



Tramigo™ T23 Series

Immobilizer Relay Guide
V.1.091



This installation guidance is for the Tramigo™ T23 IMMOBILIZER12 and IMMOBILIZER24 Relays.

Note: This guide applies to T23 and Revision B series T23 Fleet and T23 Track. Rev B devices have written "Rev B" on label under the battery and Firmware version has a letter 'P' before the version number. "T23 Series" refers to T23, T23 Fleet and T23 Track.

The Immobilizer feature is used to disable a car's ignition. This option requires special wiring that must be done carefully to ensure trouble-free operation.

IMPORTANT NOTICE:

This is an exemplary installation scheme only. Variation may be required depending to the type of vehicle or machine to which T23 Series will be installed. All possible direct and indirect damages caused by the installation are the sole responsibility of the installer or installing body. The installer or installing body is responsible to test and ensure the functionality of their installation. All possible direct and indirect damages caused by the use of the immobilizer are the sole responsibility of the end user. Tramigo™ Ltd's manufacturer responsibility is limited to the function of Tramigo T23 Series unit as stated in the warranty clause that can be found from the User Manual and is not extended in any way for the installation done by a third party.

The installation should always be done only by professional auto-electrician, which have been properly trained to install or service the Immobilizer. We recommend that you do NOT install the Immobilizer yourself, unless you are a professional auto electrician and knowledgeable about the Immobilizer.

The installer or installing body is responsible that the installation complies with local legislation. Additionally if the Immobilizer is to be installed to a vehicle the installer, Installing body and the end user are responsible to check the local legislation regarding the execution of the immobilization command and comply with the regulations. Extreme caution must always be used if the immobilization command is executed on a moving vehicle and the immobilizer is installed to disable the engine rather than the starter. SMS can take a while to be received, so the vehicle may be in a dangerous location or travelling at a high speed when the immobilizer is activated. Vehicle's engine will be shut down, power steering will be lost and the vehicle will be difficult to control.

The disable command is used to activate the immobilizer. Disable,on prevents the engine from starting or stops the engine depending on the installation. This will occur immediately if the vehicle is parked or 45 seconds after the ignition has been turned off, and vehicle is not in moving state. Disable,off allows the engine to start. You must have SMS coverage to be able to use these commands. Disable,on,forced shall immobilize the vehicle regardless of the vehicle state. Please use this command with extra caution.

This feature is supported by firmware v.1.07 or higher

Command:

- | | |
|-------------------|-------------------------------------------------------------------|
| Disable,on | - immobilizer will engage only when it meets conditions |
| Disable,on,forced | - immobilize the vehicle as soon as T23 Series receives the SMS. |
| Disable,off | - immobilizer has been turned off and vehicle may function again. |
- Vehicle must have GSM coverage for these commands to work.

Conditions:

- ✓ Car should be stopped or parked
- ✓ Not moving
- ✓ Car's speed is < 30 km/h
- ✓ Ignition is off



The immobilizer works as follows:

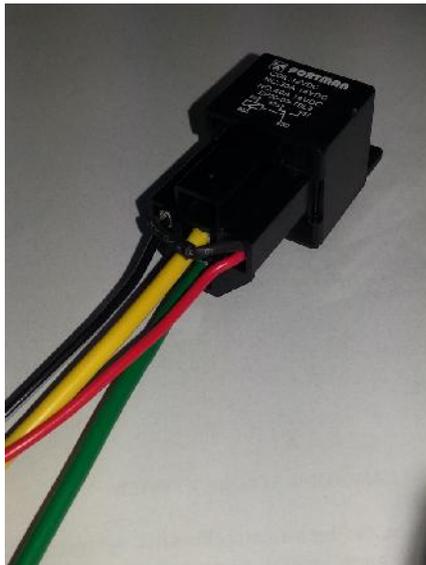
Note you have to use Ignition sensing with the immobilizer option.

What To Do?	Report/s to be Received	Effect/Result
Scenario 1. Vehicle is parked, (speed < 30 km/h), ignition is off.		
Send DISABLE,ON command	Tramigo: Disable, vehicle ignition disabled, 18:29 May 31	Immobilizer takes effect immediately. Vehicle will not be starting up after activation. NOTE: not in trip mode – vehicle has been parked with ignition off for 15 minutes
Scenario 2. Vehicle is moving.		
Send DISABLE,ON command	Tramigo: Disable, Vehicle ignition will be disabled 45 seconds after the ignition is turned off, 18:32 May 31	Immobilizer will take effect when ignition has been switched off for 45 seconds and the speed is below 30 km/h.
Scenario 3. Vehicle is immobilized and won't start.		
Send DISABLE,OFF command	Tramigo: Disable, vehicle ignition enabled, 18:39 May 31	Immobilizer will disengage. Vehicle may be started.

Note: Use parameter ImmobilizerMaxSpeed to set the speed below immobilizing takes effect, default value is 30 km/h.

Relay

Relay has 5 different wire colors: BLACK w/ WHITE STRIPE, RED, GREEN, YELLOW and ORANGE. Each color has its designated connections for Immobilizer with T23.





1. Installation, Normally Closed

Normally Closed means that relay is pulling only when vehicle is disabled.

Procedures of connecting the Relay:

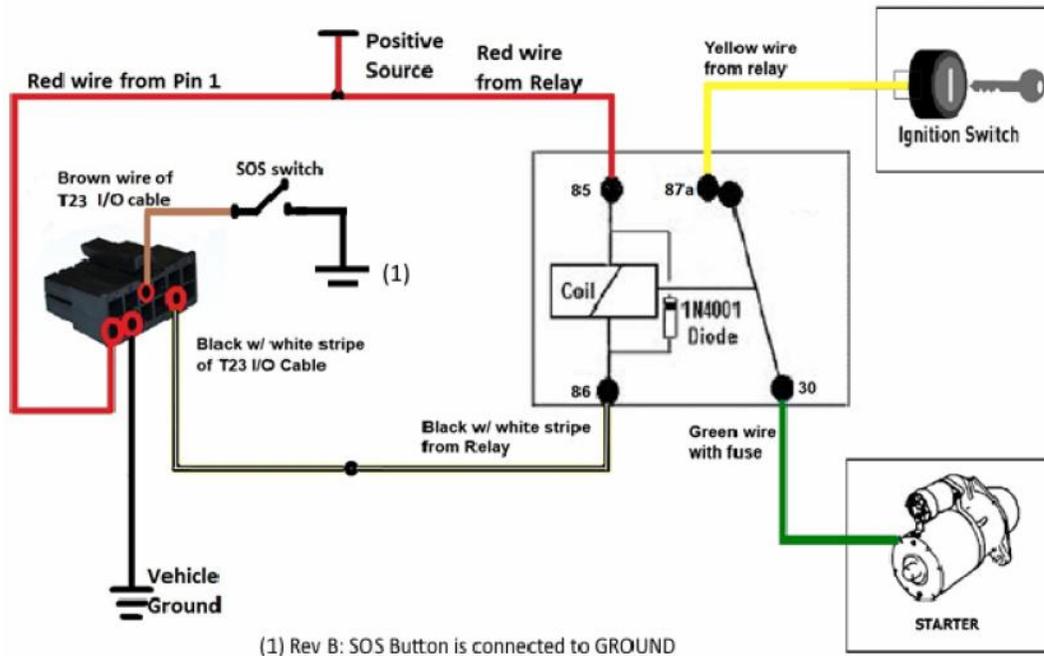
The T23 Series come at least with BASIC I/O cable; it has the Output 1 wire.

1. First, cut the ignition line of the vehicle. Determine which is connected to the Ignition Switch and the Vehicle starter. The Ignition switch is the wire which receives power every time we start the Ignition switch. The other wire will be the vehicle starter
2. Connect the GREEN cable (Pin #30) of the relay to the wire from vehicle starter. Consequently, connect the YELLOW cable (Pin #87a) of the relay to the wire from Ignition Switch
3. Connect the RED cable (Pin #85) of the relay to the Vehicle Positive Source, usually the vehicle battery. Also tap the RED wire from the T23 I/O cable
4. Next, connect the BLACK w/ WHITE STRIPE cable (Pin #86) of the relay to the BLACK w/ WHITE STRIPE wire of the T23 I/O cable
5. Lastly, tap the BLACK wires from the T23 I/O cable to the vehicle negative ground. Usually, the Vehicle chassis can be used as the negative ground

Note: Normally Closed (YELLOW wire) configuration command:

- o output,1,immobilizer,disable,1,0

For further reference, consult the diagram below.





2. Installation, Normally Open

Normally Open means that relay is NOT pulling when vehicle is disabled. Hence it is pulling when vehicle is running.

Procedures of connecting the Relay:

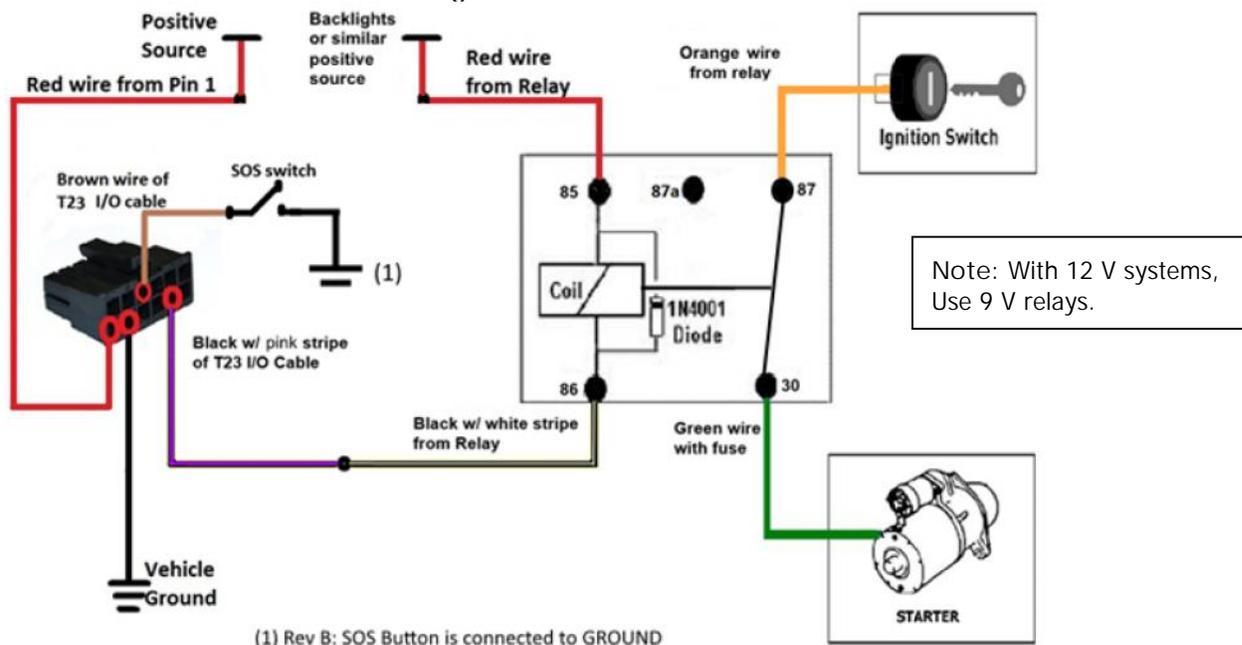
Important: Normally Open is only available with T23 Fleet and T23 Track. FULL 11 or 12 wires I/O cable is needed; it has the wire for Output 2.

1. First, cut the ignition line of the vehicle. Determine which is connected to the Ignition Switch and the Vehicle starter. The Ignition switch is the wire which receives power every time we start the Ignition switch. The other wire will be the vehicle starter
2. Connect the GREEN cable (Pin #30) of the relay to the wire from vehicle starter. Consequently, connect the ORANGE cable (Pin #87) of the relay to the wire from Ignition Switch
3. Connect the RED cable (Pin #85) of the relay to the power source which gives power when vehicle power is turned on, like back lights for example. Tap the RED wire from the T23 I/O cable to permanent power source
4. Next, connect the BLACK w/ WHITE STRIPE cable (Pin #86) of the relay to the BLACK w/ PINK STRIPE wire of the T23 I/O cable
5. Lastly, tap the BLACK wires from the T23 I/O cable to the vehicle negative ground. Usually, the Vehicle chassis can be used as the negative ground

Must be done! Normally Closed (ORANGE wire) configuration commands:

- o output,1,general,disable,1,1,0
- o output,2,immobilizer,disable,1,1,0

For further reference, consult the diagram below.





GENERAL NOTES

- Relays Black w/ White Stripe wire can be plain Black wire.
- T23 Fleet and T23 Track inputs 1 and 3 are voltage triggered, on/off threshold is ~3.0 VDC, commonly used for Ignition and Powercut.
- T23 Fleet and T23 Track inputs 2 and 4 are ground triggered, use with SOS button and for example door sensor. Connect other end to ground.
- Note: T23 all inputs are voltage triggered, including SOS button.

Important: Normally Open configuration and 12 V systems, use 9 V relays. Refers to coil voltage, relay's coil wires are Black w/ White Stripe and Red.

Note: Vehicle manufacturers warranty may be voided if the install is not done by their staff. Take these instructions and parts to their service center for installation.

Additional Information: For FW version 1.08 and later, use INSTALL command to have an easier way of configuration.

Send INSTALL and follow instructions that will be sent by the T23 Series unit

1. Start the car to configure ignition sensing.
2. Press SOS button for 3 seconds if installed.
3. Vehicle will be disabled after 30 seconds if immobilizer is installed.

Note that INSTALL command requires the unit to be fixed in its final position of installation, it must NOT move from where it will be fixed inside the car.

To check status of installation, send:

- o GET,INSTALLSTATUS



Hints and Tips:

- You may want to disable sleep mode so that your unit is always online and ready. When unit is in deep sleep mode it will not be able to process your request and may not be able to receive your command. T23 Series will however wake to any movement. To disable sleep mode, send Set,Sleep,0 to your T23 Series.
- There is T23 IMMOBILIZER12 and T23 IMMOBILIZER24 for 12V and 24V systems respectively.
- To test your connection unplug the I/O cable from the T23 Series, the vehicle should be able to start without the T23 Series unit.
- If your immobilizer is not working despite the right wirings, try reversing the YELLOW/ORANGE and GREEN wires.
- Three most common places for installing the immobilizer is the starter motor, ignition, or the fuel pump. For petrol engines you can use ignition and for diesel engines starter. However, for forced stopping of the vehicle, fuel pump is the safest but this installation must only be made by authorized installer with fuel pump experience. Fuel pump would be the best option for Normally Open configuration. For new cars not applicable of the previous options, there can be a possibility to immobilize the vehicle computer system or use the existing immobilizer.
- Vehicle GND (GROUND) refers to any metallic part of the chassis.
- Use special cloth black adhesive tape which is used by car manufacturing companies, so the wiring looks like it has not been tampered.

Should there be some unclear details, please email support@tramigo.com