



Tramigo™ T23 Fleet

Installation Guide V1.07.5

Contents

1	Preface.....	3
2	Installation	4
2.1	Installation Tools	4
2.2	Installation Site.....	5
2.3	Unit Location	5
2.4	Antenna Location	5
2.5	Personal Assistance Button Location.....	5
2.6	Installation without Internal Backup Battery	5
2.7	Internal/External Backup Battery.....	6
2.8	Recommended Installation Sequence	6
3	Plan.....	7
3.1	Identifying I/O ports on your T23 FLEET	7
3.2	Configuring I/O ports.....	8
3.3	Mounting the T23 FLEET.....	8
4	Connect.....	9
4.1	Fitting the SIM card.....	9
4.2	Steps in Fitting SIM card to T23 FLEET.....	9
4.3	T23 FLEET Wiring and Connections	11
4.4	Power Connection	11
4.5	Ignition Sensing Connection	11
4.6	Personal Assistance Button or T23 FLEET-ATB.....	12
4.7	Sensor wiring	12
4.8	GPS External Antenna Option.....	12
4.9	T23 FLEET 24V Installation	13
5	Configure	14
5.1	Configuration Steps.....	15
6	Test	16
7	Mount.....	17
7.1	How to remove FAKRA from GPS antenna:	18
8	Wiring Diagram	19
9	T23 FLEET Spare Parts & Order Numbers	20
10	Troubleshooting	21

1 Preface

Failure to comply with the following warnings and safety information may invalidate warranty, certification or type approval of this product.

Internal components containing beryllium oxide may be used in this equipment. Dust from this material is a health hazard if inhaled or allowed to come into contact with the skin. Outmost care must be taken when handling these components.

Unauthorized modification to this equipment or associated accessories is forbidden without the express permission and agreement from the product manufacturer.

Safety Information

Please adhere to the following Safety and Installation information at all times.

Supply Voltage	:	+6V minimum to +27V maximum with or without battery
Fuses	:	Built-in fuse

WARNING!

This equipment may only be located in a position where it cannot interfere with the normal operation of the vehicle or present a hazard to the driver or passengers. Care must also be taken in routing all cables so that the insulation does not become worn or damaged.

Installation Information

All installation and service work must be carried out in accordance with MPT 1362, MPT 1372, ROAS, VSIB, 95/54/EC, ISO 21609 and / or any other statutory guidelines or directives currently in force.

Therefore it is strongly recommended that the **T23 FLEET** unit is installed and commissioned by suitably trained and qualified Installation Personnel i.e. in the UK those who are accredited and registered by the Vehicle Systems Installation Board (www.vsib.co.uk).

Important Notes!

Unauthorized changes or alterations to the equipment or on the installation will invalidate certification issued by the Approved Accreditation Body and may also affect the vehicle manufacturers warranty.

Under no circumstances may any part of the **T23 FLEET** system be installed inside the engine compartment area.

This unit should not be placed to direct sunlight or expose to high temperature.

This equipment should not be operated in hazardous environments i.e. areas that contain explosive materials or flammable vapours.

This equipment should not be operated in aircraft or in close proximity to medical equipment.

2 Installation

Before you begin installing and configuring the system please ensure that you have read this manual thoroughly, referring to any supplementary information provided for the **T23 FLEET** unit and user options as required. (***OPTIONAL*)



Figure 1 - T23 FLEET and Automotive Installation Kit

- | | |
|---|--|
| 1 - T23 FLEET Unit | 5 - T23 FLEET-USB (micro USB for portable charger) |
| 2 - T23 FLEET-BAT | 6 - T23 FLEET-AMIC (microphone) |
| 3 - T23 FLEET-GPS Antenna | 7 - T23 FLEET I/O |
| 4 - T23 FLEET-CLA (Cigarette Lighter Adaptor) | 8 - T23 FLEET-SOS/ATB external |

2.1 Installation Tools

<ul style="list-style-type: none"> ✓ Automotive screwdrivers, spanners, socket sets ✓ Wire cutter, pliers ✓ Voltage Meter ✓ Automotive Electrical Tape (regular electrical tape will unwrap in 6 months) ✓ Waterproof and heat resistant Automotive 2 way tape (3M has a good tape that is used to secure trim on the vehicle exterior) ✓ Foam tape – for preventing rattles ✓ Small Ty-Wraps (for securing wires and case) 	<ul style="list-style-type: none"> ✓ Portable soldering Iron ✓ Flashlight ✓ Alcohol and cloth ✓ Spare T23 FLEET unit and accessories (in case of component failure) ✓ Tramigo™ T23 FLEET wiring diagrams (included in this document) ✓ Wire connectors and crimping tool or Posi-Lock wire connectors ✓ GSM Phone or PC (for configuration) ✓ Portable GPS receiver (for testing GPS signal strength). Any unit will work as long as it shows the GPS signal strength.
--	--

 **Charge the battery overnight before using your T23 FLEET for the first time.**

2.2 Installation Site

The installation can be performed in any well ventilated and well lit area as found in a car dealership or accessory installation bay. There is no requirement to raise the vehicle. To obtain the first GPS lock, a clear view of the sky is required, which should be considered if designing a custom install centre. A GPS repeater can be used to obtain a signal inside a building.

Care should be taken to avoid scratching the vehicle during the installation process. Protective clothing and vehicle covers should be used.

Installations are also performed on the customers home or office site, so a portable installation toolkit is required.

2.3 Unit Location

Your T23 FLEET unit can be mounted anywhere inside your vehicle or boat where the unit will not get wet and not exposed to excessive heat. The most common locations are behind the dashboard, under the centre console, and under a side panel in the back of the vehicle. Pick a location where you can secure the unit firmly to prevent any rattling sounds after installation.

2.4 Antenna Location

In order for GPS to function correctly, the GPS antenna should have a signal quality of 60% or higher in order to receive data from the satellites. Example, if the vehicle is parked in a metal-clad building then the performance of the **T23 FLEET** platform may be impeded. Whenever possible, it is preferred to park the vehicle in a location where the antenna will have a clear all round view of the sky during installation time to test the signal strength.

The antenna and wires should be hidden from view by the installer.

Common locations are:

- Under the dashboard as far to the front of the vehicle as possible
- Under the plastic cover near the windshield wipers
- Under the plastic cover of the front or rear bumpers
- In the license plate lamp (on SUV types)
- In the side mirrors (when space permits)

Places to avoid are:

- Under the roof or roof posts
- Under rear window defogger wires

2.5 Personal Assistance Button Location

It is recommended that the Personal Assistance Button, when fitted, is located within easy reach and visibility of the vehicle driver, or where required in a covert location. Typically it will be fitted into a blank switch position.

2.6 Installation without Internal Backup Battery

T23 Fleet works without internal backup battery. Power is supplied through IO cable pins 1 and 3 for example from the vehicles main lead battery. Note that unit shut down immediately if no power supply present.

2.7 Internal/External Backup Battery

Internal Li-Polymer backup battery can handle temperatures up to 65 °C (149 °F). In countries with hot climate this can be an issue. To ensure device proper functionality, it is highly recommended to use external lead battery backup, please see Tramigo accessories. The internal backup battery can be removed and backup power is supplied from external lead battery.

The external backup battery power is supplied through pins 2 and 4.

Note: If external backup battery is used, do not use internal backup battery at the same time.

2.8 Recommended Installation Sequence

The following installation sequence is recommended. Please refer to the instructions elsewhere in this document for further details.

1. **Plan** the whole installation and determine suitable locations, mounting arrangements and cable routes for all hardware items.
2. **Connect** Fit SIM card. Temporarily mount the main **T23 FLEET** unit and temporarily connect all wiring, while still able to see the status lights on the unit
3. **Configure** the unit
4. **Test** that all hardware features are working
5. **Mount** Complete the permanent installation and wiring
 - Perform final test of T23 FLEET functions.
 - Test that all vehicle buttons and switches still work.

3 Plan

Plan your complete installation first to avoid re-wiring later. **T23 FLEET** has four inputs and three outputs.

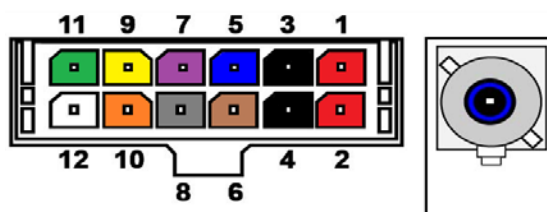
INPUT consists of the following: <ol style="list-style-type: none"> 1. Ignition Sensing 2. Personal Assistance Button/ATB (or/and) 3. Customized Input (preferably for sensors) 4. Customized Input (preferably for sensors) 	OUTPUT consists of the following: <ol style="list-style-type: none"> 1. Immobilizer (12/24V) 2. Customized Output (for relays/switches) 3. Customized Output (for relays/switches)
---	--

3.1 Identifying I/O ports on your T23 FLEET

Connect your I/O cable to your T23 Fleet. Then lay them on a flat surface. Make sure the I/O cable does not twist and is parallel to the surface.



Figure 2 - T23 FLEET I/O PORT & I/O CABLE



1- RED	"+" power source" (from 6-24V supply of engine)	7- VIOLET	INPUT 3 / Customized Input (preferably for sensors)
2- RED	"+" power source" (from 6-24V supply of engine)	8- GREY	INPUT 4 / Customized Input (preferably for sensors)
3- BLACK	GND (any metallic chassis of engine) -ground	9- YELLOW	OUTPUT 1 / Immobilizer (12V/24V)
4- BLACK	GND (any metallic chassis of engine) -ground	10- ORANGE	OUTPUT 2 / Customized Output (preferably for relays/switches)
5- BLUE	INPUT 1 / Ignition Sensing	11- GREEN	OUTPUT 3 / Customized Output (preferably for relays/switches)
6- BROWN	INPUT 2 / SOS or ATB	12- N/A	not used

Figure 3 - I/O CABLE Configuration Table

Contact support@tramigo.com for T23 FLEET customized I/O Instructions.

3.2 Configuring I/O ports

Inputs and outputs can be configured by INPUT and OUTPUT commands.

For Advanced use only!

INPUT default settings: <ul style="list-style-type: none"> • INPUT,1,IGNITION,IGNITION,1,0,BOTH • INPUT,2,SOS,SOS,0,0,ON • INPUT,3,SENSOR,SENSOR,1,0,ON • INPUT,4,GENERAL,INPUT,1,0,ON 	OUTPUT default settings: <ul style="list-style-type: none"> • OUTPUT, 1,IMMOBILIZER,DISABLE,1,0 • OUTPUT, 2,GENERAL,OUTPUT,1,0 • OUTPUT, 3,GENERAL,OUTPUT,1, 0
---	--

INPUT	DEFINITION	OUTPUT
(1 -4) corresponds to PINS 5 -8	ID	(1-3): Output number PINS 9-11)
(1-4): 1 = Ignition, 2 = SOS, 3 = General/Sensor, 4 = Handsfree	TYPE	(1-2): 1 = Immobilizer, 2 = General
Defines the name of the command for turning on/off the reporting	LITERAL (TEXT)	Defines the name of the command for turning on/off the reporting
(1/0): Defines if 0 or 1 used for ON	HIGH	(1/0): Defines if 0 or 1 used for ON
(0-9999): Wait (ms) before registering input event (to filter noise)	DELAY	N/A
(ON/OFF/BOTH): When reports are sent	REPORT WHEN	N/A
N/A	TIME	(0-9999): Time (ms) how long output signal is sent, 0 = continuous

Important Note!

All inputs (SOS, Ignition, and Sensor) use **3V minimum** and **12V maximum** for unit to detect "ON" state.

3.3 Mounting the T23 FLEET

After checking that all the functions are working properly, you are ready to permanently mount your unit. Your T23 FLEET unit can be mounted anywhere inside your vehicle or boat where the unit will not get wet. The most common locations are behind the dashboard, under the centre console, and under a side panel in the back of the vehicle. Pick a location where you can secure the unit firmly to prevent any rattling sounds after installation.

In general, you can expect that a mounting situation under the dashboard of a vehicle will be satisfactory.

4 Connect

4.1 Fitting the SIM card

Before fitting the SIM card

- If you have not already registered your SIM card with the mobile network, you should do this before proceeding. Please refer to the appropriate mobile network operator instructions on how you do this.
- Check that the SIM card can send and receive SMS using a mobile phone
- Ensure that the SIM card is not protected by a PIN number
- For prepaid accounts, ensure that there is sufficient load or credits to send SMS
- It is recommended to use a new SIM card to ensure good contact with the SIM reader
- Record the phone number of the SIM card

Important Note!

When inserting or removing the SIM card from the **T23 FLEET**, it is necessary to:

- Remember to turn off the power first before removing the battery
- Do not bend or scratch the card
- The golden chip should be kept clean at all times
- To prolong the life cycle of the card, avoid any unnecessary insertion or removal of the card.

4.2 Steps in Fitting SIM card to T23 FLEET

1. Unscrew the T23 FLEET back panel/cover



2. Push the battery lock to lift the battery and remove it.



3. Pull the SIM card holder lock up a bit just to loosen the SIM holder, then push forward to fit the SIM card.



Note: Put SIM Card wherein the gold plate touches the SIM reader pins. Follow the shape of the SIM holder.

4. Put back the battery and gently push it downward to lock it.



Note: Remember to check first the GSM signal stability before assembling the unit back, the RED light should be OFF.

5. **Put the back panel/cover.** You may return the back cover loosely screwed or unscrewed since it may fit well on the unit.



4.3 T23 FLEET Wiring and Connections

Important Notes!

Unauthorized changes or alterations to the equipment or the installation will invalidate certification issued by the Approved Accreditation Body and could also affect the vehicle manufacturer's warranty. If in doubt only connect T23 FLEET to the vehicle power.

All wiring should be safely secured to avoid damage from, or chaffing by, any hot or moving parts.

Position the wiring carefully to avoid the possibility of snagging or impact damage during the normal use of the vehicle.

Before any holes are drilled, check that no parts, wires, pipes or tanks could be damaged at the other side of the hole. Suitable grommets must be used where wires are routed through body panels to prevent short circuits to the chassis.

Leave in-line fuses out of holders until the installation is complete.

Cable Assemblies

The **T23 FLEET** has one IO cable/Immobilizer (12/24V) for power, ignition sensing or external personal assistance button.

When you configure the **T23 FLEET** you will be able to carry out tests to determine whether suitable GSM and GPS signals are being received. If in doubt about the suitability of your planned location, it is recommended that you only install it temporarily until you are able to carry out the appropriate configuration tests, check chapter 3.3.1 for detailed steps.

4.4 Power Connection

T23 FLEET I/O cable is used to connect to permanent vehicle power in the fuse box or directly to the car battery. Take a new line which is NOT used to any other car application. Permanent power source has to be selected carefully

Make sure that there is NO sound from the device when selecting specific power line. NOT all power lines are suitable.

Wire Colour	Description	Notes
Red	Vehicle Supply Positive (+ve)	Connect to a permanent Positive supply (6 to 24V)
Black	Vehicle Supply Negative (-ve)	Connect to permanent Negative.

Mandatory: Always check that unit's **I/O cable Power** and **Ground wires** are protected with a **1 ADC fuse**.

4.5 Ignition Sensing Connection

Wire Colour	Description	Notes
Blue	Ignition Sensing	Connect pin 5 wire to ignition switch which has POWER ON for the whole driving trip not only for cranking

(Note: if installing on a motorbike, it is recommended to tap BLUE and RED wires to ignition line to optimize power consumption and management)

4.6 Personal Assistance Button or T23 FLEET-ATB

Connect the 2 wires from the Personal Assistance Button to:

Wire Colour	Description	Notes
Brown	SOS/ATB pin connection	Connect one end of SOS to pin 6 wire
Red	Vehicle Supply Positive (+ve)	Connect other end of SOS/ATB to a positive supply from car (low voltage recommended) Note: Be sure that serial 39kOhm/0.125W basic resistor is installed

Note the personal assistance button can also be used to trigger the phone button in situations where a 3rd party hands free kit (in-car speaker and microphone) is attached to the T23 FLEET.

4.7 Sensor wiring

Wire Colour	Description	Notes
Violet or Grey	Customizable Inputs (for sensor)	Connect one end of sensor motor to any of pin 7 or pin 8 wire
Red	Vehicle Supply Positive (+ve)	Connect other end of sensor motor to a positive supply from car (low voltage recommended) Note: Be sure that serial 39kOhm/0.125W basic resistor is installed

Or this maybe the same as when connecting the SOS/ATB or Ignition input.
Any sensor that has a digital circuit can be used.

4.8 GPS External Antenna Option

This option is needed when it is not possible to install the T23 FLEET in a location where the internal GPS antenna will work. This option allows the antennas to be located in a different location within the vehicle.

The GPS antenna should be positioned horizontally and located in a position where it will have over 60% signal quality. The ideal location in most cars is in the underside of the dashboard; however, it is important to ascertain that there are no conductive materials present in the construction of the dashboard prior to fitting the antenna.

The GPS antenna must have the black side facing toward the sky. The flat side with the magnet faces the ground.

Important Note!

The performance of the equipment may be impeded if the antenna is mounted beneath or in very close proximity to electrically conductive materials, such as metal, certain types of plastic, metallised film or laminate (tinted) windscreens. If this applies to your vehicle please install the antenna elsewhere.

4.9 T23 FLEET 24V Installation

Older truck installations which have been measured to provide constantly more than 24V can cause unwanted behaviour, such as, T23 FLEET unit stops charging due to damaged I/O port; or unit stops responding; or unit hangs.

Recommended Solution:

1. If possible, locate the vehicle's regulated power supply (which covers the radio and other electronic devices) and tap from that source. Usually, the power from that node is only 14V or less and is more stable because it is regulated compared to those connected directly from the batteries.
2. Use resistors if step 1 is not available, a 30 watts*, 35 Ohms resistor will lower the current of the battery to your adaptor, protecting it from high current spikes.
Tip: Choose the resistor with heat sink; this will help lower the heat
3. Use terminals or Positaps to tap wires safely. This will reduce risk of fires and car warranty issues.
4. "Good grounding" is very important. Poor grounding may result to undercharging and T23 FLEET accessories will not work normally. To achieve good grounding, measure the resistance of the chassis and compare it directly to the battery's negative terminal. **The closer the reading to the battery's reference impedance, the more ideal is the grounding.**
5. Check the installation wiring. Always measure the total voltage to check for its voltage drop.
Important Note: Loose wire tapping should be re-soldered to avoid heat and power loss.
6. Insulate all wires to avoid short circuit with automotive electrical tape or heat shrinks.
7. Remove the car battery before any welding or work to do on the engine. This will avoid voltage spikes that will damage the T23 FLEET and its accessories.
8. Jump start using another vehicle (especially dual batteries) can cause a power spike. The T23 FLEET must be disconnected first from power supply to avoid short circuit.

*Contact support@tramigo.com for further assistance on adding resistor to the connection.

5 Configure

After completion of the Installation as described in Section 2, you are ready to configure your **T23 FLEET**.



Figure 3 - T23 FLEET Control Panel

Your T23 FLEET has 3 lights to indicate the status of the unit. Green means OK and red and blue means that you have a problem. T23 FLEET buttons require you to press for 2 seconds to prevent accidental triggering.

Power LED - Green:

Flashing (5 seconds)

On

Off

Power is on

Charging

Power is off or T23 FLEET is sleeping

Power LED - Orange:

Flashing (5 seconds)

Power is ON but is too low

Power LED - Yellow:

On

Charging and the power is still low

GSM LED – Red:

On

Off

Flashing

T23 FLEET is not connected to the GSM network

T23 FLEET is connected to the GSM network

T23 FLEET is having problems sending a SMS.

GPS LED - Blue:

On

Off

T23 FLEET does not have a GPS fix

T23 FLEET has a GPS fix

Power Button

Press for 2 seconds to activate

Personal Assistance Button (SOS/ATB)

Press for 2 seconds to activate.

When using an external SOS/ATB button, the T23 FLEET is configured to arm the Alarm by pressing the button for less than 5 seconds. The external SOS/ATB can also be used to activate the phone functions.

Phone Button

Press once to answer incoming call

Press for 2 seconds or more to initiate an outgoing call to User 1, press a second time for User 2, etc. Second and third press does not have to be 2 seconds.

Incoming call is indicated by the GSM and GPS lights flashing together.

Remote Assistance Button Press for 5 seconds or more to activate Assistance message. Press for 0.2 to 1.9 seconds to use as phone button. Second press must be within 1 second to dial 2nd speed dial number.

5.1 Configuration Steps

- Check that the green Power light is solid ON (charging) or emitting a short flash every 5 seconds (fully charged).
- Check that the red GSM light is OFF.
- Read the instructions in the T23 FLEET User Manual.
- Send the following SMS to your T23 FLEET in upper or lower case from the Owner's phone if possible:

OWNER

Note: It is the same with Owner,0000 from previous registration.

- T23 FLEET will respond with a text message stating:
Tramigo: Owner, +635551234 registered
- This means that you are now the Owner of T23 FLEET and it will accept any commands that you issue to it, provided they came from the same mobile phone number as you used for this setup.
 - If the Owner's phone is not available you can add their number with the Adduser command:
AU,phoneNum,OWNER

If you have Ignition Sensing connected, then you need to issue the following commands:

- Set,IgnitionInputGPIO,1
- Set,IgnitionInputShock,0

Note: T23 Fleet's default configuration is using shock sensor for ignition sensing.

If you want the SOS button as ALARM, then you need to issue the following commands:

- Set,SOSGPIO,1
- Set,SOSMinpressTime,2000

6 Test

Test all the wiring connections and GPS Antenna.

- Check the GPS antenna by moving the vehicle to a location with a clear view of the sky. When the blue GPS light goes off (1-3 minutes) send a FIND command to check the location. Send STATUS command to check GSM and GPS levels.
- If Ignition sensing (blue wire from Pin 5 of T23 FLEET-IO) is connected, test by
 - Setting the Parameter
 - Set,IgnitionInputGPIO,1
 - Set,IgnitionInputShock,0
 - And turning ON the Ignition reporting by sending **Ignition,On**
 - Turn On and Off Ignition switch and you should receive SMS each time during the Ignition switching
- Test the external SOS button by pressing for 2-3 seconds. You should receive an SMS from the unit.
- Test Alarm by sending command to the device.
 - Send **Alarm,On**
 - Shake unit – you should receive Motion Alarm
- If the Sensor/s are connected, test by
 - Turning on Sensor reporting
 - Send **Sensor,On**
 - Activate and deactivate the sensor and by default you should receive one (1) SMS during activation.

7 Mount

Tips: You now have an option to install the T23 FLEET units without the battery. This installation can be done in areas where temperature exceeds the battery operation range of 60°C.

There are 2 primary methods of mounting the T23 FLEET unit:

1. Use the 4 screw holes to attach to a flat surface inside the vehicle. Use self drilling sheet-metal screws, diameter max ST 4,2 mm, length about 20mm, cross recessed, pan head.
2. Use double-sided automotive grade tape to attach the case to the vehicle.

You may choose to mount the **T23 FLEET** somewhere covertly e.g. under the dashboard, but in all cases the T23 FLEET GPS antenna must be placed such that sufficient signal quality is available to the antenna to allow for GPS signal reception from the orbiting GPS satellites and cellular radio communications with the mobile radio network. GPS signals do not pass through metal or electrically conductive material.



Figure 4 - T23 FLEET Automotive Installation/Wires Connected

Check your windscreen: Should the windscreen be provided with heating that uses a metal film or fine wires built into the windscreen, or features a special heat reflecting athermic layer, then the GPS signal will be screened off from the **T23 FLEET**.

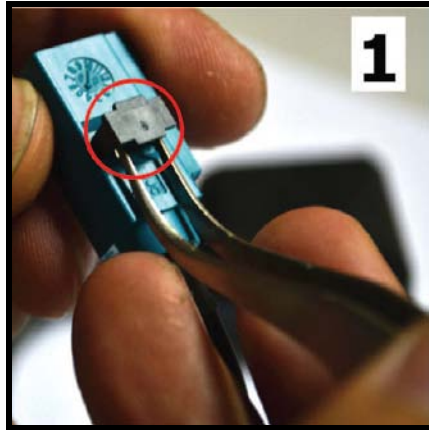
The **T23 FLEET** should then be mounted at the side of the windscreen where there is sometimes a special zone free of the metallization.

If this does not work, then you can place the external GPS antenna under the windshield wipers, front or rear bumpers, or any location where only plastic covers the antenna. If you need to run the GPS antenna cable through the engine compartment, use a standard plastic automotive grade shrouding to protect the cable.

TIPS: T23 FLEET GPS antenna comes with new FAKRA connector and may not fit on smaller holes during the installation. You have the option to remove it so the GPS antenna would still fit according the desired location then after the installation, return back the FAKRA connector in reverse steps of how you removed it.

7.1 How to remove FAKRA from GPS antenna:

1. Pull out the Fakra lock (black) using a pair of tweezers.
2. Gently pull the GPS cable out from the Fakra connector.



Window Tinting

GPS signals are blocked by metal surfaces which can include some brands of window film that contain metal particles. To ensure that GPS, cell phone, smart tag, and radio reception is not affected either:

1. Use a non-metallic tint
2. Avoid tinting the front windshield where the T23 FLEET unit is located (World wide legislative trend is to ban windshield tinting due to increased risk of accidents)
3. Leave a 15 cm gap at the bottom of the windshield and place the T23 FLEET by this opening. This still provides security for vehicle occupants.
4. Use the External GPS Antenna and place the GPS antenna under the front bumper or under the windshield wipers – as long as the antenna is not covered by metal.

The list of good quality non-metallic film includes the 3M film, Madico CharcOOI (not Madico CharcOAI), Huper Optik Ceramic (Stark), and FormulaOne Pinnacle (ceramic film). Costs for good quality metallic film is similar to non-metallic film.

WARNINGS:

- T23 FLEET should be installed in a cool place where air can pass through to avoid unit overheating.
- If you are to install T23 FLEET under the dashboard, make sure that upper or lower base of the unit is touching the surface to allow air to pass through as stated above.
- Your T23 FLEET must be securely mounted in a location where it cannot interfere with the normal operation of the vehicle. It must not be located in a position where the cables or the T23 FLEET Unit may become a hazard to the driver or any passengers.
- Under no circumstances may any part of the T23 FLEET system be installed inside the engine compartment area. (except the GPS antenna cable)

8 Wiring Diagram

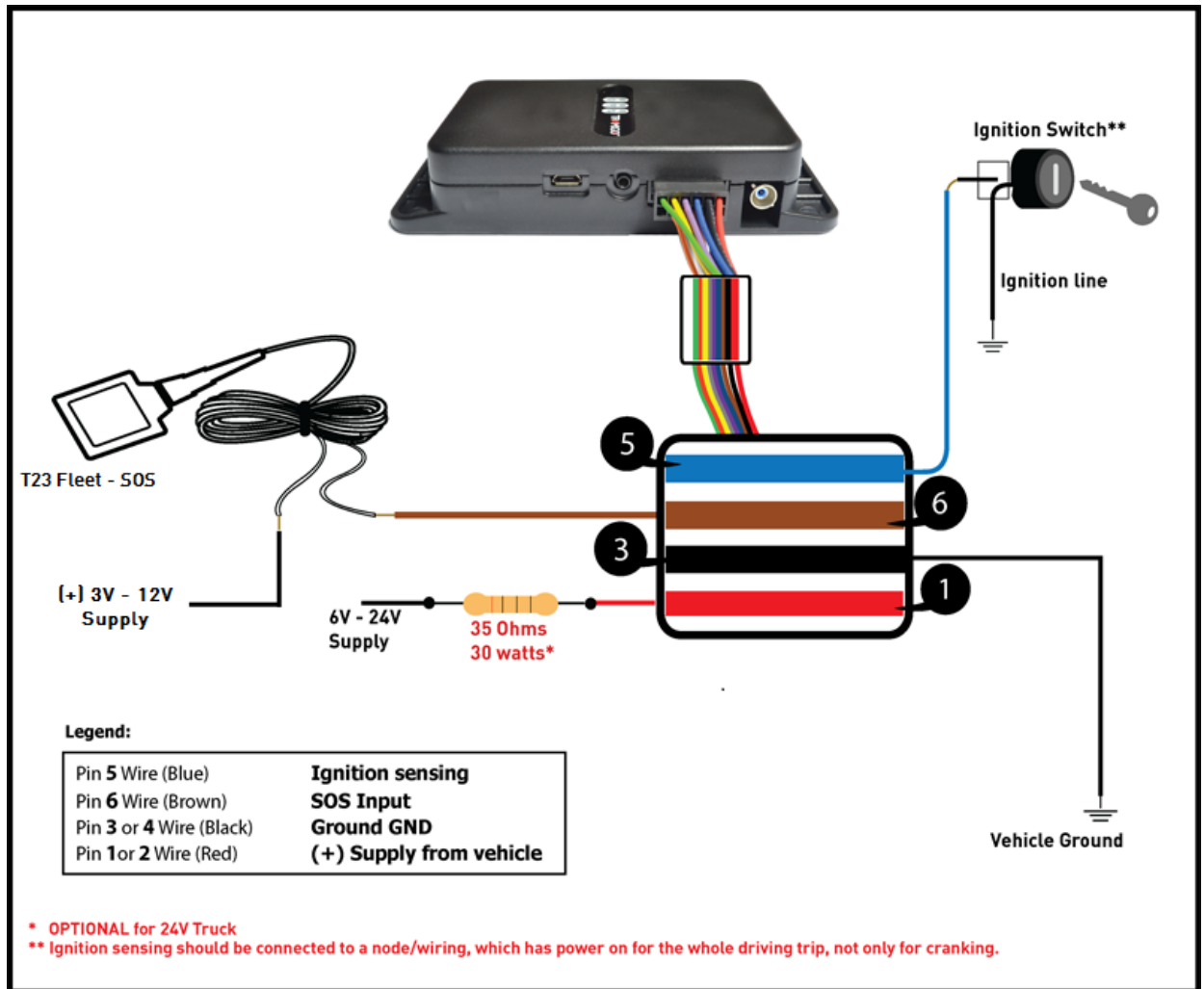


Figure 5 – T23 FLEET Ignition Wiring Diagram

9 T23 FLEET Spare Parts & Order Numbers



Figure 6 - T23 FLEET-GPS (optional)



Figure 7 - T23 FLEET-IO



Figure 8- T23 FLEET-SOS (optional)



Figure 9- T23 FLEET-USB + T23 FLEET-CLA (optional)

10 Troubleshooting

Problem: Unit does not turn on when the power switch is pressed	
Possible Cause:	Resolution:
Power switch was not pressed for 2 seconds or more	Press power switch longer.
Battery needs charging (sometimes lights will be very dim)	Recharge battery. If battery is completely discharged then the Lights will not turn on for 1.5 hours
Power switch disabled by configuration	Remove and re-insert the battery to turn unit on.
Problem: Unit does not respond to SMS	
Possible Cause:	Resolution:
GSM light is on or flashing	Refer to GSM problem resolution
GSM Network is slow	Wait for SMS. Some GSM networks slow down during peak times or when they have equipment problems.
Unit is sleeping	Wait for unit to wake up or activate the motion sensor.
User is not authorized	Check that the user's phone number is added to the user list.
User does not have a high authority for the command	Check the user's authority with the LISTUSER command. T23 FLEET will not respond to any unauthorized commands.
Problem: GSM light is always ON	
Possible Cause:	Resolution:
No GSM signal	Check with a mobile phone to see if there is a signal in the area or try to call the unit to see if you receive a ring tone.
No SIM card	Insert working SIM card. Check through a phone that the SIM can send SMS messages.
SIM card has expired	Check through a phone that the SIM can send SMS messages. Replace SIM card if needed.
SIM has PIN code set	Remove PIN code through a phone by inserting the SIM and delete the code.
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another SIM to see if it will work.
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled.
Battery is low (for portable use)	Recharge the unit for 5-15 minutes and the GSM will start working.
Unknown problem	Remove and re-insert the battery after 1 minute.

Problem: GSM light is flashing (T23 FLEET fails in sending message)	
Possible Cause:	Resolution:
No GSM signal	Check with a mobile phone to see if there is a signal in the area or try to call the unit to see if you receive a ring tone.
Network busy	Wait a few minutes to see if the message gets through.
Zero balance on pre-paid account	Add credit to the account. Unit will recover on its own or send BOOT command to restart the device.
Phone number in user list is incorrect	If you have just added a new user, check that the phone number is correct.
Problem: GPS light is on (T23 FLEET does not have a current location)	
Possible Cause:	Resolution:
Unit does not have clear view of the sky	Move the unit to a location where the sky is visible. Tall buildings, trees, heavy rain, car tinting, can cause problems with the GPS reception.
Car tinting is blocking the GPS signal	Move the unit outside the vehicle – if the light goes off then the tinting is blocking the signal. Either change the tinting in the windshield or install the optional external GPS antenna outside the vehicle.
Unit has been moved a large distance without a location fix. Example: on a flight or train trip.	Remove and re-insert the battery to reset the location.
Problem: Owner has lost their phone	
Possible Cause:	Resolution:
N/A	If a backup owner has been defined then use their phone to add your new number in. Use OWNER,password to add your new number and then delete the old number with the DELUSER command
Problem: Owner has forgotten their password	
Possible Cause:	Resolution:
N/A	The owner can send the RESETSETTINGS command to set the password back to 0000 . All other settings are also reset as if the unit is new. The Owner will have to register the setting and users again.

Problem: Time stamp in the SMS reports is wrong	
Possible Cause:	Resolution:
T23 FLEET requires a GPS fix to determine the time zone and connection to the GSM network to determine the time. Time will show 00:00 Jan 01 on first use.	Wait for the GPS and GSM lights to go off then send the unit an SMS to check the time.
GSM Operator time is incorrect	Use the TIME command to override the GSM time. Some GSM operators have problems with DST and roaming phones.
Problem: Trip end report late and shows long idle time	
Possible Cause:	Resolution:
Motion detector is detecting movement and unit thinks trip is still active.	Reduce sensitivity of motion detector, or locate motion detector in different location.
Problem: Trip reports are received when vehicle is parked	
Possible Cause:	Resolution:
Vehicle is parked with a limited view of the sky so the GPS signals are weak and bounce off the buildings. This can generate short trip reports.	<p>Turn off trip reporting when in these locations.</p> <p>If you are not interested in short trip reports Increase the minimum trip distance to 1 km or higher Set,MinTripDistance,1000</p>
Problem: Vehicle shows as parked, but its moving	
Possible Cause:	Resolution:
Your T23 FLEET will report a state of Parked when a Trip has not been started which takes 300m, so if a FIND or any other report is received during this time, it will show the vehicle as "Parked".	None. Once a Trip Start is detected, the vehicle state will change to moving or stopped

As we constantly strive to improve our products, all specifications are subject to change without notice. The information provided herein is believed to be correct at the time of going to press.