FL-100

User Manual

(Version 1.1)

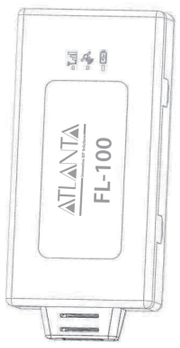


Table of Content

1. PACKAGING CONTENTS:

Unpack the FL-100 Box carefully, in the package you may find:

1. FL-100 Tracking Device
2. Wiring harness
3. Fuse
4. Relay with socket*
5. Panic button*
6. User manual

Note- Some of the accessories shown above are optional and need to purchase separately

2. FEATURES:

1. High sensitive GPS chipset.
2. Combination of GNSS, GSM/GPRS wireless network.
3. Durable and highly reliable GPS tracker.
4. Bluetooth (5.0)
5. Easy to install or hide in the vehicle to perform tracking.
6. Ideal application for vehicle tracking and equipment/assets monitoring.
7. External DC power supply.
8. Configuration can be done via SMS, GPRS and BLE commands.
9. Real-time GSM/GPS location monitoring on SMS and website.
10. Vehicle control with Immobilization.
11. Vehicle control function (Ignition off/on) can be started /stopped by the user.
12. Easy installation and easy SMS commands.
13. If wrong SMS command sent by the user then, EL-100 will delete SMS and send "SMS NOT ACCEPTED" to user mobile number.
14. User would get a google map link on mobile with Latitude /longitude.
15. Over The Air (OTA) software updating.
16. GUI for configuration through PC/BT.
17. Panic Button can be used to generate SMS in case of emergency.*
18. All legislated OBD-II Protocols, Non-Legislated OBD Protocols & Heavy-Duty Supported.

*Note: - This function will work if you have additionally purchased the Panic Button Kit.

3. PRECAUTIONS:

While washing the engine, protect the EL-100 by all suitable means from being struck directly by water jet or flow.

The GSM operations are dependents on the Network availability.

Postpaid/Prepaid SIM card can be used.

Pay special attention to the amount of remaining credit & expiry date of mobile connection in case of prepaid SIM card.

"ARM MODE" commands will immediately bring the vehicle to a sudden halt. Hence, we strongly recommend that these commands should not be used when vehicle is moving, as sudden stop may result in some mishappenings.

4. HARDWARE DESCRIPTION:

a. Power Requirement: 9V to 90V

b. Normal operation temperature: -30°C to +70 °C

c. Restricted operation temperature: Above -40°C and below +85 °C

d. Humidity: 5% to 95%

5. INSTALLATION PROCEDURE :-

Steps:-

• Set up the required wiring as per the wiring diagram using the Harness and Fuse provided in the package.
• Insert SIM card in to the SIM Slot, make sure that the mobile number is recorded
• Turn ON the Switch to start the device
• Indicators started showing if the internal battery is charged.
• Connect the device to the wired harness and wait for Indicators.
• Within 10 to 40 seconds the unit will begin to work and acquire the GSM signal as well as the GPS signals. The GSM indicator (GREEN LED) will Blink when the unit received the GSM signal.
• Once the GPS signal has received. The GSP indicator (BLUE LED) starts blinking.
• Both the indicators would be ON if no signal available.
• RED LED- Indicates the battery charging, if Orange LED is ON means Battery charging, if Red LED is ON means battery FULL (but Main Power is connected), OFF means Main Power is disconnected.
• Use SMS commands or USB to configure and start tracking, Please refer to the GUI Manual for USB configuaration.

Fig 5.1 First unscrew and remove the back cover.

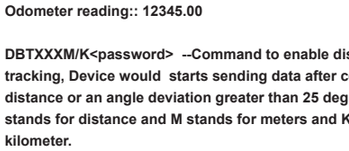
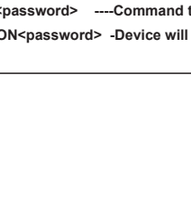


Fig 5.2 Insert the SIM card as shown below



6. LED Indicators

Green LED (GSM indicator)

Status	Definition
ON	Out of Network
Blinking at every sec	GSM signal available.

Red LED（Battery charging indication)

Status	Definition
RED-GREEN	Battery charging
RED	Battery charged

Blue LED (GPS indicator)

Status	Definition
ON	GPS NOT FIX
Blinking at every sec	GPS FIX

7. SMS COMMANDS AND WEB TRACKING

> The Device can be controlled through SMS and GPRS commands
> EL-100 would accept SMS commands from any mobile numbers if the password is correct.
> EL-100 can accept command on GPRS from the connected server
> EL-100 can send data on any alert (I/O change)
> EL-100 can send data on set distance and 25 degree angles, if distance tracking enabled

SMS COMMANDS DESCRIPTION:

EL-100 would accept commands from any number if the password provided is correct.
The password is a four digit number. The users can change the password of their device. EL-100 would reply to all commands send by user.

Example:- The command format would be
Command<password>
The password would be a 4 digit number and default password is 6906, So the command to get FIRMWARE VERSION would be

VERSION<6906>

Note:- the brackets (< , >) are must in the command

CHANGE DEVICE PASSWORD

• PW::1234;<password> - This command is used to change the password. After this command the password will be 1234

Eg: PW::1234;<6906>

STORE DEVICE ID

• DNS::123456789123456;<password> -This command is used to set the device ID, the maximum length of device ID would be 15 digits. Here after the device will replace the IMEI number with thi ID in protocol.

IMMOBILIZE THE VEHICLE

ARM<password> -Device will start monitoring the vehicle.
It will start sensing the doors & ignition, cut the ignition of the vehicle and confirmation massage "ARM MODE HAS BEEN ACTIVATED" will be received.

DISARM<PASSWORD>

The Device will stop monitoring the vehicle. It will stop sensing the doors, Start the ignition and fuel of the vehicle and conformation massage "ARM MODE HAS BEEN DEACTIVATED" will be received.

Note:- 1. Relay connection must be done to use the output functions
2. IGN and DOOR sense would be enabled on ARM command.

To Port the Device to server

To port the device to a server, following settings like network APN, server details and data sending interval should be configured to the device

To save configuration

#config::APN::username::password;<password>

– This command is used to configure your GPRS account.
APN (access point name) which is used to get to the GPRS gateway provided by network operator.
Username: for your GPRS account, username is provided by your network operator or else put ABC.
Password: for your GPRS account, username is provided by your by network operator or else put ABC.
Response:
"GPRS configured successfully:"
"GPRS APN: XXX"
"GPRS USER NAME: XXX"
"GPRS PASSWORD: XXX"

#config?<password>

- This command replies with GPRS APN, User Name and Password already saved.
Response:
i)GPRS APN: XXX
GPRS USERNAME: XXX
GPRS PASSWORD: XXX
ii) No GPRS_APN, Usr_nm, Pwd stored

To set reporting interval :

"WEBSTART<xxxH/M/S>,<yyyH/M/S>,<zzzH/M/S><password>"

Command to set the tracking interval and you will get confirmation SMS and then start sending data to our web server.
xxx means digits from 0-9
H means HOURS (the system will accept from 1 to 24 hours, it will reject less than 1 hour or more than 24 hours)
M means MINUTES (the system will accept from 1 to 60 minutes, it will reject less than 1 minute or more than 60 minutes)
S means Seconds (the system will accept from 1 to 60 seconds)

Where xxx stands for active interval, yyy stands for passive interval and z stands for panic interval.

Example – when we send this command WEBSTART002M,030M 030S<Password> the device will start sending the data to our web server at active interval of 2 minutes and passive interval of 30 minutes and at 30 seconds in panic interval

To port the device to server

Command to port the device to the required server (with IP and PORT)

#serverchange::IP::PORT;<password>

Command to port the device to a server

Example:-
#serverchange::196.168.175.12::20000;<Password>,
This command would point Device to the server with IP=196.168.175.12 and Port= 20000.

Some General commands

FE<password> ---Command to erase the memory data
To get GPS data for one time

Send "GETGPS<password>" to the device.

Response:
The device will send back:
If the GPS satellites are unreachable, you will receive "GPS NOT FOUND"
If the GPS satellites are reachable, you will receive

Lat: XXX (It will tell you the latitude of the location)
Long: XXX (It will tell you the longitude of the location)
Speed: XXX (It will tell you the speed of the vehicle in KPH)
Date: XXX (It will tell you the date of this particular data)
Time: XXX (It will tell you the time of this particular data in IST)
IMEI: XXX (It will tell you International Mobile Equipment Identity Number)
Web link to view location (It will show you the location on map)*

To observe the exact location on Google map for a corresponding LAT– LONG, open www.maps.google .com, in the search bar enters the latitude and longitude coordinates separated with a comma (,). It will show you the location.

SETODO::12345;<password> -- This command is used to calibrate the odometer where 12345 is the present odometer reading.
Response:
Odometer set to: 12345.00

SETODO?<password> --- This command is used to get/read the present accelerometer reading of vehicle.
Response:
Odometer reading:: 12345.00

DBTXXXM/K<password> --Command to enable distance based tracking, Device would starts sending data after covering the set distance or an angle deviation greater than 25 degrees. Here XXX stands for distance and M stands for meters and K stands for kilometer.

Minimum distance for distance based tracking is 50 meters.

SDBT<password> ----Command to stop distance based tracking.

GOUTON<password> -Device will turn output2 ON.

GOUTOFF<password> Device will turn output2 OFF.

BLEON<password> -BLE will turned ON.

BLEOFF<password> -BLE will turned OFF.

BLE?<password> -BLE is ON/OFF.

Diagnosis commands

•SYSSTATUS<password>
Response:

Main power status	MPON / MPOFF
Ignition status	IGNON / IGNOFF
Immobilizer status	ARMED / DISARMED
PANIC status	PANIC ON / PANIC OFF
No meaning	DBON
Reserved Field	DIPOFF
O/p2 status	GOUTON / GOUTOFF
CAN COM	OBDCE
Odometer (KM)	0.00
On board temp.(NA)	0
Battery Voltage (internal)	4.0

GPRSSTATUS<password>
This command is used to get the complete status of the device, and the command format is GPRSSTATUS<6906>.Description of the reply

Entries	Description	Remark
CN:	Current network	
DBTON/OFF	Distance based tracking	Set distance would be shown here with DBTON
SOFF	Sleep status	SOFF for SLEEPOFF and SON for SLEEPON
SS	GSM Signal strength	Should be >10 for proper GPRS comm..
CC	Current configuration	Currently using APN,UN,PWD
IP	Server address	Currently using Server details(IP,PORT)
WTI	Web tracking interval	Web tracking interval
ID	Device ID	15 Char Device ID(shows only if enabled)
GPS	GPS availability	A= available, V= void
SF	Data sending fail	Shows two fields if duel IP enabled
CF	Connection fail with server	Shows two fields if duel IP enabled
MU	Internal memory unsent data count	Shows two fields if duel IP enabled
PD	PDP Deact error	Network error occurs normally if APN is wrong
GMS	GMT shift 330 for India	330 for India
LHC	Location hit count per day	Customized, client specific
P:X	Protocol	0=DIMTS, 1=ATL(Shows two fields if duel IP enabled)

PID?<password>
This command is used to query the OBD parameters set in EL00 device.

Response:
PIDs configured as PID@010C:04: 05:04@0103:04: 05: 04@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@$2;

PID@010C:04: 05:04@0103:04: 05: 04@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@$5;<password>

Response:
PIDs configured as PID@010C:04: 02:03@0103:02: 03: 04@@$5;

Where command describes as below (max 40 pids can be set)

010C: can pid
04 -> pid length
response_start_pos: 02
response_len: 03
5-> pid/can data making interval in minutes.

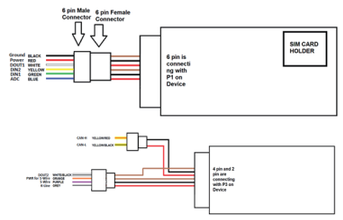
* PID command cannot be set on sms but can be set via server commanding, USB and BLE.

8. MAIN CONNECTOR WIRING DETAILS

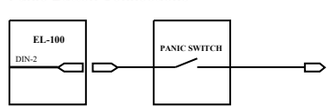
Pin No	WIRE Name	Description	Color Code
1-1	GND	Ground Pin (-)	Black
1-2	POWER	9-90V DC INPUT(+)	Red
1-3	DOUT 1	Digital Output -1 for IGN control relay. Open drain output (100mA)	White
1-4	DIN 2	Digital Input -2 for PANIC	Yellow
1-5	DIN 1	Digital Input -1 for IGN (9 to 90V)	Green
1-6	ADC-1	Analog input1 range 0-90V	Blue
2-1	Serial-Data	RS232-TX/ RS485-B	Yellow-Red
2-2	Serial-Data	RS232-RX/ RS485-A	Yellow-Black
3-1	DOUT 2	Digital Output -2	White-Black
3-2	RPM	RPM	Orange
3-3	1-Wire	1-Wire	Purple
3-4	K-Line	1-Wire Power (4.7V)	Grey

Note:-

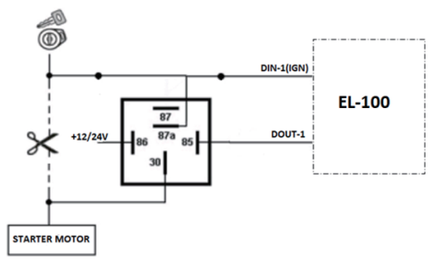
1. Digital inputs have got only two states high and low. Input 1 is active high input and input 2 is active low.



Panic Button Connections



Immobilizer Relay Connection



9. TROUBLE SHOOTING:

S.No	SCENARIO IN GENERAL	TROUBLE SHOOTING
1.	No LED indication	• Check SIM card position • Check the Harness wiring
2.	GREEN LED not blinking at 1 sec. interval	• Check SIM card validity • Check SIM security settings (No PIN recommended)
3.	BLUE LED not blinking	• Check the side marked as "THIS SIDE UP" is facing sky. • Keep the device in open space for 2-3 minutes for GPS fix.
4.	SMS not accepted : "WRONG COMMAND"	There may be some spelling mistake in the command or the command may be invalid. Please recheck the command phrase and resend.
5.	No response from EL-100:	• Check your balance in case of Pre Paid connection. • Check the network status. (No or weak network connection could be the reason) • Resend the desired commands again. • Reset the FL-100. • Check the password
6.	SMS is not Delivered:	Please check the network status
7.	NO DATA" from device	• Check GPRS availability of SIM card • Check server settings • Check "GPRSSTATUS" for various settings
8.	I/O status not Proper/ not getting Alerts	• Check harness wiring • Register the controlling number.