

OPERATION INSTRUCTIONS FOR **ROLLING CODE ALARM: RA97**

INSURANCE APPROVED SPLIT SYSTEM MODEL WITH
ENGINE IMMOBILISATION AND BOOT RELEASE

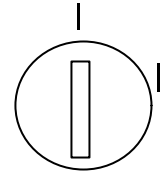


V2

OVERRIDE KEYSWITCH & BACKUP BATTERY TEST

Located on the back of the siren is a 2 position mechanical keyswitch .

1. Off position - complete deactivation of system.
2. On position - activates alarm system.
3. Test mode - turn key from off to on. 1 Beep = OK, 5 Beeps = Flat



TO ARM/DISARM ALARM

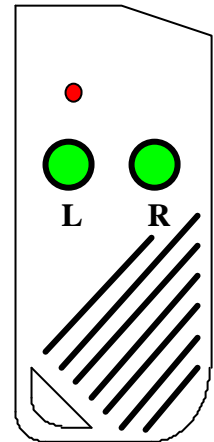
The alarm is activated by pressing the **RIGHT** button on the remote control transmitter. The blinkers will flash once, and the siren will beep once. The dash LED-light will stay on for 20 seconds then flash, **THE ALARM IS NOW ON**. To deactivate the alarm, press the **RIGHT** button again. The blinkers will flash twice and the siren will beep twice. **THE ALARM IS NOW OFF**.

For audible arm / disarm press the **RIGHT** button.

For silent arm / disarm press **BOTH** buttons.

EMERGENCY PANIC BUTTON **OPERATED VIA REMOTE CONTROL**

The panic feature is activated by pressing the right button on the remote control transmitter for 3 seconds. This sets off the siren. To cancel "panic", press the button on the transmitter for 1 second. **NOTE:** Panic does not work when the ignition is on by requirement of Australian Law (EPA-Environmental Protection Agency).



BOOT RELEASE - Available on cars fitted with electric boot release motors.

The alarm is fitted with remote boot release capability. This feature enables the user to unlock the boot by pressing the **left** button for **3 seconds**. The boot will unlock and the alarm will disarm with audible beeps. **NOTE:** For safety reasons the remote boot release will not work when the ignition is on.

DOOR AJAR WARNING FEATURE

If the vehicles doors are not properly closed when you try to activate your alarm system, the blinkers will flash and the siren will continuously beep for 3 seconds to alert you that the vehicle is not secure.

SELECTABLE PASSIVE ARM & RE-ARM FEATURES

PASSIVE ARMING: The alarm can automatically arm itself one minute after you leave your vehicle provided that the ignition is turned off, and that at least one door has been opened and closed ie. the owner has parked and has exited the vehicle. This feature **will not lock** the vehicle where central locking is connected.

AUTOMATIC RE-ARM FEATURE: This feature prevents accidental disarming by the owner ie. the owner turns the alarm off but is then distracted and forgets that they have deactivated the system. If a door is not opened within one minute from when the system is turned off by the remote, the system will **re-arm** and if central locking is connected it **will re-lock** the vehicle.

PRE-ALERT IMPACT WARNING WITH ETS™

This special feature provides a two stage impact sensing system. It gives the security conscious owner a very sensitive impact sensor that will give a potential thief prior warning that the vehicle is protected by this most formidable alarm system. On detection the siren will simply beep for a few seconds to warn away the thief. If the vehicle is attacked any further the system will move into full siren mode. The unique ETS™ Environment Tuned Sensor is able to distinguish between environmental shocks caused by aircraft, trucks, or extreme weather conditions, and the impact caused by any thief attempting to break in or other heavy impacts. This process allows a trouble free sensitivity that ordinary alarms simply can not provide.

PAT™ PAST ALARM TRIGGER MEMORY

If the alarm was triggered by an intruder while your alarm was set, it will beep the siren and flash the blinkers four times on disarm. The system will also store the ten last times the alarm has been activated in its memory, and can tell you what has triggered the system. Please refer to “Features used by Users and Installers” contained later in these instructions.

SERVICE MODE

Service mode is accessed by turning the key switch to the off position. This enables complete deactivation of the system without using the remote control. This is normally done when other mechanical/electrical work is performed on the vehicle. The installer test mode is used to quickly test and fault find; it is used to check each sector input when door, hood, aux or voltage drop is triggered. A signal is given via the blinkers, the dash LED light and the siren.

LEARNING NEW TRANSMITTERS

To add a new transmitter to your alarm, simply follow the procedure below:

- A. Turn the vehicle's ignition on.
- B. Immediately press and hold the right button on the original remote control until the siren starts to beep (approximately 4 seconds) and then release the button.
- C. Immediately press and hold the right button on the new remote control for at least 4 seconds.
- D. Turn the vehicle's ignition off.
- E. The new remote control is now programmed into the alarm.

RHINO ALARM MODEL: RA97

STANDARD SYSTEM FEATURES

- ~ All Microprocessor Controlled
- ~ Rolling Code Technology (Anti-Scanning, Anti-Code Grabbing)
- ~ Two SSR™ Solid State Remote Controls with Two Function Operation
 - ~ Long Life Lithium Cell Remote Control Batteries
 - ~ Ultra-Bright Red Flashing LED Light
 - ~ Personal Panic Button via Remote Control
 - ~ Automatic Siren Reset Period (30 Seconds)
 - ~ Visual Arming and Disarming via Blinkers
 - ~ Selectable Current Sensing Circuit
 - ~ All Points of Entry Protection
- ~ PAT™ Past Alarm Trigger Memory History Reporting Mode
 - ~ Service and Override Mechanical Keyswitch
 - ~ Safety Circuit Prevents Arming While Ignition On
- ~ Learning Mode for Optional Transmitters (Remote Controls)
 - ~ Negative Pulse Central Locking Outputs
 - ~ Two Point Engine Immobilisation
 - ~ Battery Backup System
- ~ Automatic Battery Test via Dash LED Light
- ~ Two Stage Shock Sensor

SELECTABLE SYSTEM FEATURES

- ~ Arming and Disarming Confirmation Beep
- ~ Passive Arming Programmable via Remote Control
 - ~ Door Ajar Warning (If a Door is Left Open)
 - ~ Automatic Re-arm in case of Accidental Disarm
- ~ Auto Re-lock for Accidental Disarm where Central Locking is connected
 - ~ Quiet Arming Selectable via Remote Control
- ~ Impact Sensor and Ultrasonic Isolation Programmable via Remote Control
 - ~ Electric Boot Release Output via Remote Control
 - ~ Lock Pulse on Alarm Trigger
 - ~ Multiple Vehicle Remote Controls
 - ~ Silent Operation
 - ~ Valet Mode
 - ~ Central Closure
 - ~ Auto Immobilise
 - ~ Door Lock on Ignition
 - ~ 2 Second Exit Delay
- ~ Passive Arm From Ignition Only
 - ~ Perimeter Night Light
- ~ External Pre-Warn Output
- ~ Shock Sensor Sensitivity Adjustment

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WIRING INSTRUCTIONS

RED	- CONNECT TO CONSTANT +12 VOLTS VIA THE FUSE BOX AT THE POINT WHERE THE INTERIOR LIGHT CIRCUIT IS POWERED. CURRENT (VOLTAGE) SENSING WILL NOT WORK IF THIS PROCEDURE IS NOT FOLLOWED.
BLACK	- CONNECT TO A SUITABLE EARTH ON THE CAR BODY
ORANGE (x2)	- CONNECT TO THE LEFT AND RIGHT INDICATOR CIRCUITS OF THE VEHICLE TO FLASH THE INDICATORS
YELLOW	- CONNECT TO A +12 VOLTS IGNITION SWITCHED LEAD, WHICH <i>DOES NOT FALL TO 0 VOLT WHEN THE ENGINE IS CRANKED</i>
DARK BLUE	- CONNECT TO PIN SWITCHES FOR BONNET - CONNECT TO PIN SWITCHES FOR BOOT (PLEASE NOTE: IT IS ADVISABLE TO WIRE THE BOOT TO THE DOOR SWITCHES: THIS WILL PROVIDE “DOOR AJAR” WARNING ON THE BOOT, AND ALSO SIGNAL THE AUTO RE-ARM FEATURE TO CANCEL IF THE BOOT IS OPENED BY THE OWNER ON DISARMING THE SYSTEM.)
WHITE	- CONNECT TO EXISTING DOOR SWITCHES. (PLEASE NOTE: ONLY NEGATIVE SWITCHING DOORS, IF POSITIVE DOOR SWITCHING - MUST USE RELAYS TO REVERSE TO NEGATIVE - SEE DIAGRAM)
GREEN (X2) Inside main loom	- LOCATE THE POSITIVE FEED WIRE TO THE STARTER SOLENOID, CUT THAT WIRE AND JOIN THE TWO GREEN WIRES TO EITHER END OF THE STARTER FEED WIRE WHICH YOU HAVE JUST CUT WARNING: CUT OUT RELAYS HAVE 12A MAX RATING. DISABLE ONLY STARTER SOLENOID, FUEL PUMP, OR IGNITION COIL IF VEHICLE IS NOT EFI. UNDER NO CIRCUMSTANCES SHOULD YOU CUT THE VEHICLE’S MAIN IGNITION SYSTEM.
GREEN (X2) Outside main loom	- LOCATE THE POSITIVE FEED WIRE TO THE FUEL PUMP, CUT THAT WIRE AND JOIN THE TWO GREEN WIRES TO EITHER END OF THE FUEL PUMP FEED WIRE WHICH YOU HAVE JUST CUT WARNING: CUT OUT RELAYS HAVE 12A MAX RATING. DISABLE ONLY STARTER SOLENOID, FUEL PUMP, OR IGNITION COIL IF VEHICLE IS NOT EFI. UNDER NO CIRCUMSTANCES SHOULD YOU CUT THE VEHICLE’S MAIN IGNITION SYSTEM.
YELLOW/ BLACK	- THIS IS A SWITCHED NEGATIVE OUTPUT (-VE 150mA). CONNECT TO THE NEGATIVE WIRE (USUALLY BLACK) ON ANY ACCESSORY USED ie. ULTRASONIC / GLASS BREAKAGE / MICROWAVE DETECTORS OR ETC
LIGHT BLUE	- THIS IS A NEGATIVE TRIGGER, AND SHOULD BE CONNECTED TO THE OUTPUT CIRCUIT WIRE ON ANY ACCESSORY TO BE USED. (ie ULTRASONIC, MICROWAVE, OR GLASS BREAK DETECTORS, ETC.)
BROWN	- THIS IS THE NEGATIVE OUTPUT (150mA MAXIMUM) FOR THE BOOT RELEASE. (Optional for use where electric boot release is to be connected)
VIOLET/BLACK	- NEGATIVE TRIGGER ON ALARM TO BE USED TO INTERFACE TO PAGER OR OPTIONAL SIREN (100mA MAXIMUM)
ORANGE/BLACK	- NEGATIVE PULSE LOCK SIGNAL
PINK/YELLOW	- NEGATIVE PULSE UNLOCK SIGNAL
PINK	- CURRENT SENSING OVERRIDE. CONNECT TO POSITIVE POWER TO DISABLE CURRENT SENSING. THIS CAN ALSO BE ACHIEVED VIA PROGRAMMING. SEE BELOW
RED/WHITE	- NEGATIVE TRIGGER TO SIREN. CONNECT TO THE GREEN WIRE OF AN SB41.
VIOLET/YELLOW	- ALARM OVER RIDE. CONNECT TO THE WHITE WIRE ON AN SB41.

CURRENT SENSING

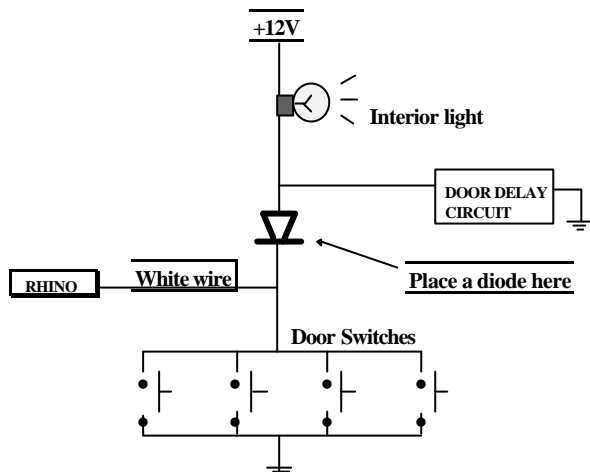
The alarm is fitted standard with current sensing. This feature incorporated in Rhino systems has been proven to be very reliable. The alarm will detect any sudden drop in voltage in the vehicle's electrical system, for example if the interior light comes on, or if the electrical system shows a voltage drop through tampering.

PLEASE NOTE: If removal of this feature is necessary i.e. if engine cooling fans run after the ignition key is turned off, please refer to Register 3 in the Programmable Features section of this manual. You are able to disable the current sensing feature so that a false alarm condition can not occur.

IMPORTANT NOTE: Vehicles fitted with an interior light delay.

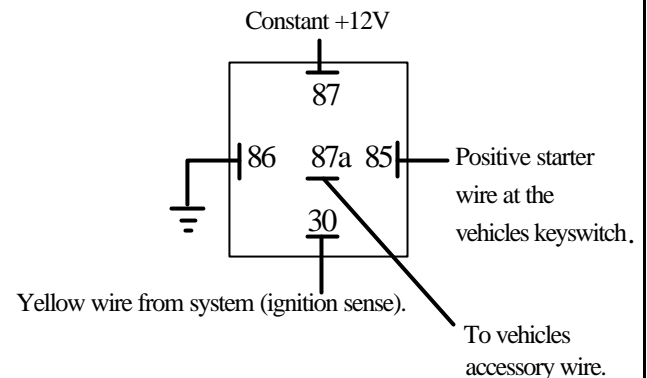
Vehicles fitted with an interior light delay require a diode to be added to prevent the system giving a door ajar warning.

Please follow the wiring diagram below:



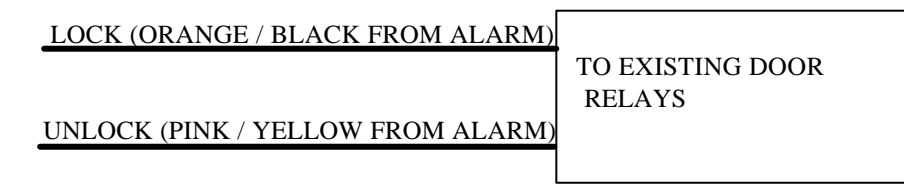
VEHICLES FITTED WITH TURBO TIMERS:

It is necessary to fit a relay as shown below to allow the system to arm while the car is still running on a timer.



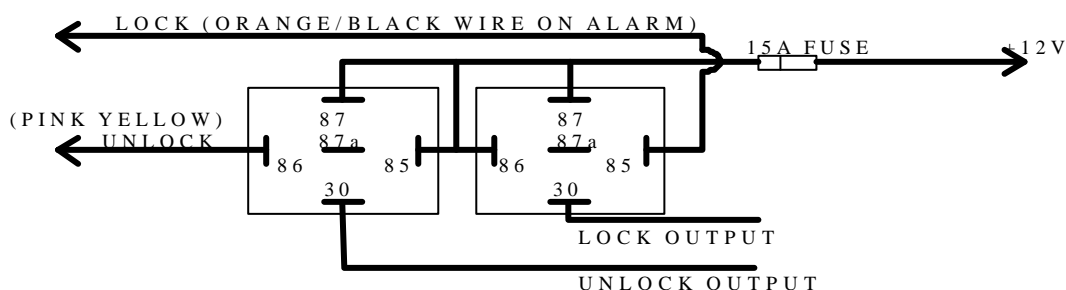
N.B. It is also necessary to connect the pink wire from the Rhino system to constant +12V to override current (voltage) sensing.

FOR “NEGATIVE TRIGGER” ORIGINAL POWER LOCK SYSTEM



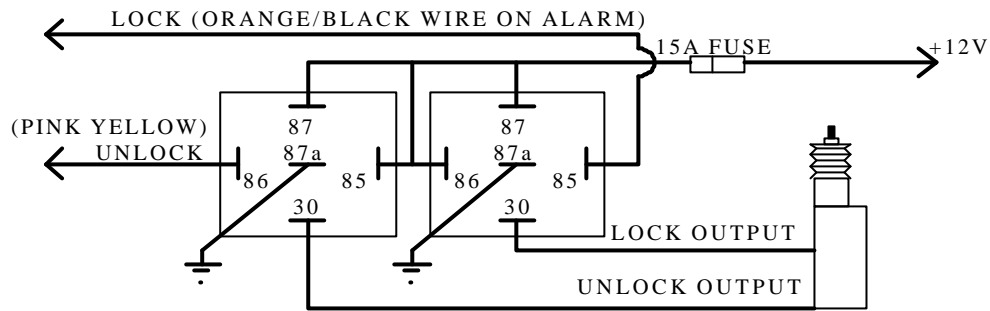
FOR “POSITIVE PULSE” POWERLOCK SYSTEM

CONNECT OPTIONAL RELAYS AS SHOWN

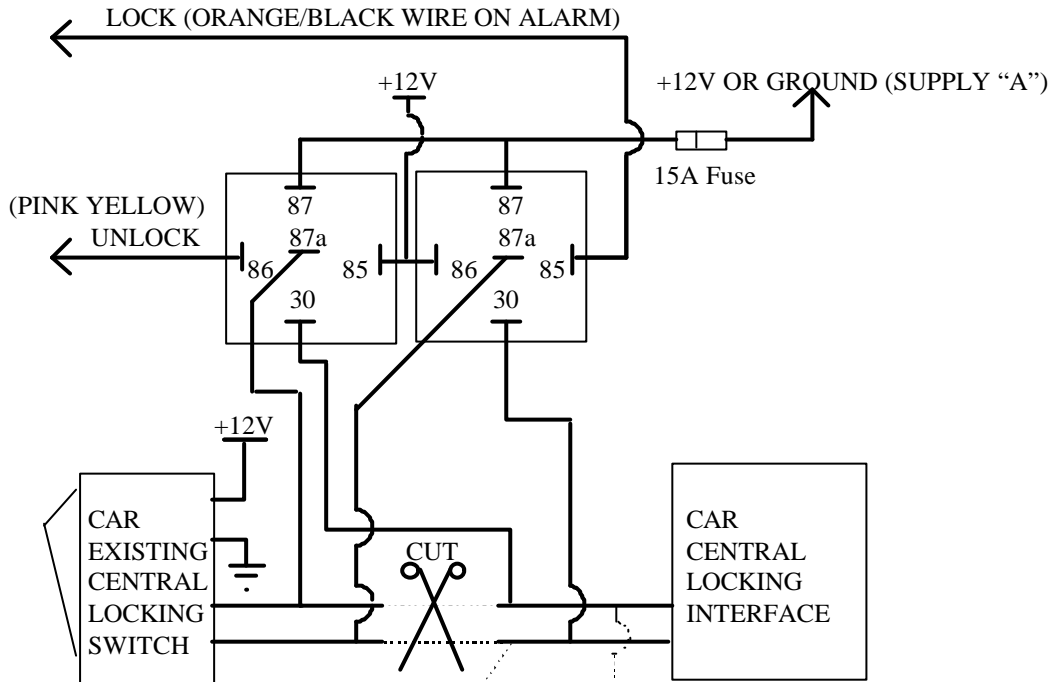


TO INSTALL NEW DOOR LOCK MOTORS

CONNECT OPTIONAL RELAYS AS SHOWN

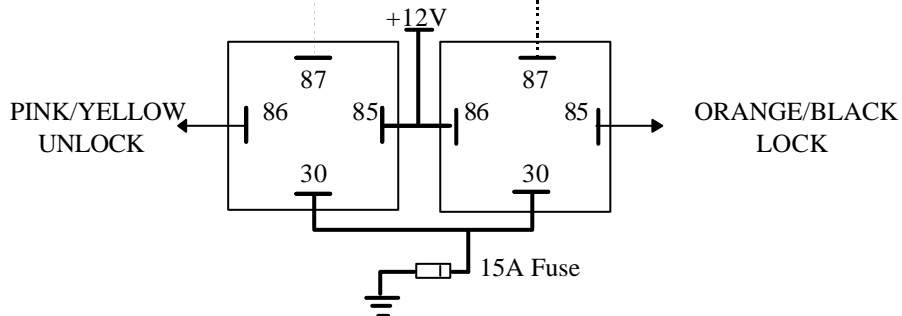


FOR POSITIVE AT REST THEN GOING NEGATIVE “OR” NEGATIVE AT REST THEN GOING POSITIVE PUT 87’S TO +12V & CONNECT OPTIONAL RELAYS AS SHOWN



FOR FLOATING SWITCHES - NEITHER +12V OR GROUND AT REST

Hook up the following extra relays & connect Supply “A” to +12V. Both pairs of lock / unlock wires must be connected.

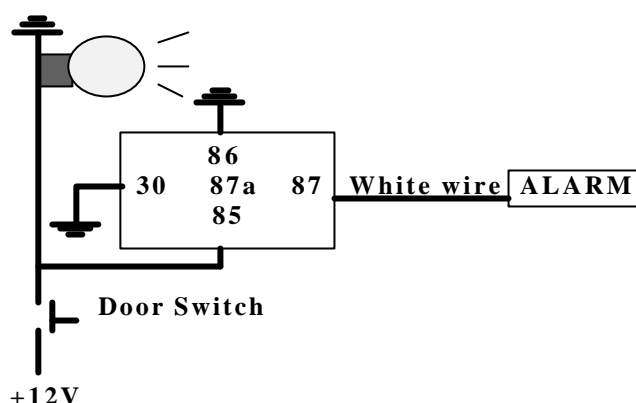
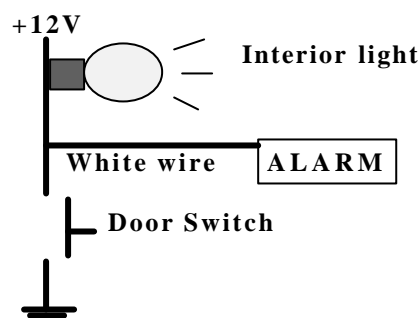


IMPORTANT NOTE FOR INSTALLERS: *Vehicles fitted with negative or positive switching doors.*

In order for the alarm system to function correctly, it is necessary for the doors to be hard wired to the system. Please follow the wiring diagrams below:

NEGATIVE SWITCHING DOORS:

POSITIVE SWITCHING DOORS: Use relay.



RHINO PROGRAMMABLE FEATURES

For Users and Installers

Your Rhino Security system incorporates the latest in high security & convenience features. It is possible to customise your security system so that it suits your requirements perfectly. Detailed below is the full list of programmable features that can either be turned on or turned off.

We have set, at the factory, the most common configuration chosen and these settings are listed in the REGISTER Settings listed below. Once the desired features have been selected, the selection is permanently retained in memory, even if power is removed.

To turn on or turn off any feature use the following procedure: eg to disable passive arming.

1. Find the REGISTER (1, 2 or 3) in which the feature is located. (eg passive arming is located in REGISTER 1).
2. Set the vehicle up as described to access REGISTER 1, (doors closed, bonnet closed, turning the ignition on last).
3. Press the remote control button an equal number of times to the selected feature's **code** number (eg 5 times for passive arming).
4. Turn the ignition to off.
5. The system will then confirm which features are activated via audible readout. If a feature is enabled the siren will chirp out its **code** in beeps from the siren corresponding to the number shown in the column '**Press Remote This Many Times**'. The siren in this example will beep in order Once, then Twice, etc. up to Eight times. The system misses the passive arming code of 5 Beeps as this feature has been disabled. **Please note** that feature 9 is excluded from the confirming number of beeps on all 3 Registers.

How to Change REGISTER 1:

Vehicle Set Up: ALL DOORS CLOSED, BONNET CLOSED, AND THE IGNITION TURNED ON LAST

Remote Key action : TURN ON / OFF FEATURES VIA THE RIGHT BUTTON ON THE REMOTE (OR SINGLE BUTTON)

FEATURE	Press Remote This Many Times	FACTORY SETTING	DESCRIPTION
Arming Beep	1	ON	1 Beep on Arm
Disarm Beep	2	ON	2 Beeps on Disarm
Auxiliary Detection	3	ON	Activate Ultrasonics, Microwave if fitted.
Shock Sensor	4	ON	Activate Two Stage Shock Sensor.
Passive Arm	5	OFF	System arms automatically 60 seconds after exit - the doors will not lock.
Auto Re-arm	6	OFF	If system is disarmed and a door is not opened within 60 seconds, the system will rearm & relock.

Lock Pulse on Alarm Trigger	7	ON	When the alarm is triggered, the doors will be sent a lock pulse. ie the would be thief picks the door lock, the alarm triggers on voltage drop due to the central locking operating, then the doors immediately re-lock to foil the would be thief.
Not Used	8	OFF	Not Used
Shock Sensor Adjustment	9	6 SELECT the level required.	After pressing the remote 9 times to enter this mode, turn the ignition to off. There are 8 levels of adjustment. The factory default setting is level 6. Pressing the remote once will increase the sensitivity by one level ie to level 7. The LED will then flash seven times to confirm the new level. Pressing the remote again will increase the sensitivity to level 8 (max). Pressing the remote again will return the adjustment to level 1 (least sensitive). Once you have adjusted the sensitivity level to the desired setting, turn the ignition on to exit this mode.

How to Change REGISTER 2:

Vehicle Set Up: DRIVER'S DOOR OPEN, BONNET CLOSED, AND THE IGNITION TURNED ON LAST

Remote Key action : TURN ON / OFF FEATURES VIA THE RIGHT BUTTON ON THE REMOTE (OR SINGLE BUTTON)

FEATURE	Press Remote This Many Times	FACTORY SETTING	DESCRIPTION
Second Button Used For Another Vehicle	1	OFF	Allows multiple button remote keys to be divided to act like two separate single button remote keys to control two separate vehicles. Simply "teach" the remote into the other vehicle using the second button as detailed in section "learning new transmitters"
Second Button Used To Arm/Disarm This Vehicle	2	OFF	If this is the "other" vehicle as described above, turn this feature on.
Third Button Used To Arm/Disarm This Vehicle	3	OFF	Contact your Rhino Dealer if this feature is required.
Fourth Button Used To Arm/Disarm This Vehicle	4	OFF	Contact your Rhino Dealer if this feature is required.
Silent Operation	5	OFF	When on, this feature stops the siren from sounding. The alarm will still trigger, flashing the indicators etc. Indication via optional paging system may be desired instead of siren noise.
Valet Mode	6	OFF	When on, this feature allows five engine starts before the system returns to its normal operation ie if you take the vehicle to valet parking, and you normally use passive arming, they will be able to start the car 5 times before passive arming re-engages.
Central Closure	7	OFF	When on, the lock & unlock outputs become a 15 second negative pulse instead of 0.5 seconds. This feature is for certain vehicles with vacuum central locking or those with a central closure wire (some BMW, Mercedes) ie doors lock, electric windows wind up, sunroof closes automatically.

Auto Immobilise	8	OFF	Enables the alarm system to act as an engine immobiliser only. The immobiliser activates 38 seconds after the ignition is turned off. The dash mounted LED will stay on constantly to confirm the system's special status. The vehicle can not be started unless the remote is pressed. If the remote is pressed again, the alarm will arm & lock the doors as per normal operation. Particularly useful feature for tradespeople.
Installer Mode	9	SELECT The Mode Required	<u>After pressing the remote 9 times to enter this mode, turn the ignition to off.</u> This mode allows the installer / owner to verify that each trigger of the alarm system is working, without having to arm & disarm the system each time & set off the siren. The siren will beep and the blinkers will flash to indicate a trigger eg push the bonnet switch, open a door, hit the vehicle. The siren will beep four times to indicate a pre-warning impact sensor detection, or once to indicate full alarm trigger level. <u>Turn the ignition to on to exit this mode.</u>

How to Change REGISTER 3:

Vehicle Set Up: DRIVER'S DOOR OPEN, BONNET OPEN , AND THE IGNITION TURNED ON LAST

Remote Key action : TURN ON / OFF FEATURES VIA THE RIGHT BUTTON ON THE REMOTE (OR SINGLE BUTTON)

FEATURE	Press Remote This Many Times	FACTORY SETTING	DESCRIPTION
Current Sensing Override	1	OFF	If activated, this feature prevents the alarm triggering via sensing a drop in voltage in the vehicle's electrical system. This may be necessary for example where engine thermo fans cut in automatically or there are other accessories active even when the ignition is turned off eg fridges, car phones.
Door Lock on Ignition	2	OFF	When this feature is on, the doors will lock when the ignition is turned to on, and unlock when the ignition is turned to off.
2 Second Exit Delay	3	OFF	When this feature is on, the normal 20 second exit delay is reduced to 2 seconds ie the alarm is fully armed 2 seconds after pressing the remote.
No Door Ajar Warning	4	OFF	<u>When</u> this feature is <u>on</u> , the door ajar warning feature is removed (the siren & indicators will <u>not</u> beep & flash for 3 sec. if a door is not closed properly).
Passive Arm from Ignition Off Only	5	OFF	When this feature is on, the system arms automatically 60 seconds after exit -even though the doors are not closed - the doors will not lock.
Perimeter Night Light	6	OFF	When this feature is on, the indicators will stay on constantly for 20 seconds on disarm, or until the ignition is turned on. This allows for illumination around the vehicle at night.
Instant Boot Release	7	OFF	When this feature is on, the boot release button (left) will only require to be pressed once rather than held down for 3 seconds to open an electric boot.
External Pre-Warn Output	8	OFF	When on, the internal alarm pre-warn is disabled & a two second output from the boot wire is given.
PAT™ Past Alarm Trigger Memory	9	SELECT to replay memory.	<p>After pressing the remote 9 times to enter this mode, turn the ignition off. Your Rhino Alarm offers a unique memory that stores the ten last reasons why the alarm was triggered. This memory cannot be erased.</p> <p>1 Beep, 1 Flash - Voltage Drop Alarm 2 Beep, 2 Flashes - Not Used On This Model 3 Beep, 3 Flashes - Shock Sensor Alarm 4 Beep, 4 Flashes - Power Fail Alarm 5 Beep, 5 Flashes - Ignition Alarm 6 Beep, 6 Flashes - Aux Alarm 7 Beep, 7 Flashes - Door Alarms 8 Beep, 8 Flashes - Bonnet / Boot Alarm</p> <p>If two previous alarms were recorded ie voltage drop and shock sensor the LED will flash and the siren will beep once for voltage drop, then no noise for 1 second then beep three times for shock sensor. The last memory heard is the most recent alarm sector triggered. Turn the ignition to on to exit this mode.</p>