COLLECTIVE INTELLIGENCE GROUP

RENTALiQ

HARDWARE INSTALLATION GUIDE

(Version 1.0)

RENTALiQ **Installation Manual**	
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This manual is intended to explain in a general fashion, how to set up the system but is not specific to any type or model of vehicle.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

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Introduction

Introducing our revolutionary RENTALiQ - Remote Hour Meter with Driver ID, the ultimate solution for efficient time tracking and driver management. Designed to streamline operations and enhance productivity, this innovative device combines advanced technology with user-friendly features to meet the demanding needs of various industries. Whether you run a logistics company, a fleet management service, or a construction site, our RENTALiQ - Remote Hour Meter with Driver ID offers a seamless way to monitor and record hours worked by individual drivers, providing accurate data for billing, payroll, and compliance purposes.

Components

A standard RENTALiQ kit consists of the following components:
- Main Module

- Micro (3FF) SIM Card (The SIM is already inserted in the unit)
- iButton Reader (If you have opted into the function)
- Ignition Cutout Relay Kit (If you have opted into the function)

Wiring overview

- The RENTALiQ comes with a 1m long, 10 wire harness.
- 15 mm is pre stripped on the loose ends of the input (red), ground (black) and the ignition (white) wires.

Wire Definition

PIN	COLOUR	FUNCTION
1		VIN
2		GROUND
3		IGNITION
4		DIGITAL INPUT 1
5		DIGITAL INPUT 2
6		DRIVER ID 1 (iButton Data / Wiegand D1 / TTL TX)
7		DRIVER ID 2 (Digital Input 3 / Wiegand D0 / TTL RX)
8		SWITCHED GROUND
9		ANALOGUE INPUT
10		GROUND

Installation

Step 1 – Mount the Unit

- The best location to install the tracking unit is above the instrument cluster underneath the dash. This provides a clear signal view of the sky through the windshield.
- The tracking unit can receive a signal through glass, plastic, fiberglass, and fabric type materials.

Note: Mounting underneath a large piece of metal or in a metal container will prevent the tracking unit from working.
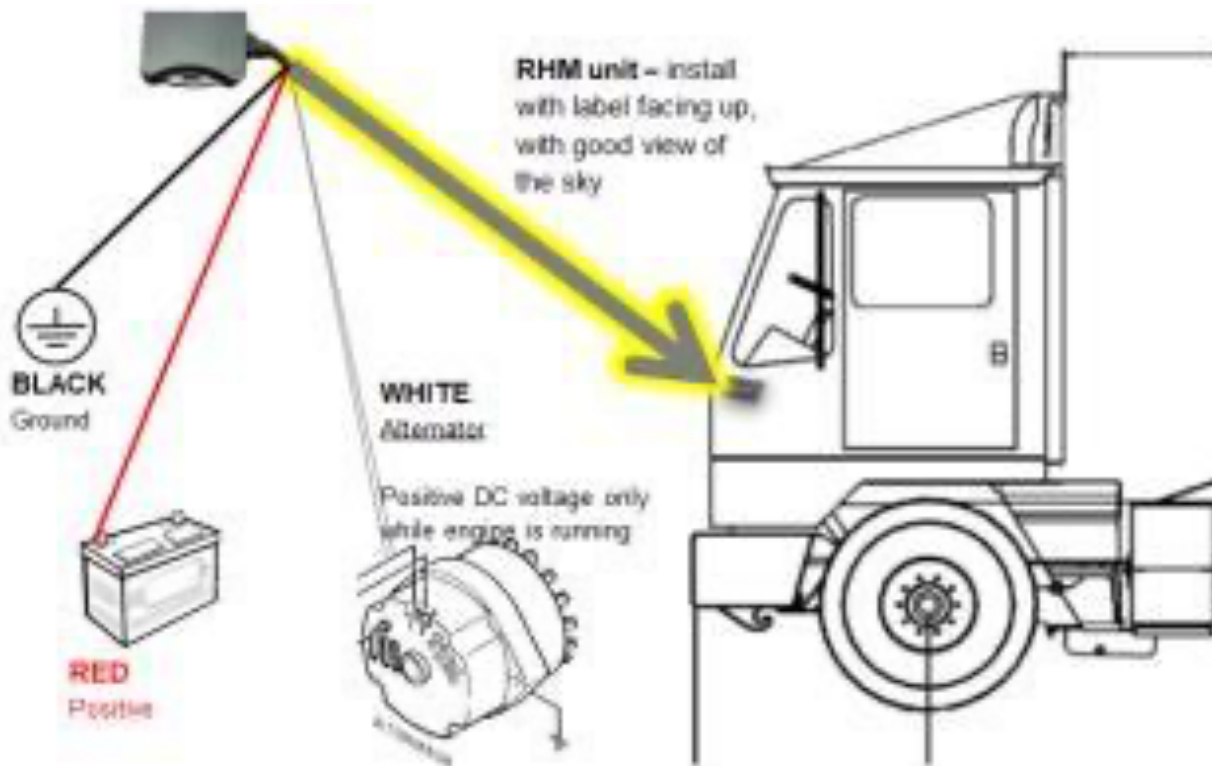
Step 2 – Install the Ground Wiring (BLACK WIRE)
- The ground line (black wire) must be connected to chassis ground.

Step 3 – Install the Constant Power Wiring (RED WIRE)
- Must be connected to an un-switched VDC supply of between 8 and 33 Volts. - This is preferably connected directly, or as close as possible, to the vehicle battery terminal.
- For best results, it is strongly recommended that the (red wire) connection be on its own circuit.
- Connect the Constant power (red wire) input directly to the vehicle battery if possible and protect the circuit with an inline fuse.
- If you must connect through the fuse box, use standard commercial wiring practices to create a permanent installation rather than using press-in fuse clips or other temporary measures.

Note: Failure to connect these lines in the manner described may result in discharge of the vehicle battery.

QUICK CHECKLIST!

- Constant power (red wire) should measure:
  - greater than 8 Volts
  - and less than 33 Volts
- Ground (black wire) should be grounded properly.
- The Constant power (red wire) should always remain above 8 Volts, but you may find it increases from 12 to 14 Volts when the vehicle Ignition/Alternator/Engine is running.
- This is typical of a standard vehicle but may vary by model.

Permanent (Red) + wire   14 Volts (Ignition On - Alternator running)

12 Volts (Ignition Off)
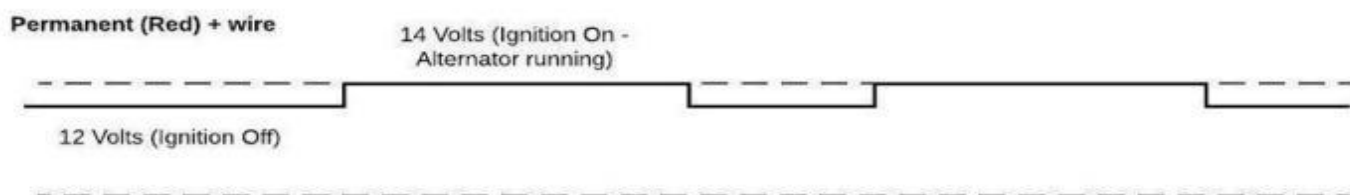
### Step 4 – Install Hour Meter Wiring (White Wire)

The Hour Meter is calculated using a signal typically from the Alternator, however in some cases a fuel or oil pressure switch, current sensor or other such switch is used.
It is NOT recommended to connect the WHITE WIRE to the ignition since it is not a good indication of actual operation.

NOTE: It is critical to the operation of the unit that only one of the following options is selected when installing. Incorrectly installing both can result in incorrect hour meter reporting and erroneous ignition events being reported to the system.

- An ideal signal for use as a positive trigger will remain in the high state while the engine of the vehicle is running and will drop to 0 Volts when the engine is switched off. The high state can be any voltage between 5-32 Volts.

- Typically, a positive trigger will be used in vehicles:
  - With an Alternator that has an output feed
  - Where a Current Sensor is used to determine the Engine is operating

- The RENTALiQ requires a consistent voltage for a period of 5 seconds during a transition between Engine ON and OFF (or OFF and ON).

In the diagram below, you can see a good positive trigger.
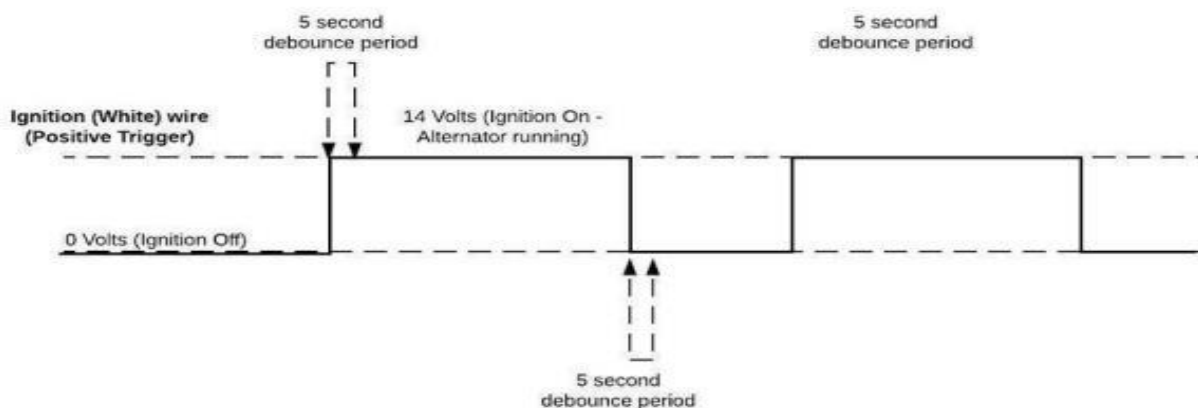
Here the Alternator is providing a 14 Volt signal steadily and consistently while the engine is running, then providing 0 Volts consistently when the engine is off.

QUICK CHECKLIST!

The hour meter (white wire) should be:
- 0 Volts when the Alternator/Engine is OFF
- Greater than 5 Volts and less than 32 Volts when the Alternator/Engine is on
- Consistently transitioning from 0 Volts (OFF) to 5+ Volts (ON) with no short voltage spikes or troughs.

Step 5 – Connecting an IButton Reader (If opted in)

- Connect Brown (Driver ID 1/iButton Line) on the RENTALiQ to the Red iButton Signal Line
- Connect the Black iButton wire to Ground.
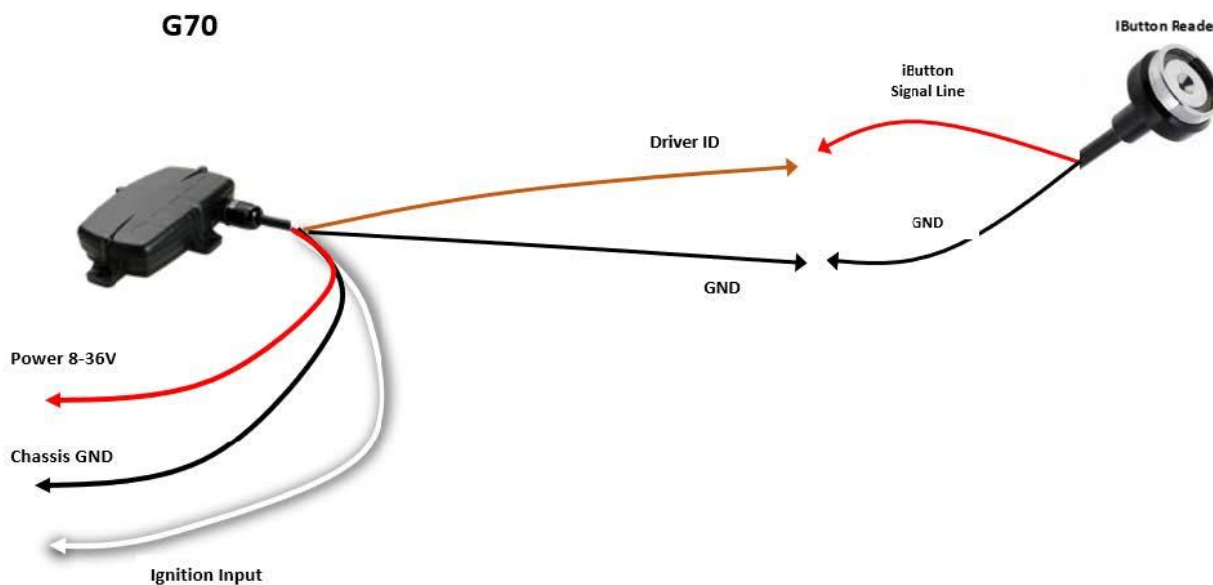
Step 6 – Immobilizer Install – Asset Starts after Valid Driver ID Scan (If opted in)

Concept
- The RENTALiQ has a switched ground output. This is the **GREEN** wire.
- The SW GND can be wired to a relay, to control the relay.
- The relay is also wired to cut/close the starter motor circuit for a vehicle, meaning that whether a vehicle can start or not can be controlled by the RENTALiQ.
- Immobilization can be turned on/off by the RENTALiQ based on Driver ID Tag scans, or a command from the server.

Wiring Configurations
There are different ways to wire in a relay and configure the device settings to achieve a similar result. However, the aim is to try to avoid having the relay coil energized for an extended period - to not drain the vehicle battery if it is not driven for some time.

Automotive relays will have 2 contacts:
Normally Open
- The 'default' state when the relay is not energized is **open** (break in circuit)

Normally Closed
- The 'default' state, when the really is not energized is closed (closed loop)

This Guide covers the following use case:

The vehicle cannot be started until the right driver ID tag is scanned.
- In this case when the relay is not energized, we want there to be a break in the start motor circuit.

So, we wire to the Normally Open contact.
- If one form of immobilization (server command or Driver ID) OR the other is active, the asset can't start.

Step 6 – Setup continued

Wiring and Installation
- Connect pin 86 (relay positive) to the Vehicle Positive
- Pins 30 and 87 (normally open) are wired to form the break in the start motor.
- Connect the switched ground (Green Wire) to the relay negative, pin 85.
- Use the Driver ID reader provided.
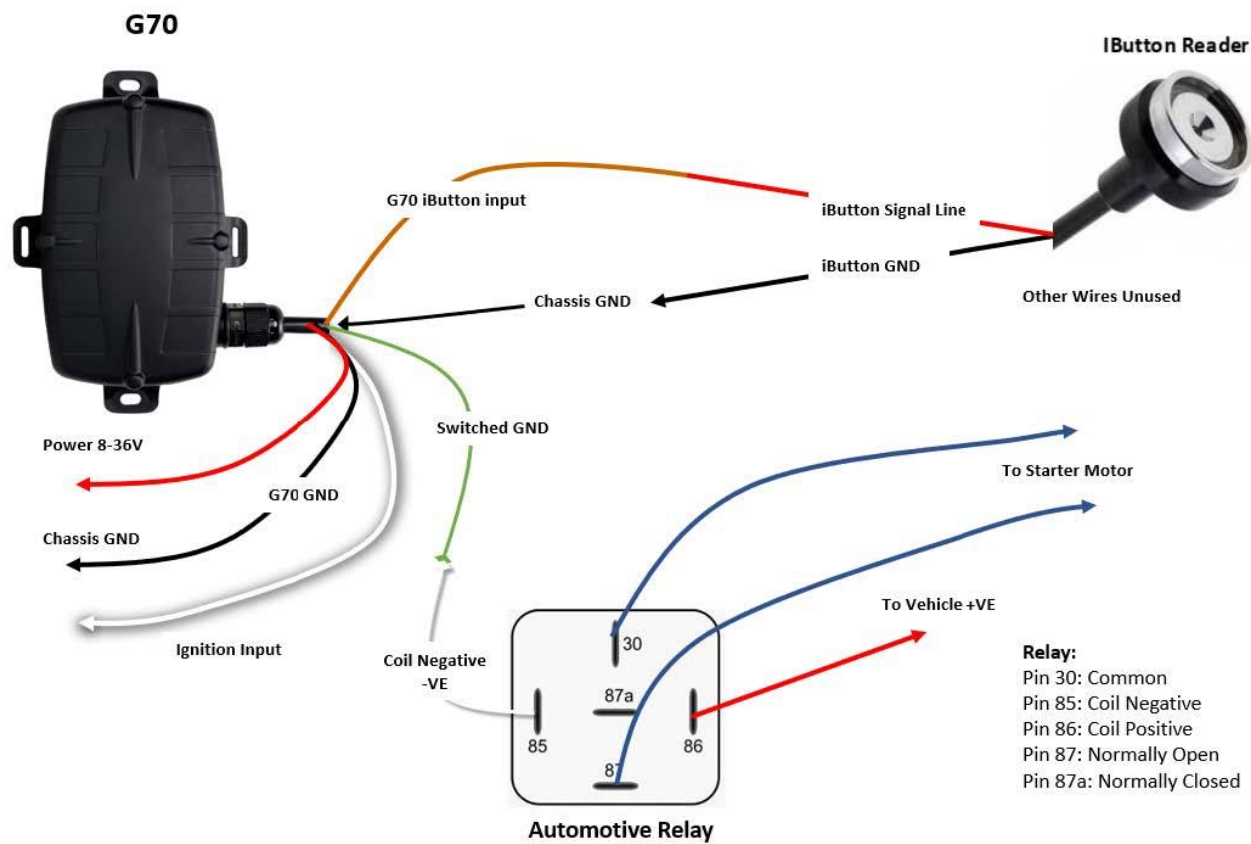
Step 7 – Verify Correct Installation

Once the tracker is mounted and all the wires are connected, the last step is to go to our installer page to verify that the installation is done correctly.

- Using a desktop or your phone, please go to https://www.oemserver.com/installer.
- This web page is not password protected and is designed to not give any sensitive information away.
- Enter the Serial Number of the Tracker and press Find.

Step 7 continued:

- Check the device has connected, communicated, and committed recently (within the day)
- Check the power is what you expect.
- To Check if the Ignition Wire is connected properly use the Quick Checklist on this guide.

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