VLD 103 User Manual

Introduction

The VLD 103 can be used for a variety of AVL applications. It can be set to provide real time tracking so you can watch your vehicle moving on the map, over the Internet. Fleet managers can use the VLD 103 to know where all their vehicles are, who's on time and who's late! When installed in a hidden location it can alert you if your car is stolen, and help you recover it. The optional panic button and collision detector provide added security for drivers and passengers.

What's included in your VLD 103 package

- Wireless module
- External GPS module
- 12 pin terminal block connector
- Cable ties for installation
- Optional panic button
- Optional geo-fence button

Installation

The L-Biz™ Enabled VLD 103 is designed to be installed in a hidden location in your vehicle.

A professional installer should perform the installation of the unit.

WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, a separation distance of 30 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.

For more information on the installation of the VLD 103, see Appendix A: Installation Instructions.

Functionality

Programmability

All parameters within the unit may be set anytime with the L-Biz™ Client interface provided via the Internet.

Collision Detection

With the optional accelerometer the VLD 103 will send an alert with the vehicle's current position when a collision is detected. The alert is sent to a predefined recipient according to the customer's service package.

Customer Defined Speed Limit

You can set a speed limit on the VLD 103 from your computer, and if it is exceeded the VLD 103 will transmit an alert with the vehicles current position and speed.

Geo-fencing

A Geo-Fence is an invisible boundary that can be defined around the unit. If your vehicle leaves the area, an alert is sent. The user can dynamically fix the geo-fence over a predetermined route or area using their computer, or set it around the vehicle by pressing the optional geo-fence button. The unit monitors the vehicle's position and automatically exercises customer defined logic when position readings exceed pre-set ranges

Vehicle electrical system connectivity

The VLD 103 can be connected into the vehicle electrical system to enable any two of the following features:

- door lock and unlock
- trigger horn
- flash parking lights
- starter immobilizer

A professional installer is needed to make these connections.

Wireless network enabled

Data from the unit is transmitted via the wireless network. Three modes of operation are:

- Synchronous mode, when data is continuously transmitted at a user-defined rate based on time and/or distance.
- Exception mode, when the unit monitors position, velocity, time and acceleration and transmits an alert with current time, speed position and other data only if a user defined limit is exceeded.
- Query mode, when the device replies to a data request only.

Panic Button (Optional)

Press and hold the optional panic button for 3 seconds to send an alert with your current location. The recipient of the alert is predefined according to your service; it may be to a dispatcher, to a call center, or to your home.

Warranty Information

The warranty period shall be for a period of one year from date of purchase, excluding the battery. PowerLOC warrants that the hardware product you have purchased from PowerLOC or a PowerLOC authorized reseller is free from defects in material or workmanship under use during the warranty period. Warranty is non-transferable. During the term of warranty PowerLOC will repair the defective unit or replace it with an equivalent unit.

Warnings

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Limitations

Please note: the L-Biz VLD 103 is dependant on the availability of wireless network service to transmit data to the L-Biz Tracker. Successful transmission of data from the VLD103 is limited to areas in which Mobitex Network coverage is actively available. This includes panic alarm signals and collision detection alerts.

The availability of GPS signals is dependant on the GPS antenna having a clear view of the sky. Obstacles such as buildings, or tree cover may impede the satellite signals preventing the GPS module from obtaining a position. Such obstacles may also cause occasional inaccuracies in the GPS position.

Technical Specifications

Power	12-18V DC
Power Connection and Vehicle Interface	Power and 2 inputs/outputs
Battery Backup	External, Li-Ion 500 mAh
Memory	300 KB for data storage (>5,000 reports)
Modem	Mobitex Radio Modem 2 W peak, 1.8 A, baud rate ~ 9600 bps Frequency: Transmit: 896 – 902 Mhz Receive: 935 – 941 Mhz FCC and Industry Canada Approved
GPS Unit	12 simultaneous channel "all in view" tracking Sensitivity: -140 dBm (typical) Acquisition: cold start: 45 sec (typical) warm start: 35 sec (typical) hot start: 8 sec (typical) Active GPS with integrated receiver
RF Antenna	RF - flexible micro-strip (internal)
Message Types	PowerLOC interface protocol
Additional Ports	2 RS232, 1 dedicated to GPS receiver, 1 for additional I/O
Connectors	Two 8-pin AMP MTE connectors for GPS and additional I/O One 12-pin AMP MTE connector for power and relayed I/O One 3-pin AMP MTE connector for back-up battery
Panic Button	Yes (optional)
Geo-Fence Button	Yes (optional)
Case	Plastic top and base

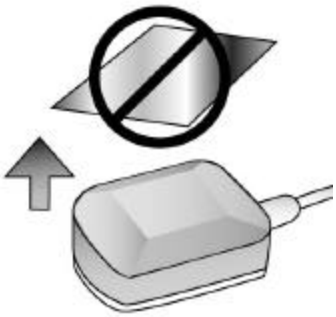
Physical Specifications

Size	Wireless module: ~7.6 x 11.5 x 3.8 cm (3 x 4.5 x 1.5 in.) GPS module: ~ 5.7 x 4.9 x 2.1 cm (2.2 x 1.9 x 0.8 in.)
Weight	~ 8 ounces (226.8 grams)
Operating Temperature	-30°C to +70°C (-22°F to +158°F) backup battery –20° C to + 50° C (–4°F to + 122°F)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Humidity	5% to 95% RH non-condensing at +40°C (-104°F)

Appendix A: Installation Instructions

Step 1.

Position the GPS antenna:
The VLD103/101 is designed with an external GPS antenna, to make installation easier and more flexible. The placement of the GPS antenna is very important to ensure satellite reception and a working unit. The GPS antenna must be placed face-up on a near level plane, in a position where it has as a clear a view of the sky as possible. There must **not** be metal over top of it.



- Acceptable positions to place the GPS antenna in a vehicle are on the dashboard (or underneath the dash, as close to the top as possible), or on (or under) the back window panel. These locations will allow the antenna a partial view of the sky, sufficient to acquire enough satellites for the system to function.

Step 2.

Connect GPS antenna to the main module:
Insert the 9 pin connector from the GPS antenna to the 9 pin connector (on the right) marked “GPS” on the main unit.

Note: Plug in the GPS antenna before you connect power to the unit.

Step 3.

Wire the main module to electrical systems of the vehicle.

The main module can be installed in an available space under the dashboard, away from metal, with 12V DC and the GPS cable connected to it. The main module can be secured with a cable tie wrapped around a wire harness, with double sided tape or with two screws.

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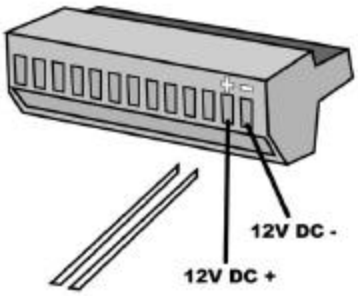
The module is equipped with the 12 pin terminal block connector:



We recommend installing the module using active low momentary switching. Other options are available and a qualified installer should determine the optimal configuration. The attached diagram may be of assistance to a qualified installer.

For recommended active low momentary switching the pins of the 12 pin terminal block connector should be wired as follows:

Pins 1 to 6 represent two general purpose inputs

Pin 1 – Tied to ground, i.e. vehicle's chassis
Pin 2 – Tied to 12 volts always on, capable of supplying current of 3 Amps minimum
Pin 3 – Tied to panic switch (normally open and connected to ground)
Pin 4 – Tied to 12 volts (in conjunction with Pin 3 used for activating the panic switch)

Pin 5 – Used the same way as Pin 3. Reserved for enabling optional features such as keyless
alarm etc.
Pin 6 – Used in conjunction with Pin 5 to enable optional features.

Pins 7 to 12 represent two general purpose outputs (SPDT relays)

Pins 7 and 10 are not used in recommended installation employing active low momentary switching.
Pins 8 and 11 – connected to external relays managing in-vehicle devices such as door locks, horn, ignition, lights etc. The actual wiring depends on customer desires and application requirements.
Pins 9 and 12 – connected to ground

For wiring the module into electrical system of a specific vehicle please consult Mitchel 2000 or similar databases for electrical schematics of different vehicles.