



4600 CAN/PLIP

INSTALLATION MANUAL



Summary

1. KIT CONTENTS	3
2. INTRODUCTION & INSTALLATION METHODOLOGY (how to access to the vehicle specific technical documents, Data Linker tool, Antares software, how to define the installation solution).....	3
3. SYSTEM'S CONFIGURATION.....	4
4. HOW TO PREPARE PIN CODE CARD	5
5. INSTALLATION PROCEDURE (system's component locations, electrical connections).....	5
6. ACTIVE FUNCTIONALITIES (descriptions)	8
- ELECTRIC DIAGRAMS	
7. PROGRAMMABLE FUNCTIONS (see the “Functions programming tables” manual)	17
8. HOW TO PROGRAM FUNCTIONALITIES, COBRA REMOTE CONTROLS AND DRIVER CARDS SELF LEARNING PROCEDURE (see ‘PAGE 1’ and ‘PAGE 2’ of the “Functions programming tables” manual)	17
9. FUNCTIONAL TEST.....	18
10. CAN INDEX MANUAL SELECTION.....	18
11. SELF LEARNING PROCEDURE REQUIRED TO REPLACE THE MAIN UNIT OR THE WIRELESS SIREN REPLACEMENT.....	18
12. DOCUMENTS HANDOVER.....	19
13. TECHNICAL FEATURES	19
14. UK MARKET.....	19

1. - KIT CONTENTS.

The following are the main parts supplied in the kit:

- Main alarm unit.
- Remote controls and/or Driver Card (optional).
- Wireless back-up battery siren or wired siren, loudspeaker.
- Main unit universal wiring harness.
- Siren wiring harness.
- Siren bracket.
- Ultrasonic sensors.
- Installation accessories.
- LED / control button.
- Quick reference user manual.
- Pin Code card.

2. - INTRODUCTION.

The main unit of this system is equipped with an on board CAN interface (Controller Area Network) that allows the data reading from the vehicle CAN network. It can also be installed configured as PLIP, with this solution the unit is not connected to the CAN network, but to the central door locking motors, to the door locking switches and/or to the direction lights.

It can be armed/disarmed by the vehicle original remote control, with the Cobra one or with the Driver Card (optional).

This manual contains all information required to fit the system on 12V battery vehicles with the negative pole connected to the vehicle body.

HOW TO ACCESS TO THE VEHICLE SPECIFIC TECHNICAL DOCUMENTS, DATA LINKER TOOL, ANTARES SOFTWARE.

Access to the web site www.cobra-at.com > **Installer area** and register yourself to be allowed to download the technical documentation.

Data Linker programming tool and the software "Antares" are required to customize the product for the destination vehicle. Data Linker is composed by a USB interface module, a 12V DC power supply, a CD containing the software "Antares" and the required instructions. Product specific wiring harness are also supplied to connect the USB module to the product main unit. Antares allows to configure/customize and to program the CAN/PLIP software for the destination vehicle using your computer.

HOW TO DEFINE THE INSTALLATION SOLUTION.

Access to the web site www.cobra-at.com > **Login** > **user ID** > **password** > **access** > **professional area** and, clicking on the menu, supply all the requested destination vehicle information (in the example a VW Polo, year 2011) as the information of the product to install, in this case the 4600 range.

VEHICLE TYPE.

Auto - Car

PRODUCT TYPE.

Antifurti auto - Car alarms

BRAND LIST.

Volkswagen

MODEL LIST.

Polo

The list on the right side of the screen shows the product families. Clicking on the link you will get the full application list available for the destination vehicle for the product family selected. Check at first if there is a CAN application available, it offers the best compromise among functionalities offered/fitting time.

If no one CAN product installation proposal is available, make the same research clicking on "**PLIP alarm**" range AK4600 – 4400 Plip.

If there is an installation solution clicking on the vehicle model you can download the vehicle specific installation sheet.

If no one CAN and no one Plip installation proposal is available, choose again the vehicle type then, as "**Product type**" select "**Application manuals**". The list on the right side of the screen shows the application manuals available, click on "Application manuals" to get the application manual list, then download the installation manual of the 4600 for the Plip configuration.

3. - SYSTEM'S CONFIGURATION.

Be sure to have connected all Data Linker components and to have power supplied the system.

Run Antares.

As soon as Antares is starting, it automatically checks - if the computer is connected to internet - if the installed version is the most updated one and, if not, it proposes its update.

We recommend to download all times the last update.

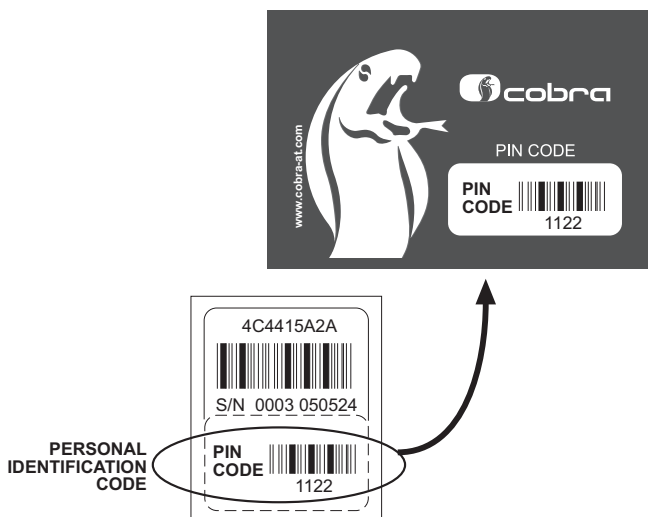
Proceed as follow:

- A. Select the language.
- B. Select "alarm and modules".
- C. Select product "4600 " as "1 wire" or "2 wire".
- D. Select the procedure "firmware update".
- E. Click on "proceed".
- F. Select the vehicle brand.
- G. Select the vehicle model.
- H. Select the vehicle model year.
- I. Click on "proceed".
- L. Confirm and continue.
- M. Wait until the programming confirmation window appears.

Additional software installation and tool usage details are available on the specific manual supplied in the Data Linker kit or in the Cobra web site, professional area, Application manuals.

4. - HOW TO PREPARE THE PIN CODE CARD.

Remove the separate PIN Code label from the back of the system main unit and place onto the supplied PIN Code Card.



5. - INSTALLATION PROCEDURE.

System's component positioning.

As much as the components of the system will be placed in secure and difficult to access positions as higher the protection level will be.

WARNING: each element must be positioned so that it does not interfere with moving parts.

Alarm unit.

It must be fitted inside the vehicle far away from heating sources, paying attention to keep the main connector oriented down.

Siren.

It can be installed in the engine bay as inside the vehicle far away from heating sources paying attention to keep the main connector oriented down.

Ultrasonic volumetric sensor.

The ultrasonic transducers must be fixed to the top of the A pillars pointed towards the rear window or to the top of the C pillars pointed towards the windscreen. Their orientation should be as much as possible parallel to the side windows.

Emergency LED/control button

It must be fitted on the dashboard with its LED in a in sight position. The pushbutton should be easily accessible by the driver.

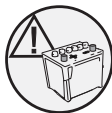
Bonnet pushbutton.

The installation of the supplied pushbutton is required if the vehicle is not yet equipped with the original one. The specific vehicle CAN/PLIP installation sheet supplies this info.

Antennas.

The RF antennas positioning (for both the main unit and the siren) is crucial for a proper system's performance. They must not be cut, wrapped, connected to any other cables or to the vehicle body and they must be kept separate from the main wiring harness and as far as possible from metallic parts.

Electrical connections.



WARNING: to prevent damage to the vehicle electrical system during installation, we recommend to disconnect the battery negative cable and to reconnect it only after installation is completed. If the battery is not disconnected, to avoid the possible generation of errors by the original central units of the vehicle, it is necessary to pay attention during the connections and the use of the installation tools.

Pay attention when joining two or more wires. Avoid to make "quick connections" that do not ensure a good quality. Also make sure that the wires of the Cobra 4600 are routed so that they follow the original wiring of the vehicle to which they should be joined with the raps.

The addition of fuse is required as specified in the main connection diagram.

26 ways connector J pin-out for CAN configurations	
J-1 and J-2 Engine crank inhibition:	to get the maximum security level to the system connect the two wires as shown in the electrical diagrams to prevent the engine starter running. During the cranking phase, measure the value of the current in the circuit that has been interrupt, to make sure that it does not exceed the technical specifications of the product. Install an additional relay if required.
J-3 Logic blinker output:	make the connection if required by the specific vehicle CAN installation sheet.
J-4 Power blinker output:	make the connection if required by the specific vehicle CAN installation sheet.
J-5 Logic blinker feedback input or power blinker output:	make the connection if required by the specific vehicle CAN installation sheet.
J-6 Analogic input:	to be connected to a vehicle device (ex. passenger compartment fan heater) to reduce the US sensitivity (step 7.12) or to be connected to a push-button for the driver recognition (step 7.22). If the wire connection of this input is required in the CAN application, it can not be used for the functions as in step 7.12 and 7.22.
J-7 Analogic input:	make the connection if required by the specific vehicle CAN installation sheet.
J-8 Cobra bus:	communication line for the connection of compatible Cobra sirens and sensors.
J-9 and J-10 CAN H/L:	to connect as shown in the specific vehicle CAN installation sheet.
J-11 Pager negative output:	low power control signal for triggering a pager device or a telematic one. Active low during alarm time.
J-12 CDL unlock negative output:	low power control signal to unlock central door locking. Activated by the Cobra remote control (optional) - (see electrical diagram F).
J-13 Analogic input:	make the connection if required by the specific vehicle CAN installation sheet.
J-14 12V connection (+30):	the positive supply must be connected to a vehicle positive connection point upstream of the fuse box. Fit a 15A fuse as close as possible to the connection point.
J-15 GND connection:	the ground must be connected to a factory earth point or directly to the negative pole of the battery.
J-16 Negative output for modules:	active when the system is armed. To be used for the connection of compatible Cobra modules.
J-17 Horn/loudspeaker negative output:	to program in line with the connected device. See electric diagrams and functionalities programming tables. The output set automatically as per selected device, for horn choose also fix or intermittent.
J-18 +15/54 connection:	if the signal is not detected from the CAN network , connect this input to the ignition key on, checking that the wire is permanently fed during the cranking phase and while the engine is running. Fit a 3A fuse as close as possible to the vehicle connection point.
J-19 Analogic input:	make the connection if required by the specific vehicle CAN installation sheet.
J-20 Analogic input:	make the connection if required by the specific vehicle CAN installation sheet.
J-21 Negative input to enter in programming procedure/to connect bonnet pushbutton:	if connected to ground the system will enter in the programming procedure for all applications not able to detect the original bonnet pushbutton. If the siren is a wireless one this input must not be used for the bonnet pushbutton connections. For wired siren or loudspeaker this input must be used for the connection of the bonnet pushbutton as indicated in the specific vehicle CAN installation sheet.

J-22 Analogic input: make the connection if required by the specific vehicle CAN installation sheet.
J-23 Negative input for additional modules: to be used as a triggering input for the connection of compatible Cobra modules.
J-24 Analogic output: to be used for the function described in step 7.17 or 7.20.
J-25 CDL lock negative output: low power control signal to lock central door locking. Activated by the Cobra remote control (optional) - (see electrical diagram F).
J-26 Analogic input: make the connection if required by the specific vehicle CAN installation sheet.

26 ways connector J pin-out for PLIP configurations

J-1 and J-2 Engine crank inhibition: to get the maximum security level to the system connect the two wires as shown in the electrical diagrams to prevent the engine starter running. During the cranking phase, measure the value of the current in the circuit that has been interrupt, to make sure that it does not exceed the technical specifications of the product. Install an additional relay if required.
J-3 Logic blinker output: make the connection if required by the specific vehicle PLIP installation sheet.
J-4 Power blinker output: make the connection if required by the specific vehicle PLIP installation sheet.
J-5 Logic blinker feedback input or power blinker output: make the connection if required by the specific vehicle PLIP installation sheet.
J-6 Blinker inhibition positive input: to connect as indicated in the specific vehicle PLIP installation sheet or in the product installation guide for PLIP applications available on the web under Application manuals.
J-7 Negative input for CDL opening switch signal: to connect as indicated in the specific vehicle PLIP installation sheet or in the product installation guide for PLIP applications available on the web under Application manuals.
J-8 Cobra BUS: communication line for the connection of compatible Cobra sirens and sensors.
J-9 and J-10 Do not connect.
J-11 Pager negative output: low power control signal for triggering a pager device or a telematic one. Active low during alarm time.
J-12 CDL unlock negative output: low power control signal to unlock central door locking. Activated by the Cobra remote control (optional) - (see electrical diagram F).
J-13 Positive input for CDL motor opening signal: to connect as indicated in the specific vehicle PLIP installation sheet or in the product installation guide for PLIP applications available on the web under Application manuals.
J-14 12V connection (+30): the positive supply must be connected to a vehicle positive connection point upstream of the fuse box. Fit a 15A fuse as close as possible to the connection point.
J-15 GND connection: the ground must be connected to a factory earth point or directly to the negative pole of the battery.
J-16 Negative output for modules: active when the system is armed. To be used for the connection of compatible Cobra modules.
J-17 Horn/loudspeaker negative output: to program in line with the connected device. See electric diagrams and functionalities programming tables. The output set automatically as per selected device, for horn choose also fix or intermittent.
J-18 +15/54 connection: to be connected to a ignition key ON positive signal. The positive signal must be feeded while starting the vehicle and when the engine is ON.
J-19 Negative input for CDL closing switch signal: to connect as indicated in the specific vehicle PLIP installation sheet or in the product installation guide for PLIP applications available on the web under Application manuals.
J-20 Positive perimetric input: to be connected to the vehicle roof lamp. The input is 7 s delayed after the system arming.
J-21 Negative input to enter in programming procedure/to connect bonnet pushbutton: if connected to ground the system will enter in the programming procedure for all applications not able to detect the original bonnet pushbutton. If the siren is a wireless one this input must not be used for the bonnet pushbutton connections. For wired siren or loudspeaker this input must be used for the connection of the bonnet pushbutton as indicated in the specific vehicle PLIP installation sheet.

J-22 Positive perimetric input: to be connected to the vehicle roof lamp. The input is 7 s delayed after the system arming.
J-23 Negative input for additional modules: to be used as a triggering input for the connection of compatible Cobra modules.
J-24 Analogic output: to be used for the function described in step 7.17 or 7.20.
J-25 CDL lock negative output: low power control signal to lock central door locking. Activated by the Cobra remote control (optional) - (see electrical diagram F).
J-26 Positive input for CDL motor closing signal: to connect as indicated in the specific vehicle PLIP installation sheet or in the product installation guide for PLIP applications available on the web under Application manuals.

MAKE CONNECTIONS AS FOR ELECTRIC DIAGRAMS

6. - ACTIVE FUNCTIONALITIES.

6.1 - Interior protection with ultrasonic volumetric sensor.

The system protects the vehicle interior with a volumetric ultrasonic sensor. Any attempt to get into the vehicle will be detected and the alarm will trigger.

6.2 - Perimetric protection with door open warning diagnostic.

The alarm will trigger by opening any door, boot and bonnet. Should you have left any door opened while arming, the system will signal it by 3 flashes of the direction lights and 3 audible signals (5 audible signals if the arming/disarming audible signals function has been activated).

6.3 - Cable cutting protection (only for systems with back-up battery siren).

The alarm will trigger if the system is not power supplied (cutting of cables - battery disconnection) signalling the sabotage.

6.4 - Engine crank inhibition.

As soon as the system is armed the engine cranking is not possible anymore.

6.5 - Arming the system with the volumetric ultrasonic protection disabled.

This function allows to arm the system leaving temporarily disconnected the interior volumetric protection. The protection must be disabled any time you leave somebody or an animal in the vehicle. If you want to leave any window opened also disable the protection to avoid false alarms. All other protections remain active.

To disable the volumetric protection proceed as follow:

switch the engine off being sure that the ignition switch has been turned to the OFF position. Within 5 s press the emergency panel pushbutton and keep it pressed until it will flash once to confirm only the volumetric protection has been disabled. By keeping the pushbutton pressed the system will confirm with two flashes that only the additional sensor input has been disabled, with three flashes for both of them disabled. The selected protection will remain disabled until the system will be disarmed. It will be automatically restored at the next arming.

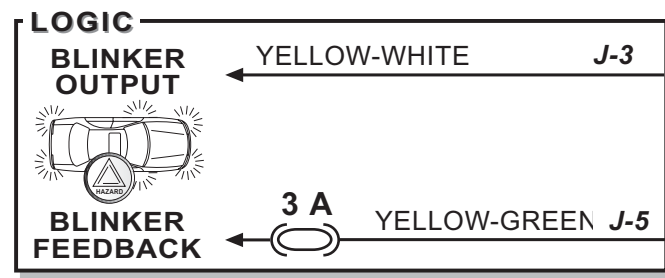
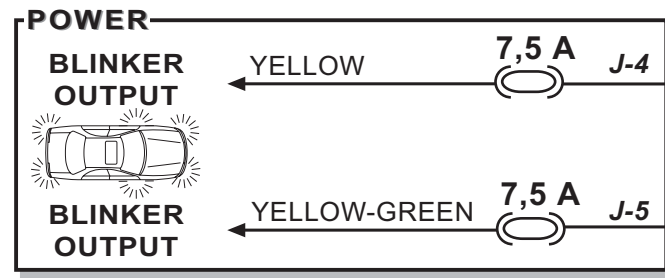
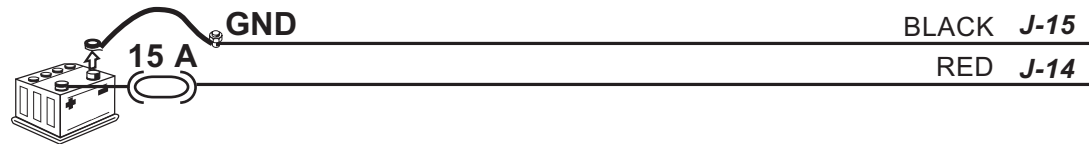
Note: on some vehicles the system automatically disables the volumetric protection if any windows is left opened.

6.6 - Emergency panel LED.

The LED main scope is to show the system arming and disarming conditions. When the system is armed the LED gets ON and remains illuminated until the 25 s arming period has elapsed. After that it starts blinking. It goes OFF as soon as the system is disarmed.



THE FUSES IN THE DIAGRAM ARE NOT SUPPLIED



See diagram 'F'



VIOLET J25
ORANGE J12

J8 YELLOW-BLUE

J1 GREEN

J2 GREEN

J17 WHITE

J11 ORANGE-WHITE

J16 BROWN

J23 GREY

J24 VIOLET-WHITE

J6 PINK-WHITE

J20 PINK-BLACK

J22 BLUE-PINK

J19 ORANGE-BLACK

J7 VIOLET-BLACK

J26 YELLOW-BLACK

J13 GREY-BLACK

J18 GREEN-RED

See diagram "H"



COBRA BUS

STARTER +50



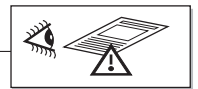
max 20A (1 sec.)
6A cont.

SIREN HORN OUTPUT

PAGER OUTPUT

**NEGATIVE OUTPUT
ARMED SYSTEM**

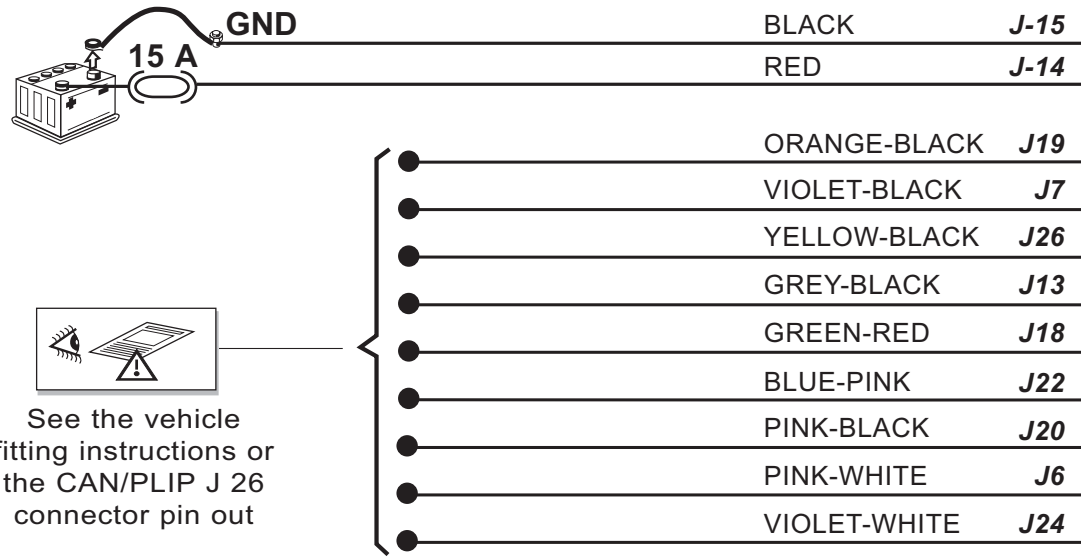
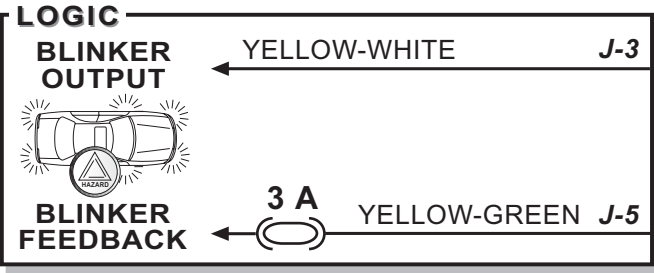
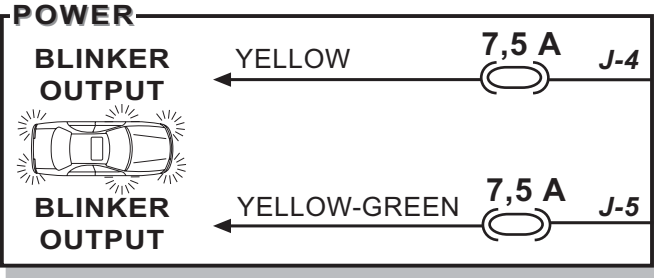
SENSORS INPUT



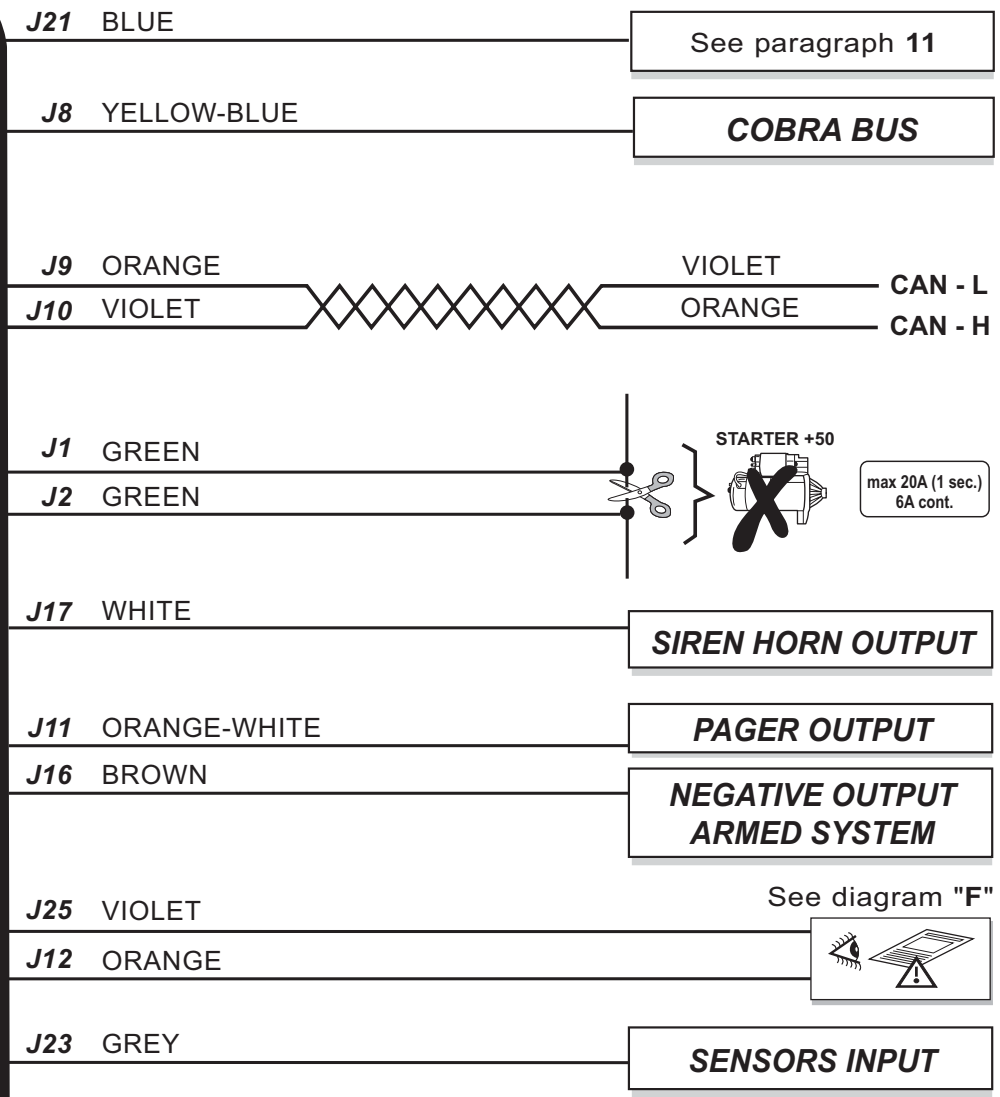
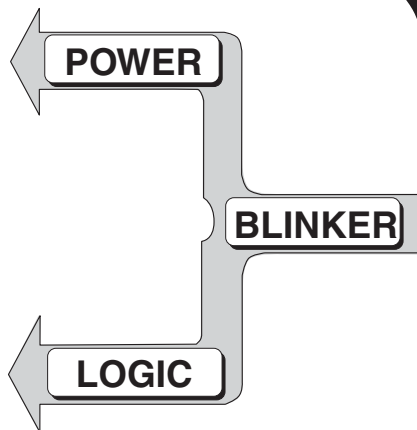
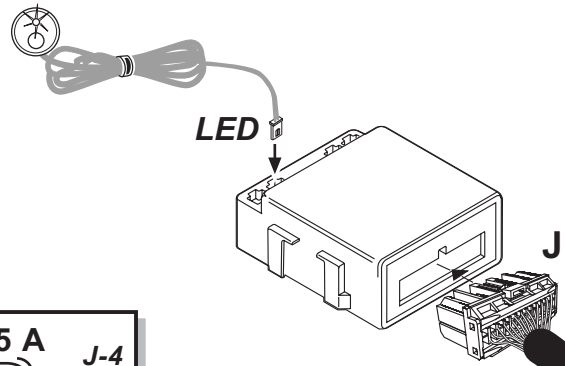
See the vehicle
fitting instructions or
the CAN/PLIP J 26
connector pin out



THE FUSES IN THE DIAGRAM ARE NOT SUPPLIED

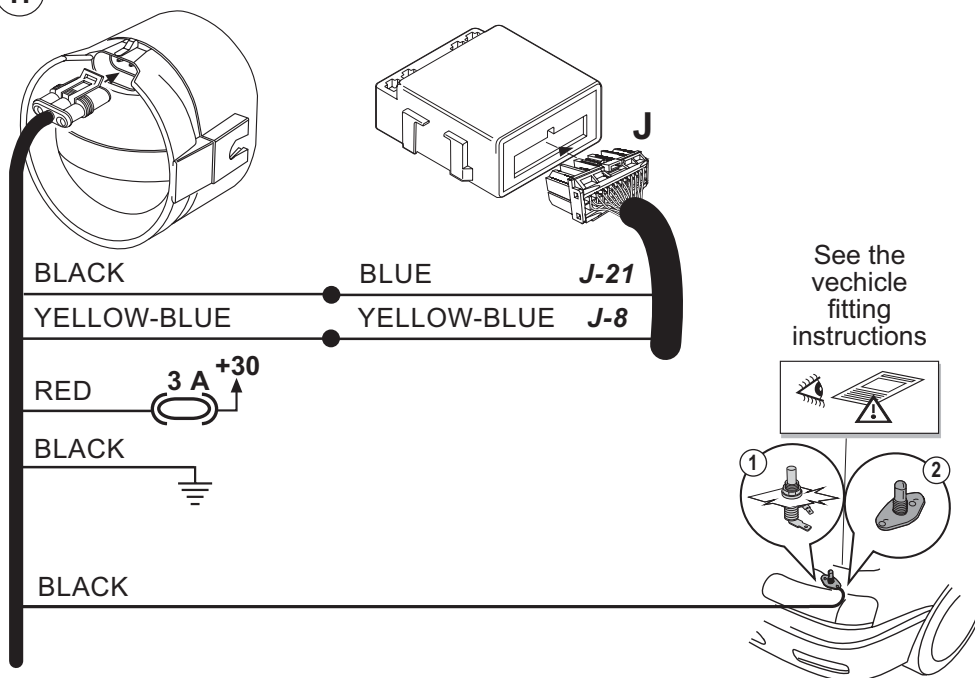


See the vehicle fitting instructions or the CAN/PLIP J 26 connector pin out

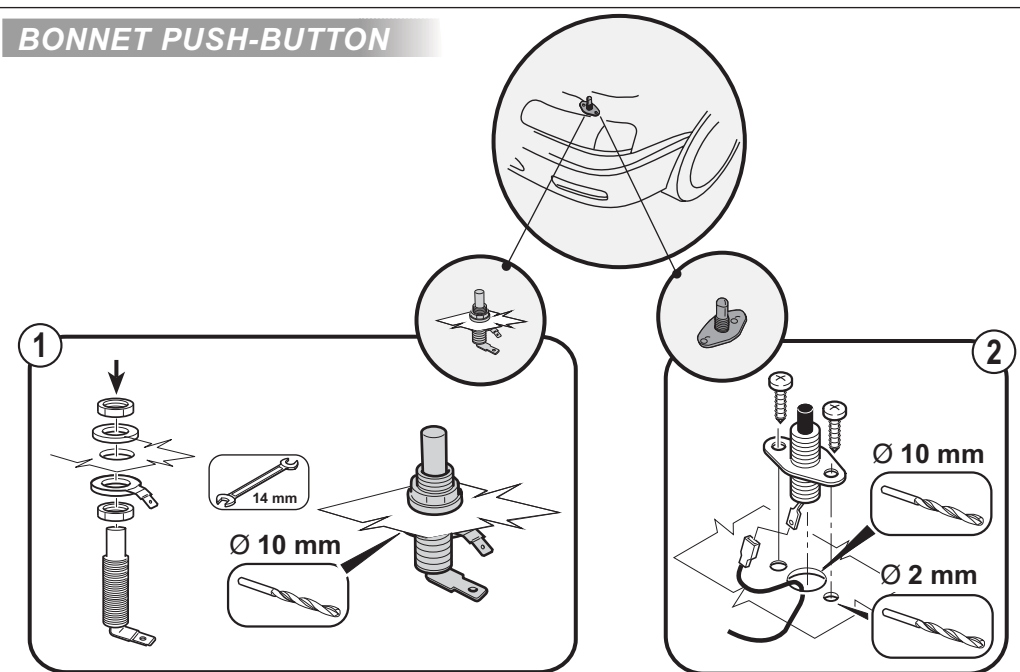


H

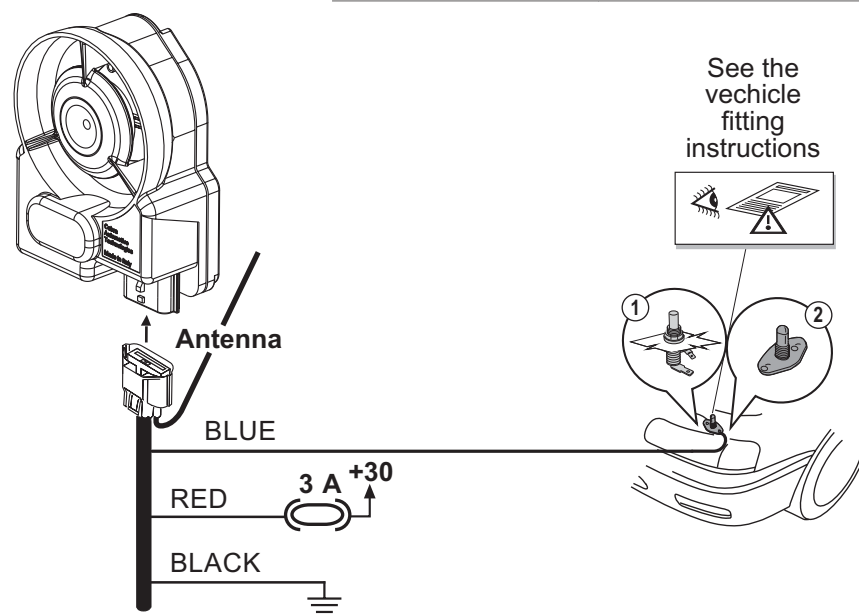
NO WIRELESS SIREN CONNECTIONS



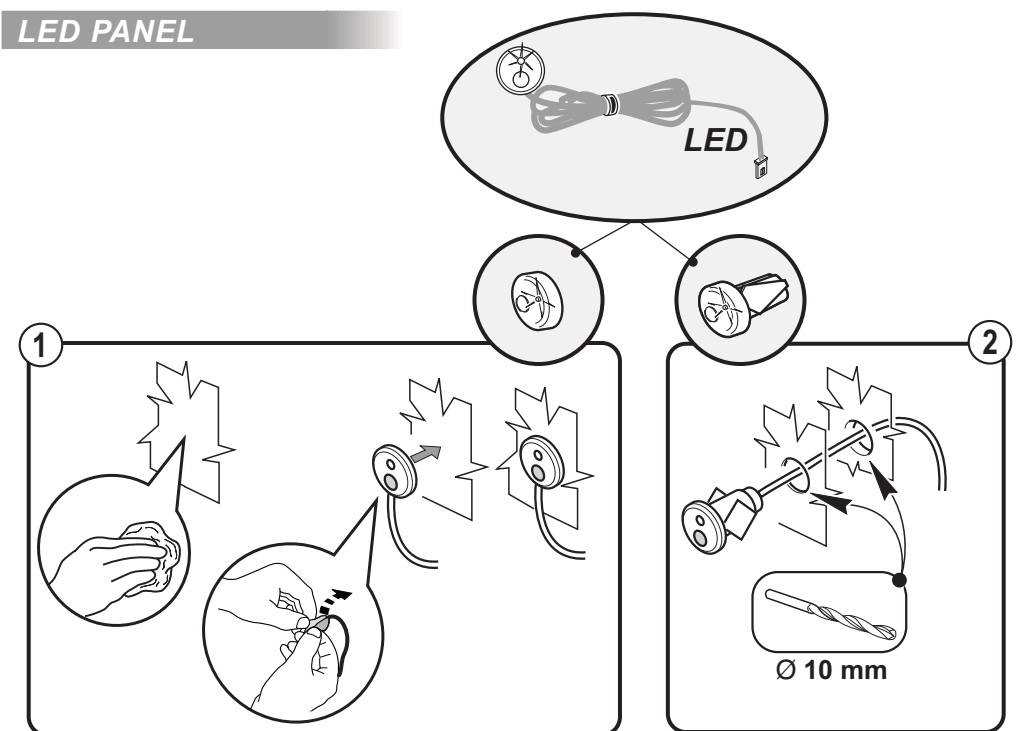
BONNET PUSH-BUTTON

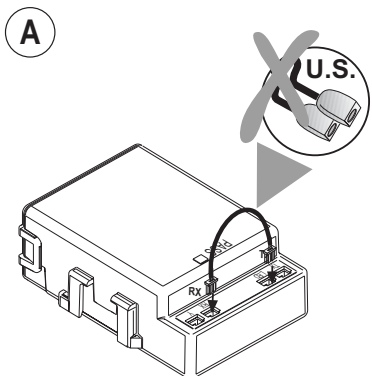


WIRELESS SIREN CONNECTIONS

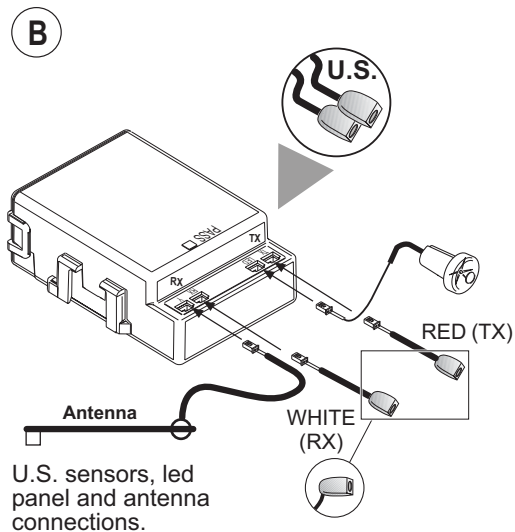


LED PANEL

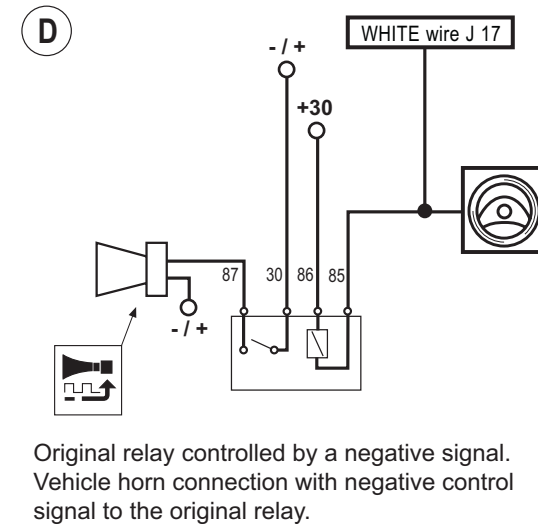
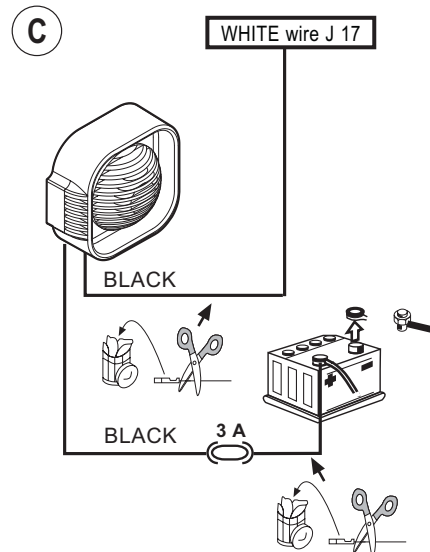




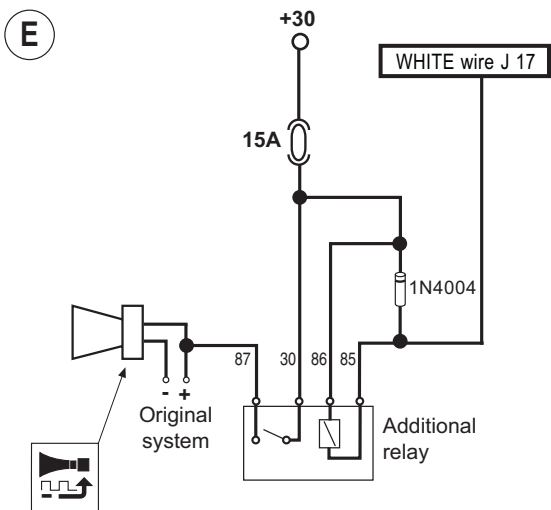
Install the jumper wire (see the catalogue) between the Ultrasound TX and RX, if you don't use the volumetric sensor.



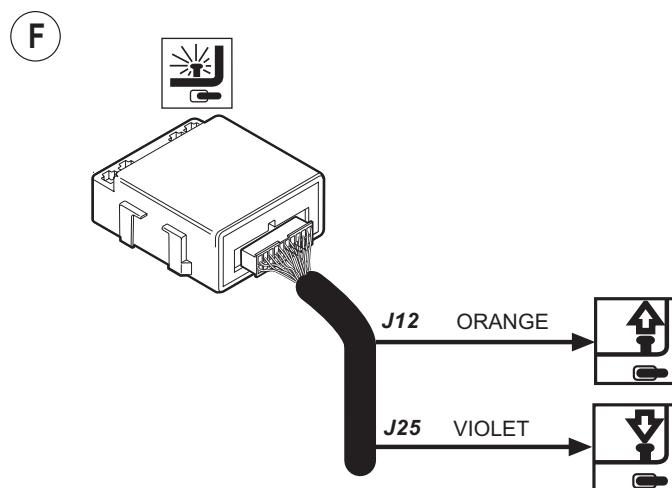
U.S. sensors, led panel and antenna connections.



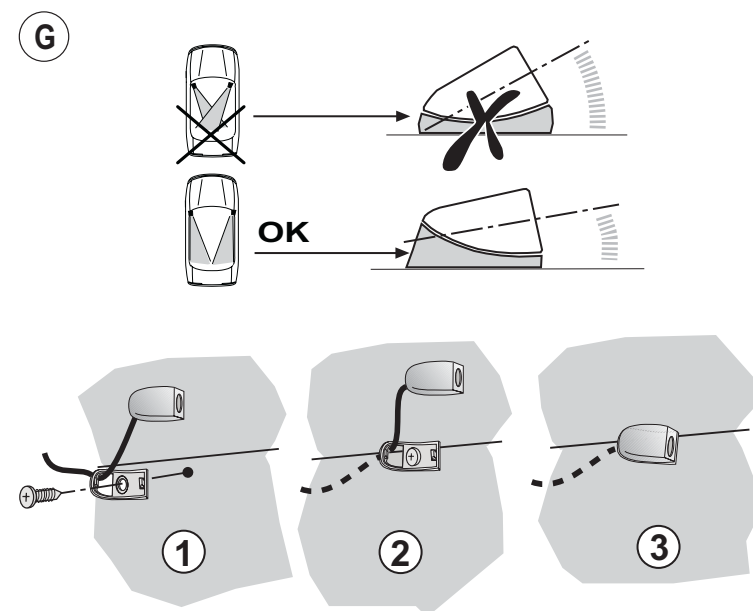
Original relay controlled by a negative signal. Vehicle horn connection with negative control signal to the original relay.



Vehicle horn connection with additional relay.



Low power outputs for vehicles with negative CDL control signals.



6.7 - Alarms memory.

If the system has gone off (alarm on) during the arming time it will warn you with 3 flashes of the direction lights and 3 audible signals (5 audible signals if the arming/disarming audible signals function has been activated). It also stores in its memory the reason of the occurred alarm and shows it on the emergency panel LED. Count the number of flashes and check the corresponding alarm reason on the table. By turning the key ON the memory will be deleted.

LED NUMBER OF FLASHES	ALARM ROOT CAUSE
1 flash	Door opening detection.
2 flashes	Ultrasonic volumetric detection.
3 flashes	Bonnet opening detection.
4 flashes	Ignition key ON detection.
5 flashes	Boot opening detection.
6 flashes	Door opening detection.
7 flashes	Additional sensors.
8 flashes	Siren cable cutting - Cobra Bus.
9 flashes	Not used.
10 flashes	Not used.
11 flashes	Immobilizer 1 module connected to the Cobra Bus.
12 flashes	Immobilizer 2 module connected to the Cobra Bus.
13 flashes	Keyboard module connected to the Cobra Bus.
14 flashes	Not used.

6.8 - Emergency disarming.

If the vehicle original remote control get lost or if it doesn't work, open the door with the mechanical key and turn the ignition key ON. If the system doesn't disarm automatically follow the emergency procedure described in the user manual.

6.9 - Alarm condition.

When the system goes off (alarm ON) the siren sounds and the direction lights flash for 28 s.

7. - PROGRAMMABLE FUNCTIONS.

(see the "FUNCTIONS PROGRAMMING TABLES" manual).

8 - HOW TO PROGRAM FUNCTIONALITIES, COBRA REMOTE CONTROLS AND DRIVER CARDS SELF LEARNING PROCEDURE.

IMPORTANT: (only for PLIP applications and just after the power supply connection or when the battery has been disconnected and reconnected). Before entering in the functions programming procedure, arm the system, wait until the emergency panel LED starts flashing, then disarm the system. From now on it will be possible to performe the programming procedure.

(see 'PAGE 1' and 'PAGE 2' of the "FUNCTIONS PROGRAMMING TABLES" manual).

9. - FUNCTIONAL TEST.

During the first 25 s after the system has been armed all protection functionalities can be tested without triggering an alarm.

Make the following tests during the 28 s inhibition time with the system armed:

open then close one by one all doors and boot - Check if the system is confirming with three audible signal, each door opening detection.

Check the proper functionality of the volumetric ultrasonic sensor - Make movements from the back seat, their detection will be confirmed by a LED flashing.

Note: don't check the proper functionality of the volumetric ultrasonic sensor with the windows opened as many CAN applications are automatically excluding this protection when the windows are left opened.

Open the bonnet then lock the vehicle with the remote control - While arming the system will indicate the bonnet opening with 3 flashes of the direction lights and correspondingly with audible signals. This test is applicable only if the signal is detected from the CAN network or for systems wired siren.

Try to start the engine - If the engine cranking wires have been connected the engine will not start. **Warning:** on some vehicle by turning the ignition key ON the system will disarm (TRANSPONDER detection).

Check if the PIN emergency Code works properly - By correctly entering the PIN code the system disarms.

10. - CAN / PLIP INDEX MANUAL SELECTION.

The technical support could ask you to manually select a different CAN / PLIP index of the brand which has been loaded in the main unit. To select a different CAN / PLIP application (CAN INDEX) proceed as follows:

as soon as the system is powered - in the disarming state - the emergency panel LED flashes quickly for 5 s, during this time frame keep pressed the emergency panel pushbutton until it will go off then release it. The LED starts flashing slowly a number of time corresponding to the already set index (example 3 flashes for index 3).

While the LED is flashing slowly, press briefly the button of the emergency panel to switch to the next index; each time you press the button the index increases and so on. By pressing again when the last index has been selected the system will switch back to the first one of the list. Select the correct CAN / PLIP index, then wait for the LED off to confirm the current index selection.

Note1: the same CAN index can be used for many vehicle models, check the CAN INDEX table available on the web.

Note2: there are four PLIP index available, check the vehicle specific PLIP installation sheet or the PLIP application manual available on the web in the "Application Manuals" section.

11. - SELF LEARNING PROCEDURE REQUIRED TO REPLACE THE MAIN UNIT OR THE WIRELESS SIREN REPLACEMENT.

The siren supplied in the kit is delivered already programmed to the main unit. Should you have the need to replace the siren or the main unit it is required to perform the self learning procedure as follows:

IMPORTANT: don't perform the procedure on two different vehicles parked closed each other. Their sirens could be memorized in one main unit only.

- A. Power the main unit by connecting the 26 ways connector.
- B. Connect the main unit blue wire to GND (only when a wireless siren is fitted).
- C. Open the bonnet.
- D. Connect the siren blue wire to GND (if not already grounded through the additional bonnet pushbutton).
- E. Disconnect the siren 6 ways connector, then plug it again.
- F. Within 60 s turn the ignition key ON, an audible signal confirms that the siren has been stored in the system.
- G. Turn the ignition key OFF and disconnect the BLU wires of the main unit and of the siren from GND (if grounded through the additional pushbutton simply open the bonnet).

Check the system functionality arming the system and triggering the alarm to check the proper sounding of the siren.

12. - DOCUMENTS HANDOVER.

Be sure the user user 'quick reference' and the PIN code card is placed in the glove compartment and carry out a full functionality demonstration to the customer.

13. - SYSTEM TECHNICAL SPECIFICATIONS.

The manufacturer shall not be liable for any faults or malfunctions in the anti-theft device and/or in the electrical system of the vehicle due to incorrect installation and/or to failure to comply with the indicated technical specifications. The system must only be considered as a deterrent against theft attempts.

TECHNICAL SPECIFICATIONS 4600	
Rated supply voltage	+12 V DC
Operating voltage	+8 V ÷ +16 V DC
Current consumption (central unit, LED and siren) disarmed	8 mA
Current consumption (central unit, LED and siren) armed	12 mA
Central unit operating temperature	- 40 °C + 85 °C
Siren operating temperature	- 40 °C + 85 °C
Self power supply	Lithium Battery 6 V 1300 mAh
Loudspeaker sound pressure level	>115 dB @ 1m
Siren sound pressure level	>114 dB @ 1m
- Central dimensions	91x69x35 mm
- Siren dimensions	113x79x45 mm
Transmitter battery / Cobra Driver Card	Lithium Battery 3 V CR2032

14. - FOR MARKET ONLY

Category 1,2 or 2-1 systems permanently installed as aftermarket equipment by import or distribution centres, vehicle dealers, or by Independent Installers, shall be installed by companies and technicians who are trained, qualified, industry recognised professional installers.

Thatcham recommends to its insurer members that the installations of certified products within the aftermarket are registered with an independent installation registration system which can be accessed by insurance companies. Thatcham administer the Thatcham Recognised Installer scheme, on behalf of the British motor insurance industry, providing independent registration of installations to vehicle owners. Details of the Thatcham Recognised Installer scheme can be found at www.thatcham.org/tri/home. To ensure consumers insurance cover is not adversely effected it is highly recommended that all installations are carried out by Thatcham recognised installers and that all installs are registered providing the vehicle owner with a Thatcham recognition of installation for presentation to insurers.

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