vehicle's fuse box or steering column/ignition system may also provide a continuous power source. Once you have identified a continuous 12V power source, connect the red wire of the beacon's power wiring harness to the continuous source.

Ignition controlled power can often be found in the vehicle's fuse box or directly from the vehicle's ignition system. When testing for ignition controlled power, ensure that your power source remains at 12V at all times when the ignition is on and 0V (ground) at all times the ignition is off. Connect the yellow wire from the beacon's power harness to the ignition controlled source. It is important that when the ignition controlled source is at 0V it has a very low resistance to ground – no more than 50 ohms. Test this with an ohm meter.

The white wire is unused. You can cut this wire off and tape over the exposed end.

If you need to extend the wiring harness, ensure you use the same gauge and grade of wire, solder all connection points, and use heat shrink or electrical tape to insulate the connection. Solder and electrical tape should also be used to insulate connection points if you are splicing into existing wiring.

3

Mount the Beacon

Selecting a Location

The beacon should be affixed to a solid, sturdy surface that is dry, not subject to extreme heat, and free from excessive vibration. Ideally, the beacon should be mounted in a location where the LEDs on the front panel are visible for troubleshooting purposes, and with enough space at the rear of the beacon to connect the antennae and wiring harnesses. Good mounting locations can often be found under the vehicle's dashboard, under the seats, or on the underside of the rear windshield deck in passenger cars. Selection of the beacon position will largely be influenced by ideal antenna placement and availability of suitable power sources.

Installation

Once the beacon mounting location has been selected, the beacon can be secured in place with plastic cable ties or with the mounting screws included with the kit. The power harness, I/O harness, and antennae should be firmly secured to the connection points on the back of the beacon. Avoid taught wiring to the rear of the beacon – leaving some slack in the wires will help prevent connections coming loose due to vibration. If you do not intend to install the panic button or use the auxiliary input sensor, you do not need to install the I/O wiring harness.

4

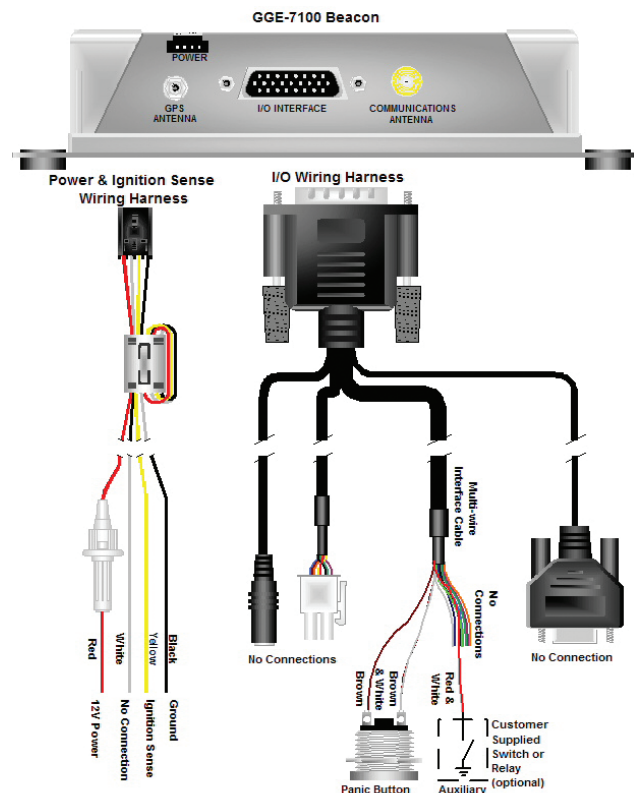
Install Panic Button (Optional)

Selecting a Location

The panic button should be installed in a location that is easily accessible to the driver but hidden from plain sight. The button is best mounted on a thin but rigid surface.

Installation

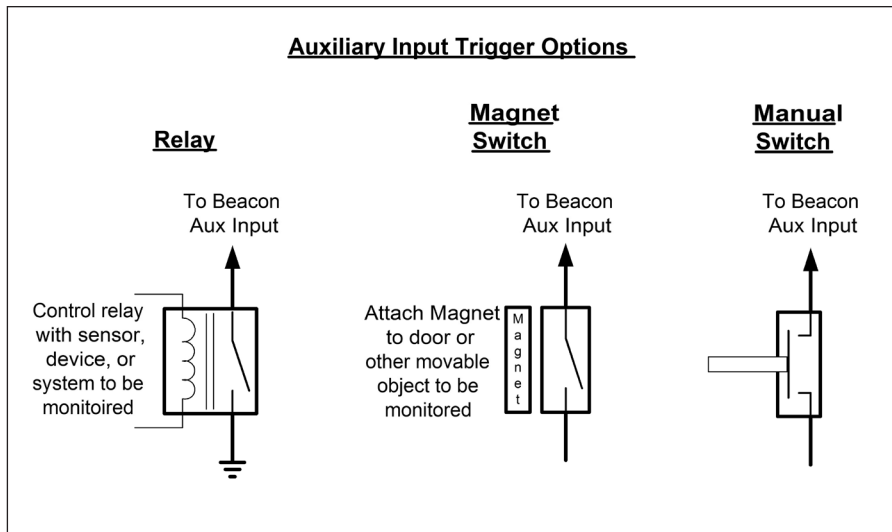
Drill a mounting hole at the chosen mounting point, inset the button in the hole, and secure from behind with the provided backing nut. Connect the brown wire from the I/O wiring harness to one contact on the rear of the panic button and connect the brown/white wire to the other contact – polarity is not important. Insulate any unused wiring leads on the I/O wiring harness.



5 Install Auxiliary Input Sense (Optional)

The auxiliary input will sense a voltage change between low (ground) and high (12V). This is achieved by installing a switch between the auxiliary input sense on the I/O wiring harness (the red/white wire) and ground. When the switch is closed

(grounded) the beacon will sense the state change and record the event. Similarly, when the switch is opened, the beacon will sense the opposite state change and record the event.



6 Test

To perform initial testing of the beacon, the vehicle should be outdoors in an open area where GPS signal is readily available. After powering up the beacon, observe the LEDs on the front panel of the beacon.

After powering up the vehicle, ensure the LEDs are behaving as described in the table above. Note that it may take up to 30 minutes to acquire initial GPS signal so the GPS light may remain on solid for as long as 30 minutes. You may now refer to the Getting Started Guide to perform an end-to-end system test through your subscriber portal.

Name	Color	Function	Behaviour
CPU	Green	System Heartbeat	Blinking when device is powered on
NET	Yellow	Wireless Data Service	Off: No Service On/Blinking: Service
ACT	Green	Activity	Blinking when sending or receiving
SQ	Yellow	Signal Quality	Blinking rate indicates signal quality
GPS	Red	GPS Status	On: Searching for GPS Blinking: GPS Fix