

### INSTALLATION CERTIFICATE

The undersigned qualified installer attests having personally fitted the here described vehicle security system following the manufacturer instructions.

By :

Sold on :

Type of product :  931R12

Vehicle :

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ISO 9001 Certified Company



# 931R12

## INSTALLATION AND USE MANUAL



Made in Italy

Rev. 01 - 10/12

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**1.0 - PRELIMINARY ADVICE**

Dear Customer, the 931R12 is a universal CAN BUS alarm system which can also, with a simple 2 wire hook-up, be used for central door locking (only for vehicles with negative pulse door locks). This system features an integrated radio receiver and comes with a 2-button remote control which can be used as an extra remote to lock/unlock vehicle doors and arm/disarm the alarm system. It does not incorporate an immobilizer.

Please be aware of the following signs, intended for the installer or the user, which indicate particular functions or connections as follows:



**For the user.**  
This sign highlights useful information.



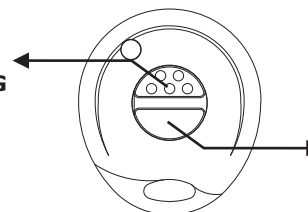
**For the installer.**  
This sign indicates that the system will work according to the connections and the programming selected or it simply provides useful installation tips.

**2.0 - REMOTE CONTROL**



If the required connections are made, the remote control arm/disarm buttons can also lock/unlock the vehicle doors.

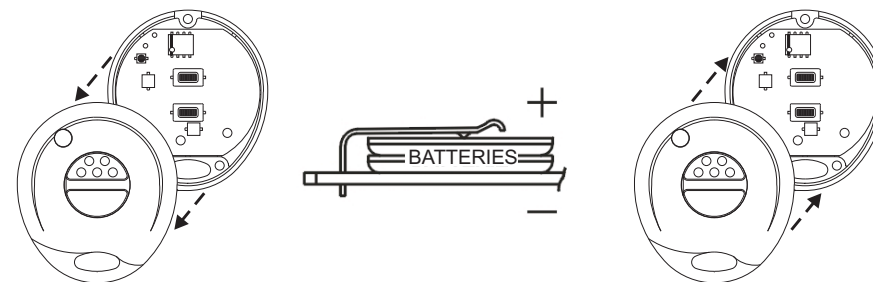
**BUTTON 1:  
COMPLETE SYSTEM ARMING  
(and door lock)**



**BUTTON 2:  
SYSTEM DISARMING  
(and door unlock)**

When the batteries become too weak to operate the remote control, the LED will blink each time the buttons are pressed. Replace batteries as follows:

- Separate the plastic shells of the remote control. Be careful not to damage the internal circuit.
- Remove the discharged batteries.
- Insert the new batteries in their housing, taking care not to invert the polarity.
- Close the plastic shells.
- Try the remote control to make sure it works properly.



Use only CR1616 batteries; different type batteries can seriously damage the remote control. Do not discard used batteries in the environment; they should be disposed of in appropriate containers.

# USER MANUAL

## 3.0 - OPERATING DESCRIPTION

### 3.1 - COMPLETE SYSTEM ARMING

Press the lock button on the vehicle original remote control or press button “1” on the supplied remote control; system arming is confirmed by a siren chirp (if feature status has been configured) and a flash of the turn indicators.

The system has a 30” pre-arming “neutral time” (indicated by the LED turned ON steady).

### 3.2 - PASSIVE ARMING

If this function is configured, the system passively arms about 60” after ignition is switched off and after the last door is opened and closed.

System activation is confirmed by the standard optical/acoustic signals.



Opening a door 60” before the system is armed causes the procedure to interrupt temporarily; it will resume once the door is closed.

### 3.3 - ARMING INHIBIT TIME

System inhibit arming time lasts approximately 30” during which time the LED lights up; it is possible to exit the vehicle without triggering any alarm.

### 3.4 - SYSTEM ARMED

After the inhibit time the system is “armed” and ready to detect any theft attempt. When the system is fully armed, the LED flashes.

### 3.5 - ALARM, INHIBIT TIME BETWEEN ALARMS AND ALARM CYCLES

Any theft attempt will trigger acoustic/optic signals.

At the end of an alarm cycle, before another one starts, there is a 5 sec. “neutral time”.

Every alarm generates a maximum of ten 30” alarm cycles for each input and for each arming.

### 3.6 - SYSTEM DISARMING

Press the unlock button on the vehicle original remote control or press button “2” on the supplied remote control; system disarming is confirmed by 2 siren chirps (if feature status has been configured) and 2 flashes of the turn indicators.

An alarm condition is signalled by 5 acoustic signals (if feature status has been configured) and 5 flashes of the turn indicators.

Next paragraph (3.7) lists the various alarm causes and relative LED signals.

### 3.7 - ALARM MEMORY

If, when disarming, the turn indicators flash 5 times and the alarm system gives 5 audio signals (if feature status has been configured), it means that an alarm condition has occurred while away from your vehicle. The cause of the last alarm can be identified by the LED memory.

Turn ignition key “ON”; the vehicle status LED blinks to indicate the last alarm cause.

The optical signals are repeated 3 times; to interrupt, turn ignition key “OFF”.

The various alarm causes and relative optical signals are detailed in the following table.

LED FLASHES	ALARM CAUSES	ALARM CYCLES
* * ● * *	Ignition attempt (+15/54)	10
* * * ● * * *	Door opening	10
* * * * ● * * * *	Bonnet opening	10
* * * * * ● * * * * *	Boot opening	10
* * * * * * ● * * * * * *	Volumetric or external sensor	10
* * * * * * * ● * * * * * * *	Wireless magnetic contacts and opening detectors	10
* * * * * * * * ● * * * * * * * *	Wireless infrared sensors (PIR)	10
● LED OFF (2 seconds)      LED ON (1 second)		

## 4.0 - NEW PIN-CODE PROGRAMMING

We recommend replacing the default PIN-CODE, factory set as 1-1-1-1, with a custom PIN-CODE. To do so, proceed as indicated in the example below, supposing the PIN CODE is 5-4-6-7.



If, while inserting the PIN-CODE, the LED flashes more than 9 times, the procedure will be interrupted because of an invalid code number.

- With the system disarmed, press and hold the LED button.
- Turn ignition key “ON” and wait at least 3 seconds before releasing the button.
- A flash of the turn indicators and a low pitched signal indicate the system is in program mode; turn ignition key to the “OFF” position.
- After a 3 second pause, the status LED starts with the first sequence of 9 flashes.
- At the 5<sup>th</sup> flash, which corresponds to PIN-CODE 1<sup>st</sup> digit (in this case, 5), press and release the button on the status LED.
- After another 3 second pause, the status LED starts with a new sequence of 9 flashes.
- At the 4<sup>th</sup> flash, PIN-CODE 2<sup>nd</sup> digit (4), press and release the button on the status LED.
- After another 3 second pause, the status LED starts with a new sequence of 9 flashes.
- At the 6<sup>th</sup> flash, PIN-CODE 3<sup>rd</sup> digit (6), press and release the button on the status LED.
- After a 3 second pause, the status LED starts with the last sequence of 9 flashes.
- At the 7<sup>th</sup> flash, PIN-CODE 4<sup>th</sup> and last digit (7), press and release the button on the status LED.
- There will be no audio/visual signals to indicate the end of the procedure.

## 5.0 - EMERGENCY DISARMING BY PIN-CODE

The system can be disarmed by entering the 4-digit emergency PIN-CODE as indicated in the example below.

Please be aware that the default PIN-CODE is factory set as 1-1-1-1.

The example below considers the PIN-CODE previously programmed "5-4-6-7".



If, when disarming with the PIN-CODE, the LED flashes more than 9 times, the procedure will be considered a theft attempt.

- Generate an alarm condition.
- Let the alarm sound for the set period of time (approx. 30 seconds) and wait for the alarm inhibit time between 2 alarms (LED OFF for 5").
- During this lapse of time, press and release the button on the status LED.
- The system is now in the "emergency disarming procedure" and the LED will start flashing.
- At the 5<sup>th</sup> flash, which corresponds to PIN-CODE 1<sup>st</sup> digit (in this case, 5), press and release the button on the status LED.
- After a 3 second pause, the status LED starts a new blink sequence of 9 flashes.
- At the 4<sup>th</sup> flash, PIN-CODE 2<sup>nd</sup> digit (4), press and release the button on the status LED.
- After another 3 second pause, the status LED repeats the blink sequence of 9 flashes.
- At the 6<sup>th</sup> flash, PIN-CODE 3<sup>rd</sup> digit (6), press and release the button on the status LED.
- After a 3 second pause, the status LED gives the last blink sequence of 9 flashes.
- At the 7<sup>th</sup> flash, PIN-CODE 4<sup>th</sup> and last digit (7), press and release the button on the status LED.
- If the code is correct, the system disarms and the end of the procedure is confirmed by visual/acoustic signals.
- If, on the other hand, the code is incorrect, an alarm will be triggered. In this case, repeat the entire procedure.

## 6.0 - WARRANTY CONDITIONS

This product is guaranteed to be free from manufacturing defects for a period of 24 months from the installation date shown on this warranty, in compliance with Directive 1999/44/CE.

Please fill-in entirely the guarantee certificate included in this booklet and do NOT REMOVE the guarantee label from the device.

The warranty will become void if labels are missing or torn, if the installation certificate is not fully compiled or if the enclosed sale document is missing.

The guarantee is valid exclusively at authorized Gemini Technologies S.p.A. Service Centers.

The manufacturer declines any responsibility for eventual malfunctions of the device or any damage to the vehicle electrical system due to improper installation, use or tampering.

This alarm system is solely intended to be a theft-deterrent device.

## 7.0 - WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) DIRECTIVE

The present device does not fall within the scope of Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) as specified in art. 2.1 of L.D. no. 151 of 25/07/2005.

## 8.0 - CONNECTOR TABLES

### 8.1 - 20-WAY CONNECTOR

POSITION	WIRE FUNCTION	WIRE COLOUR
- 1 -	-----	-----
- 2 -	System arming signal	YELLOW-BLUE
- 3 -	System disarming signal	GREEN-BLUE
- 4 -	-----	-----
- 5 -	Door trigger positive/negative input	GREEN-BROWN
- 6 -	-----	-----
- 7 -	-----	-----
- 8 -	LED negative output	BLACK
- 9 -	LED positive output	RED
- 10 -	Ignition	BLACK marked "G"
- 11 -	CAN BUS signal (CAN-H)	LIGHT BLUE-GREY
- 12 -	CAN BUS signal (CAN-L)	LIGHT BLUE
- 13 -	Positive output with system armed (+A)	PINK
- 14 -	External sensors negative input	GREEN-BLACK
- 15 -	Bonnet switch negative input	GREEN
- 16 -	Self-powered siren (lack of negative during alarm) or impulse optic signal	BLUE
- 17 -	Lock (1 sec. negative output pulse if remote control button "1" is pressed)	WHITE-BLACK
- 18 -	Unlock (1 sec. negative output pulse if remote control button "2" is pressed)	YELLOW-BLACK
- 19 -	-----	-----
- 20 -	Input for self-learning and system arming/disarming by turn indicators	WHITE-ORANGE

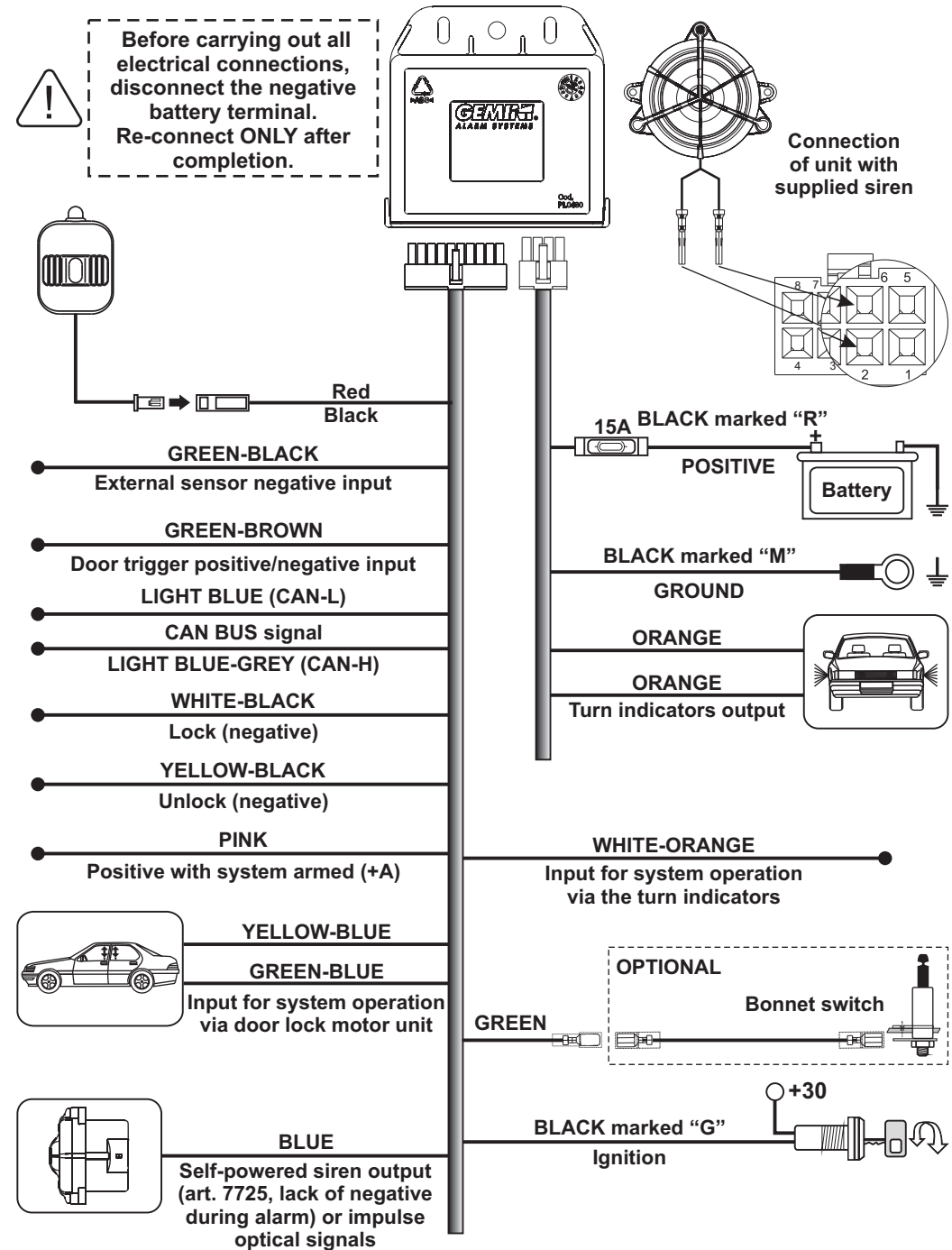


WHITE-ORANGE wires must ALWAYS be connected if system arms/disarms via the turn indicators.

### 8.2 - 8-WAY CONNECTOR

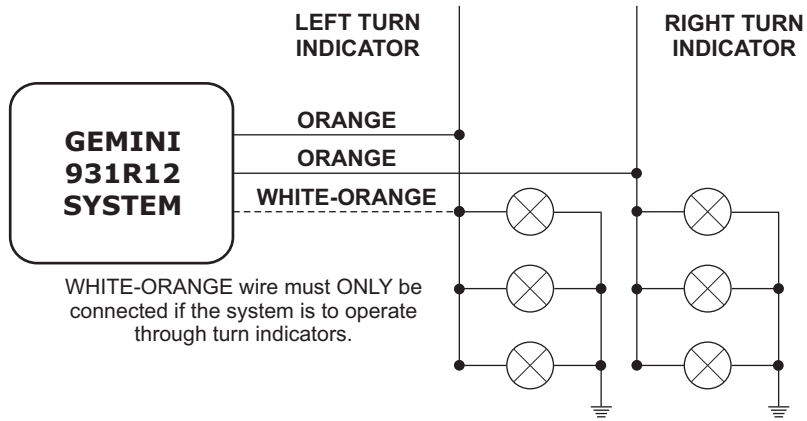
POSITION	WIRE FUNCTION	WIRE COLOUR
- 1 -	Ground	BLACK marked "M"
- 2 -	Siren output	-----
- 3 -	Positive	BLACK marked "R"
- 4 -	Turn indicators positive output	ORANGE
- 5 -	-----	BLACK marked "H"
- 6 -	Siren output	-----
- 7 -	-----	BLACK marked "H"
- 8 -	Turn indicators positive output	ORANGE

## 9.0 - COMPLETE WIRING DIAGRAM

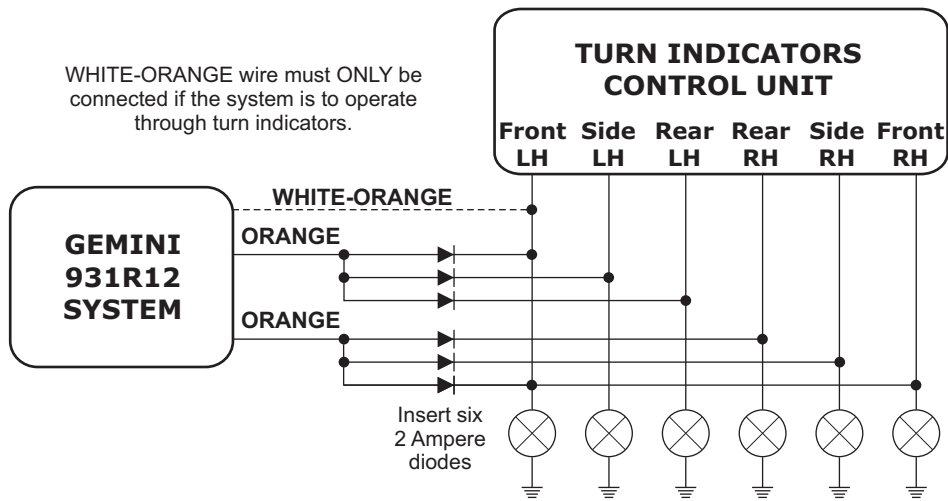


## 10.0 - CONNECTIONS FOR TURN INDICATORS ACTIVATION

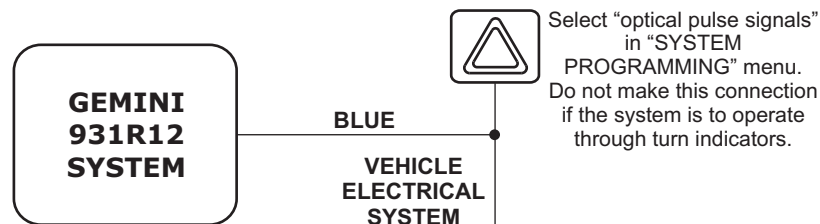
### 10.1 - STANDARD CONNECTIONS



### 10.2 - CONNECTIONS FOR VEHICLES WITH SEPARATE LINES



### 10.3 - CONNECTION TO HAZARD SWITCH



## 11.0 - CONNECTIONS TO ARM/DISARM THE SYSTEM

The 931R12 system can operate in various modes according to the vehicle on which it is installed and connections that can be made.

The alarm system can be managed via the vehicle CAN-BUS line and operate in combination with the turn indicator flashes and/or the door lock motor units. The system automatically manages the different arming/disarming signals.

Refer to the installation specifications for the available connections for each vehicle.

The various arming modes are listed below and the connections indicated in the following paragraphs.

- Arming via CAN-BUS line.
- Arming via door lock motor units.
- Arming via turn indicators flashes.
- Arming via turn indicators flashes and door lock motor unit.
- Arming via turn indicators flashes, door lock motor unit and CAN-BUS line.

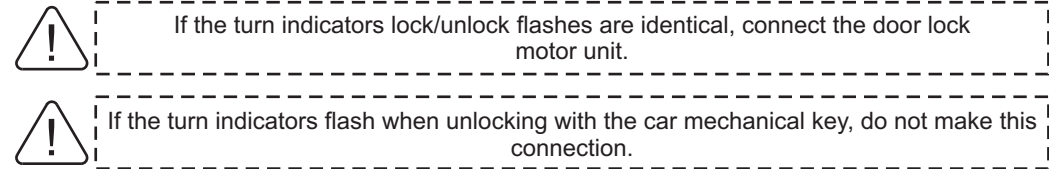
### 11.1 - CONNECTIONS AND MANAGEMENT BY CAN-BUS LINE

System arming/disarming and alarms being managed via CAN-BUS line, only connect the alarm CAN BUS wires to the vehicle CAN line (see available diagrams at: [www.gemini-alarm.com](http://www.gemini-alarm.com)).

### 11.2 - CONNECTIONS TO DOOR LOCK MOTOR UNIT

System arming/disarming connections must be made to the vehicle door lock motor unit (polarity inversion).

### 11.3 - CONNECTIONS TO TURN INDICATORS



To arm/disarm the system, connect the WHITE-ORANGE wire to a wire of the turn indicators.

### 11.4 - "COMBINATION" CONNECTION

This type of connection allows the system to operate via the CAN BUS line with the turn indicators or the door lock motor unit or both.

The system will automatically manage the different lock/unlock signals according to the programming and the connections made.

## 12.0 - VEHICLE CODE PROGRAMMING

If the system is intended to work via CAN-BUS, it must be configured according to the vehicle on which it is installed.

To help you understand the coding procedure, here below is an example illustrating the configuration procedure.

In this case the code used is 1-0-3 which hypothetically corresponds to a "FIAT XXXXX".



A separate leaflet, included in the alarm packaging, lists all the available vehicles (codes are updated at packaging time).  
Up-to-date information on supported vehicle models can be found at: [www.gemini-alarm.com](http://www.gemini-alarm.com) (private area).

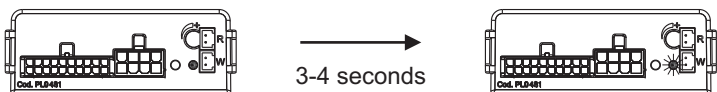


The system has a LED indicator that signals any wrong vehicle code inserted. The code must range between 100 and 235 otherwise the LED on the unit blinks repeatedly and the procedure is interrupted. The previously inserted code remains stored. The procedure is also invalidated if the LED blinks more than 10 times. In this case there is no optical warning, the procedure is simply interrupted. In either case, repeat the whole procedure.

Connect the harness connectors to the alarm connectors.  
Press and hold the button shown below, until the LED lights up.



Release the button, the LED switches off.



After 3/4 seconds, the LED starts a flashing sequence; count the flashes.  
Press the button at the 1st flash, which corresponds to number "1".



After 4 seconds, the LED starts blinking again.

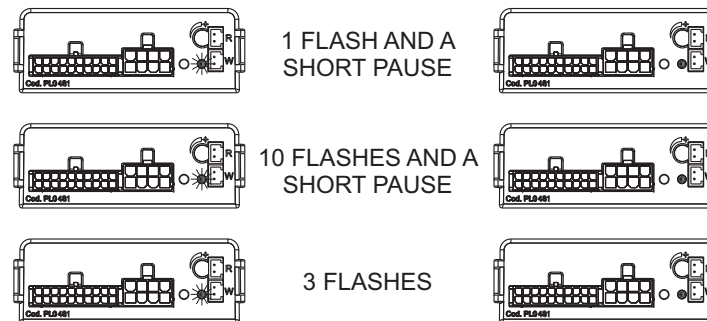
Press the button at the 10th flash which corresponds to number "0".



After another 4 seconds, the LED flashes the third sequence.  
Press the button at the 3rd flash which corresponds to number "3".



When the last digit is entered, the alarm system "repeats" the entered code.



Press the vehicle remote control lock/unlock buttons to make sure the alarm system works properly.

Eventually disconnect the 8-way connector and reconnect it after a few seconds.

## 13.0 - SELF-LEARNING OF TURN INDICATOR FLASHES

In order to arm/disarm via the turn indicators, the system must learn the vehicle lock (arm) and unlock (disarm) signals.

Connect the WHITE-ORANGE wire to the turn indicators and proceed as follows:

- Disconnect the 8-way harness connector from the 8-way alarm connector.
- Turn ignition key "ON".
- Connect the 8-way harness connector to the 8-way alarm connector; the LED turns ON steady.
- Turn ignition key "OFF".
- Close all doors and press the lock button on the original remote control.
- When the turn indicators stop flashing, a high-pitched signal confirms the arming flashes have been learnt.
- Press the unlock button on the original remote control.
- When the turn indicators stop flashing, 2 high-pitched signals confirm the disarming flashes have been learnt.
- This completes the procedure.



To cancel the programming of the turn indicators, reset the system (see chapter 19.0).

## 14.0 - SYSTEM PROGRAMMING

The table below applies to the system programmed in "standard configuration".  
Every time you enter the programming procedure, the alarm resets to the default settings.

FUNCTION	STATUS
Exclusion of arming/disarming optic signals	Disabled
Exclusion of arming/disarming acoustic signals	Enabled
System passive arming	Disabled
Enabling of coded output for self-powered siren	Disabled
Door input - positive	Disabled
Optical pulse signal	Enabled
For Gemini only, turn ignition key	----

A lack of power during electrical system maintenance, will not affect the programming.  
Every turn of the ignition key disables the selected parameter and moves to the next one until the programming procedure is completed.  
The programmable parameters are briefly described here below while the programming instructions are illustrated in the next paragraph.

### 14.1 - OPTIC SIGNALS

This parameter activates optic signals when alarm is armed (1) and disarmed (2).



If the vehicle already has optical lock/unlock signals, the turn indicators alarm flashes should be deactivated.

### 14.2 - ACOUSTIC SIGNALS

This parameter activates acoustic signals when alarm is armed (1) and disarmed (2).

### 14.3 - PASSIVE ARMING

This function arms the system 60" after ignition is switched off and the last door is opened and closed.  
If a door is opened during this lapse of time, the procedure is interrupted and will resume when the door is closed.

### 14.4 - ENABLING OF SIREN (7725) OUTPUT

This parameter enables the relative output (20-way connector, position 13, PINK wire) to activate the self-powered coded siren (art. 7725).

### 14.5 - DOOR SWITCH POLARITY SELECTION

This parameter modifies the alarm input signal (positive or negative) according to the signal generated by the door switch.

### 14.6 - OPTICAL PULSE SIGNAL/SELF-POWERED SIREN

This function activates the optical signals according to the connection made; only for vehicles where hook-up is to the Hazard switch.



Optical flashes activated by connection to the Hazard switch will ONLY turn on during an alarm condition.

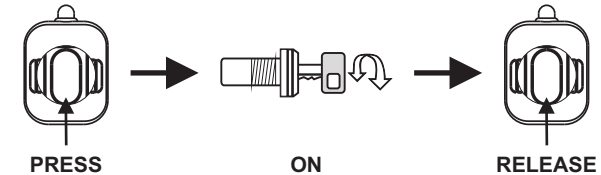
The alarm system BLUE wire MUST be connected to the Hazard switch.  
In this case, do not connect the alarm ORANGE wires (see chapter 10.3).

If the function is disabled, under normal operating conditions, the blue wire carries a negative signal; during an alarm cycle, there is a lack of negative.

## 15.0 - SYSTEM PROGRAMMING EXAMPLE

Here below is an example that illustrates the steps to follow to modify the programmable functions.  
As mentioned before, every key rotation disables the functions, while the LED button enables them.  
When ignition is turned OFF-ON or the LED button is pressed, a high or low tone signal sounds.

With the alarm disarmed, press the button on the status LED, turn ignition key "ON" and release the button within 2 seconds.



Two acoustic signals (a high and a low-pitched sound) and two flashes of the turn indicators confirm that the system is in program mode.



Turn ignition "OFF" and then back "ON" to disable the function.  
A low-pitched acoustic signal confirms the operation.



OR



Press the button on the LED once to activate the function.  
A high-pitched acoustic signal confirms the operation.



In both cases, system moves on to the next function.

Repeat steps above to enable or disable the other functions.

When the last function is configured (either with the LED push-button or the ignition key), in addition to the confirmation tone, the system gives 2 low-pitched and 1 high-pitched acoustic signals and the turn indicators flash twice.

These last two signals indicate the end of the programming procedure.



## 16.0 - ADDING NEW DEVICES



To carry out the operation successfully, make sure the required electrical connections (bonnet switch and ignition) are complete.



Radio devices can only be learned by 93XR systems.

Storing memory is for 55 devices.

If an extra device is added, it automatically deletes the first device stored in the alarm memory.

To activate the procedure proceed as follows:

- With the system disarmed, open the bonnet and leave it open.



The following operations must be carried out within 4 seconds otherwise the procedure is invalidated.

- Turn ignition key "ON-OFF" - "ON-OFF" - "ON-OFF" - "ON".
- At the 4th rotation, leave it "ON".
- To confirm it has entered in the learn mode, the system gives 2 acoustic signals (one high and one low-pitched), the turn indicators flash once and the LED turns ON.



Do not modify bonnet position otherwise all devices, previously saved, will be deleted as described in the next paragraph.

- The system is ready to receive the device codes.
- According to the device to be stored in memory either press button "1" on the remote control, make the magnetic contact transmit (bring contact and magnet close together and then move apart), press the button on the opening detector or make the infrared sensor transmit (see sensor instructions).
- Every time a device is learned, there is a high-pitched signal and the status LED turns OFF briefly to confirm the procedure.
- Repeat this procedure to program other devices.
- Turn ignition key "OFF".
- The end of the procedure is confirmed by a low-pitched audio signal, a flash of the turn indicators and the status LED turns OFF.

## 17.0 - DELETING STORED DEVICES



To carry out the operation successfully, make sure the required electrical connections (bonnet switch and ignition) are complete.

All devices previously learned such as remote controls, magnetic contacts, opening detectors or infrared sensors, can be deleted.

To clear memory proceed as follows:

- With the system disarmed, open the bonnet and leave it open.



The following operations must be carried out within 4 seconds otherwise the procedure is invalidated.

- Turn ignition key "ON-OFF" - "ON-OFF" - "ON-OFF" - "ON".
- After the 4th rotation, leave it "ON".
- To confirm it has entered in delete mode, the system gives 2 acoustic signals (one high and one low-pitched), the turn indicators flash once and the LED turns ON.
- Close the bonnet.
- To clear the memory, leave the bonnet closed for at least 8 seconds.



The bonnet must be kept closed for at least 8 seconds otherwise the devices will not be deleted.

- The status LED turns OFF when the devices are deleted.
- Turn ignition key "OFF".
- A long low-pitched acoustic signal will confirm the end of the procedure.

## 18.0 - ULTRASONIC VOLUMETRIC PROTECTION

### 18.1 - CONNECTION AND POSITIONING

Insert the WHITE connector in the "W" marked socket.

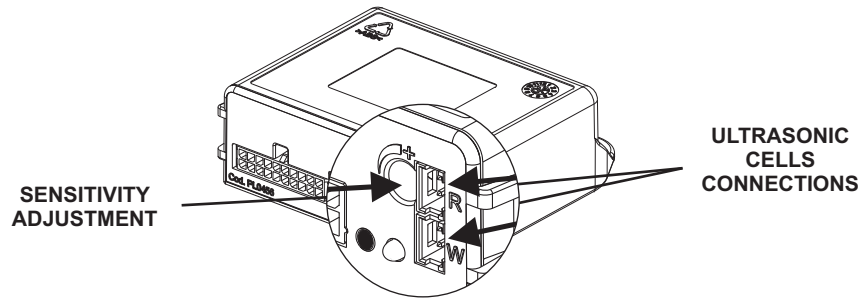
Insert the RED connector in the "R" marked socket (see figure below).

Install the transducers for the ultrasonic sensors on the top part of the windshield internal pillars, away from the air vents and orient them towards the center of the rear window.

### 18.2 - SENSOR ADJUSTMENT

To check sensitivity level proceed as follows:

- With the alarm system disarmed, roll down the front window about 20 cm.
- Adjust trimmer at a medium setting.
- Close all doors, bonnet and boot and arm the system.
- During the alarm inhibit arming time introduce an object in the cabin through the window and move it around; the status LED will turn off to signal a presence.
- If sensitivity level is too high or too low, readjust the trimmer and repeat the above procedure.



## 19.0 - SYSTEM RESET

By activating the following procedure, the system returns to the factory default setting.

This procedure must therefore only be carried out in case of need, before programming the system, learning the turn indicators flashes or before programming the new PIN-CODE.

To reset the system proceed as follows:

- Disconnect the alarm power supply.
- Short-circuit the RED and BLACK wires of the 2-way LED connector.
- Connect the alarm: 4 acoustic signals and 4 flashes of the turn indicators will confirm the alarm is powered.
- Remove the previously created short-circuit; the status LED lights up steady.
- Turn ignition key "ON"; reset is confirmed by an acoustic signal and the wailing of the siren for approx. 3 seconds.
- Turn ignition key "OFF"; the LED turns off without any audio signals.

## 20.0 - TECHNICAL SPECIFICATIONS

Power supply	12 Vdc
Current absorption @ 12Vdc with system armed and LED flashing	15 mA
Working temperature range	-30°C to +70°C
Turn indicators relay contact capacity	8 A at 20°C
Alarm cycle duration	30 sec.
Maximum positive current output when armed (+A)	700 mA
Maximum load on siren output	1 A