



The **UltiMate-EDP** is a fully-featured **add-on alarm system** which can be controlled by an existing remote keyless entry system (RKE); it is also a sophisticated completely **stand-alone alarm system** utilizing its own high performance transmitters, and it can even be configured as **both, controlled by its own 1-way transmitters or 2-way controllers and a host system**, such as a remote keyless entry system.

One or more of these patents may apply to this product:
#5,612,669 #5,654,688 #5,663,704 #5,729,191 #5,818,329
#5,612,578 #5,739,747 #382,558 #385,878 #5,750,942
#5,739,748 #5,719,551 #406,107 #701,285 #5,973,592
#5,982,277 #5,986,571 #6,011,460 #6,037,859 #6,049,268
#6,130,605 #6,130,606 #6,140,938 #6,140,939 #6,150,926
#6,144,315 #6,184,780 #6,188,326
Foreign Patent #199700312 #EP0817734B1 #98906445.6
#2,320,248 #701,285

UltiMate-EDP

Vehicle Security Alarm System

Installation Instructions

How are you installing this unit?

If you are installing this unit as a “Stand-Alone” alarm system, with Omega transmitters or 2-way controller, you will need to make the main harness and secondary harness wiring connections, but not the arm/disarm harness. You will need to program transmitters.

If you are installing this unit as an “Add-On” alarm system to a factory-installed keyless entry system, you will have to connect the arm/disarm harness, in addition to the main harness and secondary harness wiring connections. You may or may not need to program transmitters.

Please CAREFULLY READ this booklet!



Installation Instructions

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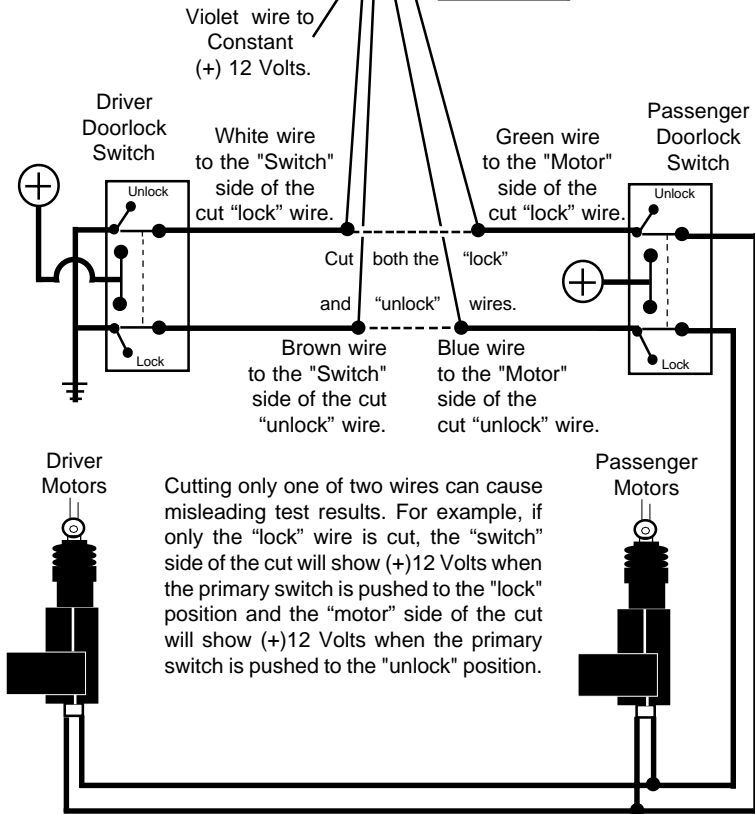
LOCKS

Relay

Relay

DLS

DLS Red connector plugs into Control Unit



Just that- the ultimately flexible, most comprehensive vehicle security alarm system available today to professionals servicing new and used vehicle retailing facilities. The UltiMate-EDP's "ultimate flexibility" allows it to be:

- a fully-featured **add-on alarm system** which is controlled by an existing remote keyless entry system (RKE);
- as a much more sophisticated, completely **stand-alone alarm system** utilizing its own high performance 1-way transmitters **and / or** Omega Echo LCD controllers (i.e.- 2-way transmitters);
- it can be configured as **both**, operated by its own **transmitter or controllers and by a host system** such as an OEM remote keyless entry;
- and it features an inventory protection mode, whereby it is operated by a master dealer transmitter.

The UltiMate-EDP does not have transmitters programmed into it from the factory, nor does it include transmitters. This allows the UltiMate-EDP to be installed as a pre-loaded inventory protection system, as an add-on security system, and be installed or reconfigured as the end-user's vehicle antitheft and security system.

Car Dealership Inventory Protection mode- Special dealer transmitters are capable of operating every UltiMate-EDP-equipped vehicle on a dealer's lot at the same time. The entire vehicle inventory may be secured and protected, yet vehicles are easily accessible for customer demonstration or service. Even with these special dealer operations, the vehicle purchaser is assured of a secure and uncompromising antitheft system by special design features and Omega's exclusive and patented Automatic Transmitter Verification and Unauthorized Transmitter Alert.

Types of Transmitters- There are three basic types of transmitters which can be directly programmed to the UltiMate-EDP system- two forms of Omega “User” transmitters (1-way only and 2-way); and the “Dealer” transmitter.

- The purchaser and owner of the vehicle will utilize the **“User Transmitter”** (provided the UltiMate-EDP is not installed only as an add-on alarm to a factory keyless entry system). Up to four total User 1-way transmitters and/or 2-way controllers may be programmed into the UltiMate-EDP. User transmitters are available in a customer presentation kit of 2 transmitters. The 2-way Echo controller is available as a special kit of 1 controller and the window-mounted antenna module which is required to upgrade the UltiMate-EDP to 2-way operation.
- The car dealer uses **“Dealer”** transmitters to secure the inventory, and to access and demonstrate individual vehicles. The UltiMate-EDP’s dealer transmitter mode allows only one transmitter to be learned, but dealer transmitters are available to individual car dealerships in like-coded lots, so that multiple authorized personnel can have access to any vehicle equipped with an UltiMate Vehicle System.

Of course, OEM transmitters can also operate the UltiMate-EDP, but it must be installed with wiring connections (the "Arm/Disarm" harness) to "read" the existing keyless entry system, making it an "add-on".

To be most effective and time-efficient with this product, it is very important for the installer to understand all of the details regarding both methods of transmitter programming. When programming transmitters in either mode, the installer has several time-saving options.

Dealer Transmitter Programming

Dealer Transmitter Programming configures the UltiMate-EDP for Inventory Protection mode. Important points to remember are:

- Only one dealer transmitter may be programmed into the system. Other like-coded dealer transmitters will also operate the system.
- In Inventory Protection mode the Valet Switch can not be used to place the system in valet mode nor to override an armed or activated system.
- In Inventory Protection mode the wired Arm/Disarm inputs will not operate. They will resume operating when the dealer transmitter is removed.
- Programming in a dealer transmitter automatically turns on 4 features- Last Door Arming and locking; and Automatic Rearming and locking.
- The dealer transmitter has two operating buttons. Depending upon which of these buttons is pressed when programming determines if the wired Arm/Disarm inputs will operate or not operate in Inventory Protection mode.

Dealer Transmitter Programming Procedure

- Step 1 -** Turn the vehicle's ignition on and within 7 seconds press the Valet Switch **10** times. The system will briefly sound the horn once at the 5th Valet Switch press, then 2 chirps at the 10th Valet Switch press.
-
- Step 2 -** Within 7 seconds press either transmitter button accordingly:
Press LOCK to program the transmitter, turn on automatic arming, and leave the Arm/Disarm inputs **operable**.
or
Press UNLOCK to program the transmitter, turn on automatic arming, and leave the Arm/Disarm inputs **not operable**.
or
Press LOCK and UNLOCK together to leave the Arm/Disarm inputs **operable**, turn off automatic arming, and **erase** the transmitter code.
The system will respond to a transmission by chirping the horn.
-
- Step 3 -** Turn the ignition switch off or wait 8 seconds for the system to exit the Dealer Transmitter Programming mode. This is indicated by the horn briefly sounding. If an attempt is made to program more than one transmitter the system will also immediately exit the Dealer Transmitter Programming mode.

5 Wire Reversal Rest At Ground Systems differ from the Negative and Positive Pulse systems in the fact that there are no relays or doorlock control unit. In this type of system, the switches themselves supply the positive voltage directly to the doorlock actuators, and, more importantly, provide the return ground path. The correct doorlock interface for this type of system is the optional DLS or DLS-3 and 2 or 3 relays. The important thing to remember is the wires in this system *rest at ground*, which means that the wires must be "opened", or cut, to make the connections.

Examine the wires on the back of the switch. Normally five wires will be found. Of these wires, one will be constant 12 volts positive, regardless of the switch's position. Two wires will be grounded regardless of the switch's position. Of the two remaining wires, one will show 12 volts positive when the switch is pushed to "lock", and the other will show 12 volts positive when the switch is pushed to "unlock".

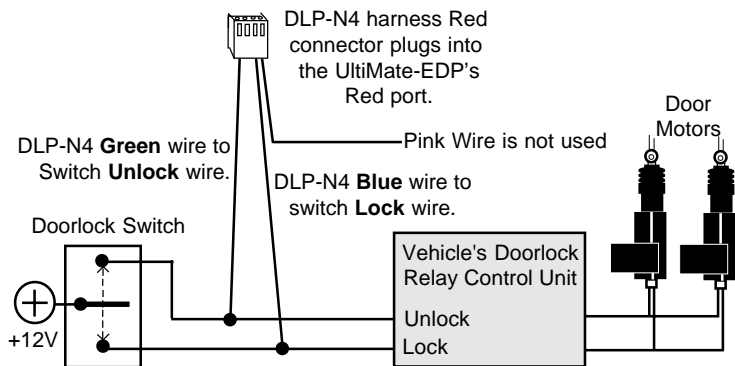
These two wires are both routed to the doorlock actuators and are connected to either end of the actuator's motor winding. When the switch is pushed to one position, one of these two wires will have 12 volts. This voltage flows through the wire to the actuator's motor winding, and since the other wire is still *resting at ground* an electrical circuit is completed. When the switch is pushed to the opposite position the electrical flow is *reversed*. When the correct wires are found, they must be cut. Notice in the diagram (following page) that the driver's switch is the primary switch and referred to as the "switch" wires. The wires that go to the secondary switch are referred to as the "motor" wires. Even though the cut is made between the switches, the two sides are still correctly called the "switch" and the "motor" sides, with consideration of "Primary" and "Secondary" switch; please see the diagram.

The UltiMate-EDP "out of the box" can be directly connected to 3 Wire Negative and 3 Wire Positive doorlocking systems. The DLS and 2 relays shown on the next page is an optional interface, like the DLS-3 for driver's door priority applications. Omega also offers other specialty doorlocking interfaces, including a comprehensive line of databus interface modules; all doorlocking accessories have their own detailed instructions.

wires, one will show ground when the switch is pushed to the "lock" position, and the other wire will show ground when the switch is pushed to the "unlock" position. With the switch at rest, these two wires will read voltage, usually 12 volt positive but in some cases less. The wires from the switches operate doorlock relays or a doorlock control unit with built-in relays. The correct connection point is between the switches and the relays.

CONNECTION: The included harness (DLP-N4) can allow direct connection between the security system and a 3-Wire Negative Pulse system. Some doorlock systems, however, require more than the 500mA Ground output that the security module can provide. In these cases the optional model DLS and two relays must be used. When driver's door unlock priority is desired, use the optional DLS-3.

3 Wire Positive Doorlocks Using The Control Unit Outputs



3 Wire Positive Pulse Systems are very similar to the Three Wire Negative Pulse system except the vehicle's doorlock switches use 12 volt positive pulses to operate the vehicle's doorlock relays or control unit. Examine the three wires on the back of the switch; **if more than three, suspect a 5 Wire Reversal system**. One will be constant 12 volt positive, regardless of the switch's position. Of the two remaining wires, one will show Positive when the switch is pushed to "lock", and the other will show Positive when the switch is pushed to "unlock".

CONNECTION: Connect directly as shown; use the included DLP-N4 doorlock harness and simply reverse the lock and unlock wires. If the doorlock system needs more than 500mA to operate it, or if the system is a 5 Wire Reversal system, a DLS and two relays must be used. When driver's door unlock priority is desired, use the optional DLS-3.

Other important aspects of Dealer Transmitter Programming and the Inventory Protection mode include the following:

- When the UltiMate-EDP unit's Arm/Disarm are connected, and a dealer transmitter is programmed by the Dealer Transmitter Programming method to allow the Arm/Disarm to operate, both the dealer transmitter and the OEM transmitters will operate the UltiMate-EDP system, **until** the remote keyless entry is used to lock and unlock the vehicle's doors for an accumulated total of 20 times, without the Omega transmitter being used during that time. In this case the Omega dealer transmitter **will automatically be erased** from the system.
- Although the system will acknowledge a user transmitter, if it is presented during the Dealer Transmitter Programming procedure, it will not operate the UltiMate-EDP after programming is exited. Only the dealer transmitter will operate the system in Inventory Protection mode.
- The Unauthorized Transmitter Alert (UTA) chirping warning is independent of the Dealer Transmitter Programming process. If UTA is on before a dealer transmitter is programmed, the warning chirps will operate afterward. If UTA is off before a dealer transmitter is programmed, it will continue to be off afterwards. UTA may be turned on or off during User Transmitter Programming. The UTA operation is described in the Operation Guide.

User Transmitter Programming

User Transmitter Programming accommodates both 1-way transmitters and 2-way controllers. This is the procedure used to prepare the UltiMate-EDP for the end-user, unless it will be used as an add-on security system to OEM keyless entry. Important points to remember related to User Programming are:

- Up to **four** user transmitters may be programmed into the system. Any combination of 1-way transmitters or Echo 2-way controllers may be used to operate the UltiMate-EDP.
- The Valet Switch is made fully operable, and can be used to place the system in valet mode and used to override an armed or activated system.
- The wired Arm/Disarm inputs, if connected, are restored to operating when a user transmitter replaces a dealer transmitter.
- Programming in a user transmitter automatically turns off the Last Door Arming and locking; and Automatic Rearming and locking features, restoring all four features to the factory-default setting. These features may then be turned on, should the end user desire any or all of them.
- The user transmitter and controller both have four system-operating buttons. Pressing any of the buttons by itself will program the transmitter to the system, and there are also button combinations, which if pressed will code the transmitter and at the same time will turn on or turn off the Unauthorized Transmitter Alert feature.

The User Transmitter Programming Procedure is continued on the next page.

User Transmitter Programming Procedure

Before starting have all transmitters present which are to operate the system.

Step 1 - Turn the vehicle's ignition on and within 7 seconds press the Valet Switch **5** times. The system will briefly sound the horn at the 5th Valet Switch press.

Step 2 - Within 7 seconds press any single transmitter button:
This will program the transmitter to the system without affecting the UTA feature.

OR

Within 7 seconds press either transmitter button combination:

Press LOCK & UNLOCK buttons together to program the transmitter,
and turn **on** the Unauthorized Transmitter Alert feature.
or

Press OPTION & the red PANIC buttons together to program the transmitter, and turn **off** the Unauthorized Transmitter Alert feature.

The system will respond to any transmission by chirping the horn.

Step 3 - Repeat Step 2 for each additional remote to be programmed.

Step 4 - Turn the ignition switch off or wait 8 seconds for the system to exit the User Transmitter Programming mode. This is indicated by the horn briefly sounding. If an attempt is made to program more than four transmitters the system will also immediately exit the User Transmitter Programming mode.

About Unauthorized Transmitter Alert (UTA)- Unauthorized Transmitter Alert is an exclusive, patented feature of the UltiMate-EDP. When the UTA feature is turned on, for 48 hours after transmitters have been programmed to operate the UltiMate-EDP system, every time the ignition switch is turned on the horn will rapidly chirp for two seconds and the system Status Light will flash the number of transmitters between pauses for 90 seconds.

Even when UTA is turned off, the normal operation of the UltiMate-EDP is to show how many operating transmitters are programmed to it by flashing the number via the system Status Light for 10 seconds after the ignition is turned on.

Programmable Features

The UltiMate-EDP has 30 programmable features. Most of these features have a direct effect upon how the UltiMate-EDP operates, and thus allow the end user to customize the system's operation to their preference. Other programmable features are installation related, and thus are more important to

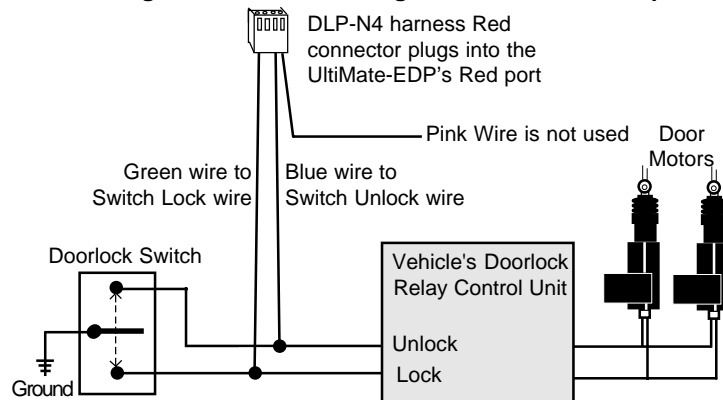
Plug-In Power Doorlock Interface Port

The UltiMate-EDP features a plug-in port for an optional doorlock interface, allowing it to operate the vehicle's existing power doorlocks. The 4 pin port on the system's control module produces a negative pulse output for locking the doors (inside pin), a constant 12 volt pin for the *optional relay coils only* (second pin from inside), a first negative pulse output for driver door unlock (second pin from outside), and a second negative pulse output for unlocking all other doors (outside pin). In addition, **the lock and unlock #1 outputs are dual polarity**, which allows the UltiMate-EDP to operate both 3-Wire Negative and 3-Wire Positive doorlocking systems out-of-the-box with the included DLP-N4 doorlock harness.

All connections should be with proper terminals, connectors, or by soldering and insulating with quality vinyl electrical tape or heat shrink tubing. All wiring should be carefully routed to avoid the possibility of chaffing or otherwise being damaged.

The vast majority of power doorlocks are found as three system types: 3 wire negative pulse, 3 wire positive pulse and 5 wire reversal, rest at ground. Other power doorlock systems which may be encountered are the vacuum pump types found in older Mercedes vehicles and the single wire, dual-voltage which has appeared in some late model vehicles. The best way to identify a doorlock system is to examine the doorlock switch's wiring.

3 Wire Negative Doorlocks Using The Control Unit Outputs



3 Wire Negative Pulse Systems are typically indicated by the presence of three wires at the switch. Of these, one will show constant ground, regardless of whether the switch is being operated or not (at rest). Of the remaining two

pulse generated by the Remote Keyless Entry unit so that the UltiMate-EDP can only detect the negative pulse from the switches. Connections are made easiest at the RKE module itself.

Type 5 Connection: This connection configuration is a universal type that will interface with any vehicle that remotely unlocks the driver's door first. With this system all of the relays are built into the keyless entry module. The switch wires are not needed for this type of system. This type is similar to Type 3 Connection with the exception that the pink wire is hooked to the lock motor wire instead of the lock switch wire, therefore the blue pass through wire is not used.

Special Connection - Parking Light Override: Programmable feature #17 controls how the UltiMate-EDP can be disarmed by the Gray and Brown wires. How this features works:

- In the normal "off" setting of this feature, if the Gray disarm wire and the Brown disarm override wire both see a polarity change at the exact same moment, the UltiMate-EDP will **not** disarm.
If only the Gray disarm wire changes polarity, but not the Brown override wire, the UltiMate-EDP **will** disarm.
In this setting, the UltiMate-EDP is configured to monitor two different parts of the power doorlocking system.
- In the non-factory setting of this feature, feature #17 "on", if either of these wires, the Gray disarm wire or the Brown disarm override wire, see a polarity change then the other wire is monitored for 1 second. If the second wire does have a change within 1 second of the first wire, the UltiMate-EDP **will** disarm.
The changes, first to one of these wires and then the second one, must occur within 1 second, or the UltiMate-EDP will ignore the input and will **not** disarm.
In this setting, the UltiMate-EDP monitors an unlock wire, such as an actuator wire, and the vehicle's flashing light confirmation to the keyless entry.

When Parking Light Override is set to operate (feature #17 "on"), only the disarming operation of the UltiMate-EDP is affected. The unit's arming and arming override wires, the Pink and White wires, would still be connected as needed according to the Types 1 through 5 diagrams. The Gray disarm wire would be connected to a doorlock actuator's "unlock" wire; and the Brown override wire would be connected to vehicle lights which flash for keyless entry operations- the parking lights, headlights or the directional flasher lights.

the installer rather than the end user. **The most important installer-related features, automatic arming and locking, and bypassing the wired Arm/Disarm, are incorporated into the transmitter programming routines as described in the previous pages.**

Before attempting feature programming, familiarize yourself with the programming procedure instructions. **For individual feature descriptions, please refer to the Operation Guide booklet.** A Programmable Features Checklist is provided in this booklet, on the following page.

Regular manual programming of the 30 features is accomplished with the Valet Switch to access programming mode and the specific feature, and then the transmitter is used to change the chosen feature. If the UltiMate-EDP is integrated with an OEM keyless entry system, the factory transmitter also changes the feature when programming, although this is actually done via the Arm/Disarm wiring connections, the same means as the how the OEM keyless entry arms and disarms the UltiMate-EDP in normal operation.

Features Programming Procedure

Step 1 - Turn the vehicle's ignition off and within 5 seconds press the Valet Switch 5 times. The system will respond by chirping, then briefly sounding the horn, and the Status Light will start rapidly flashing.

Step 2 - Within 10 seconds access the desired feature by pressing the Valet Switch the same number of times as the feature number. When the feature is selected, the Status Light will change from rapidly flashing to flashing the same number as the feature, between pauses.

Step 3 - Within 10 seconds change the chosen feature:

Press the transmitter's LOCK button to turn the feature "on".
or
Press the UNLOCK button to turn the feature "off".

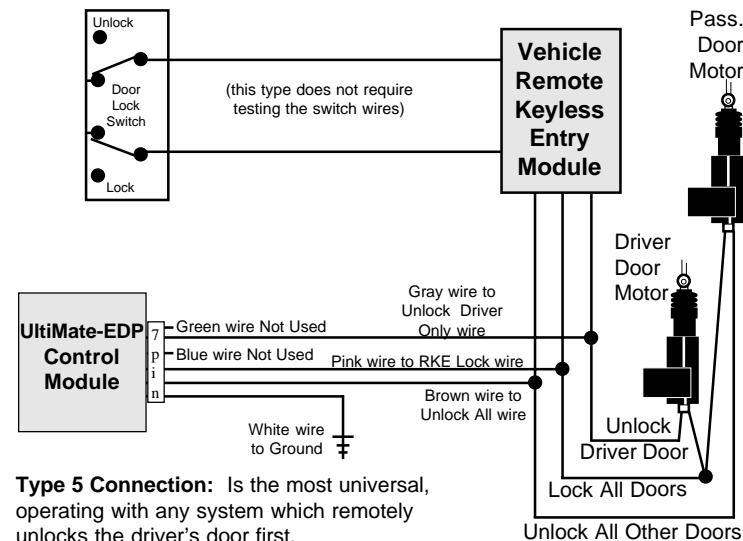
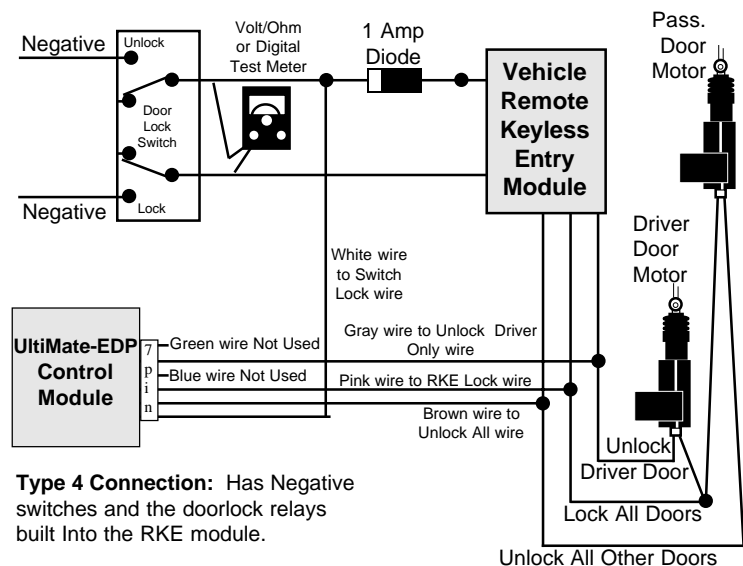
Turning the feature "on" is indicated by one horn chirp; turning the feature "off" is indicated by two horn chirps. Also, turning a feature "on" will cause the Status Light to illuminate steady, while turning the feature "off" will cause the Status Light to go out.

Step 4 - Repeat Steps 2 and 3 for each additional feature to be changed.

Step 5 - Allow 10 seconds without programming activity (i.e.- not pressing any transmitter buttons or pressing the Valet Switch) to expire, and the system will exit the features programming mode, which is indicated by the horn sounding once.

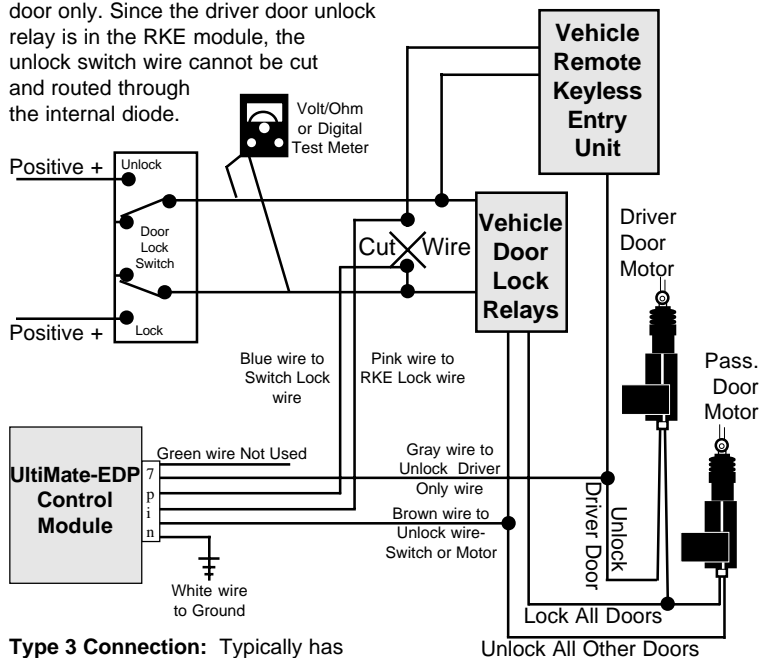
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#	FEATURE	DEFAULT
1	Selectable Coded Override	1 & 0 (see the Operation Guide)
2	Last Door Arming	OFF
3	Automatic Rearming	OFF
4	Starter Interrupt Circuit	ON
5	Automatic Starter Interrupt	OFF
6	Ignition Activated Override	OFF
7	Doors Lock With Last Door Arming	OFF
8	Doors Lock With Automatic Rearming	OFF
9	Doors Lock With Ignition On	ON
10	Doors Unlock With Ignition Off	ON
11	Open Door Bypass To Ignition Lock / Unlock	ON
12	Confirmation Chirps	ON
13	Confirmation Chirps In Valet Mode	OFF
14	Activated Alarm Cycle	60 Seconds (ON)
15	Lights On Upon Disarm	ON
16	Disarm Alarm Upon Trunk Release	ON
17	Parking Light Override	OFF
18	Doorlock Pulse Time	.8 second (ON)
19	Double Unlock Pulse	OFF
20	Arming Delay	3 Seconds (ON)
21	Pulsed Horn / Steady Siren Output	Pulsed Horn (ON)
22	Horn Chirp Volume Level	<i>see page 14</i> Medium Soft (ON)
23	Total Closure Lock Output	OFF
24	Alarm Functions Bypass	OFF
25	Ignition-Activated Anti-Carjacking Protection	OFF
26	Door-Activated Anti-Carjacking Protection	OFF
27	Open Door Warning Upon Arming	OFF
28	PANIC Button Operates "Panic" or Additional Output	Panic (ON)
29	Transmitter-Activated Anti-Carjacking Protection	OFF
30	Doorlocking In Add-on Mode	OFF



system will not arm or disarm because the door switch should not operate the system. These four wires "learn" the polarity of the vehicle wires, therefore, these wires must rest either at 12 Volts Positive or at Negative ground.

The Type 3 Connection: This system typically has doorlock relays that are separate from the Remote Keyless Entry module with the exception being the driver door unlock relay is inside RKE module. The Type 3 Connection utilizes the unlock operation parameter that only the transmitter can unlock the driver's door only. Since the driver door unlock relay is in the RKE module, the unlock switch wire cannot be cut and routed through the internal diode.



Type 3 Connection: Typically has doorlock relays separate from the RKE module.

The Type 4 Connection: This system is used to interface the UltiMate-EDP with many vehicles, especially Ford, Lincoln and Mercury vehicles. In this type of Remote Keyless Entry system, all of the doorlock relays are built into the RKE module, a back feed pulse is generated by the module and the doorlock switches generate Negative pulses instead of Positive, preventing using the Green and Blue pass through wires. The diode is needed to block the negative

Installation

The single most important factor regarding the proper operation and effectiveness of a vehicle security system, and thus its owner's satisfaction, is its installation. A quality installation makes a difference!

Installation Considerations

Be aware before starting the installation of the UltiMate-EDP's unique ability to be installed as an "add-on" security system, a "stand-alone" security system, or as a combination of both, and plan the installation accordingly.

The 5-pin main harness and the 8-pin secondary harness are always used. The 7-pin Arm/Disarm harness must also be used if the UltiMate-EDP is installed as an "add-on" security alarm to an existing remote keyless entry system (RKE).

Take special care in **making wiring connections**; soldering is most desirable, followed by correct crimp-type terminals. "Quick-tap" or "t-tap" connections are acceptable, providing that extreme care is taken to ensure that they are done correctly. The "strip and twist" method of joining wires is the least desirable; although a satisfactory connection can be made if done properly, this is the least reliable method of joining wires. When using any method, it is most important that the spliced wires be adequately insulated; not only to prevent short-circuits, but to also protect the wires' splice from exposure to the weakening effects of air and moisture.

Always **mount the Control Module** in the vehicle's interior compartment, in a secure location that is not easily visible or accessible. Ensure that moisture, vibration and temperature extremes are minimized. Acceptable locations include mounting behind the dash, behind the glovebox or other interior panels.

The **LED Status Light** and **Valet Switch** are important parts of the UltiMate-EDP system and must be installed. The installer has two basic installation options for these items.

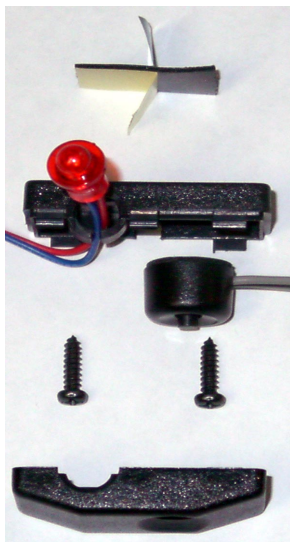
These items may be separately **custom installed** by mounting the Status Light in the vehicle interior where it can be easily seen by the operator, and preferably where it can be seen from the exterior of the vehicle. To do this drill a 9 / 32" hole in a suitable interior panel, route the wiring harness through the hole to the control module, and snap the LED in place. Plug the Status Light's small 2-pin plug into the red matching port on the control module. Mount the Valet Switch, using its adhesive pad, in a hidden location which is accessible to the operator; carefully route the wires to the control module, and plug the valet switch's blue 2-pin plug into the control module's blue 2-pin port.

Also included is a **combination holder** assembly for the Status Light and Valet Switch (exploded view of all parts, below). Mount the combination holder assembly in a location where it can easily be seen by the driver, and preferably where it can be seen from outside. Two mounting options are provided: double-sided adhesive tape for “no-mar” mounting, and 2 screws for a more permanent mounting.

If using the adhesive tape, properly prepare the mounting surfaces to ensure good adhesion, and then affix the completed combination holder assembly. To complete the holder assembly, adhere the Valet Switch to the upper combination holder half, insert the LED into the upper half collar, and then snap the two halves together with the wires exiting the hole in the rear of the upper half.

If using the screws for a more permanent mounting, carefully screw the upper half to its mounting location (avoid overtightening), install the Valet Switch and LED Status Light to the upper half, and then snap the assembly halves together with the wires exiting the hole in the rear of the upper half.

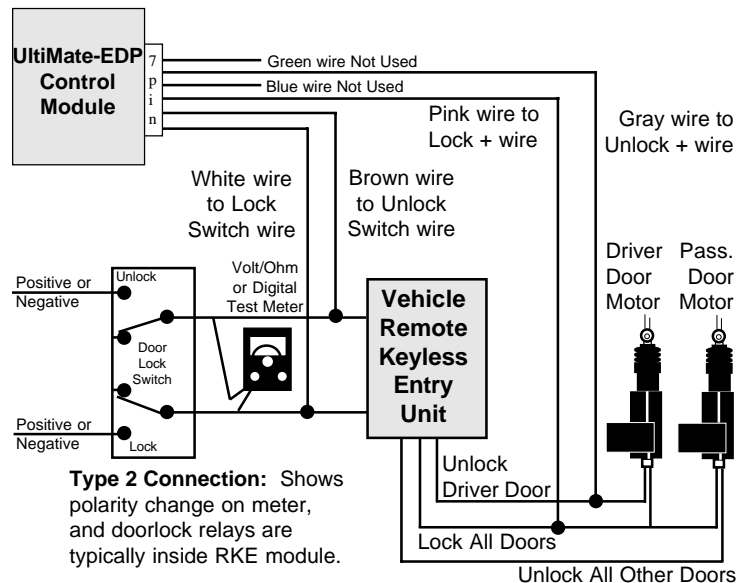
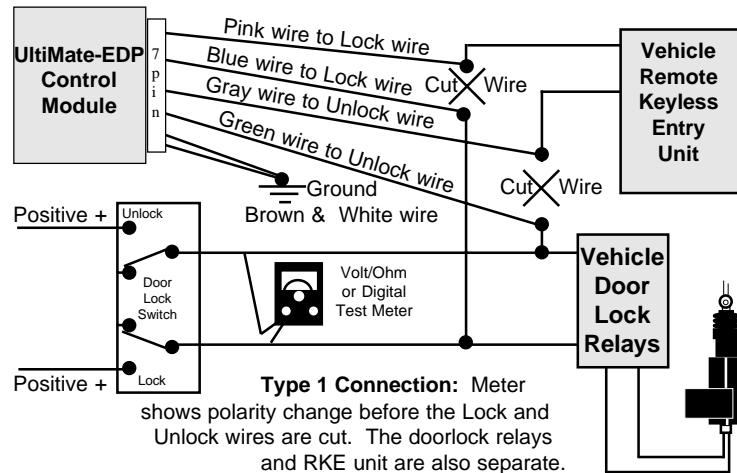
To complete any of the mounting methods, carefully route the wirings to the control module to avoid any chances of them being chafed or pinched, and plug them into their respective control module ports.



Power doorlock connections for outputs (the UltiMate-EDP operating the vehicle's doorlocks; not the 7-pin harness Arm/Disarm inputs) fall into two broad categories:

- A traditional analog interface, of which the most common types (3-wire Negative, 3-wire Positive and 5-wire Reversal) are described in the final section of this booklet. Other less-common analog interfaces also exist, which typically involve adding resistors, or an optional Omega DLR-U to the UltiMate-EDP's outputs. Extended output pulse and double output unlock pulses are accommodated within the UltiMate-EDP's programmable features set.
- Databus doorlocks, found increasingly on newer model vehicles. This type of interface requires an optional Omega databus module, which is controlled by the UltiMate-EDP's green Data Port, or by its doorlock output port.

Included with the UltiMate-EDP is the harness needed to utilize its analog doorlock output port, but the Data Port must be accessed with the harness included with the databus accessory module. Detailed specific instructions are included with all Omega accessory products.



The Type 2 Connection: When the Gray or Pink wires experience a change in polarity the security system will arm or disarm. If the Brown or White wire change polarity at the same instant that the Gray or Pink wire does, the

7-Pin Arm / Disarm Harness

The 7-pin Arm/Disarm harness must be connected if the UltiMate-EDP is to be used as an “add-on” security alarm to an existing remote keyless entry system (RKE). If the UltiMate-EDP will be used with Omega transmitters or the Echo controller, the 7-pin harness is not used.

The 7-pin harness contains the wires which will operate the UltiMate-EDP as an “add-on” alarm. A change in polarity on the Pink wire will arm the system and a change in polarity on the Gray wire will disarm the system. The Blue wire is a pass-through wire connected to the Pink wire and the Green wire is a pass-through wire connected to the Gray wire. Both of these circuits are diode-isolated to allow pass-through connection to Positive-pulsing circuits.

The White wire is the “lock” override wire and the Brown wire is the “unlock” override wire - any change in the polarity of these wires while the Pink and Gray wires receive a change in polarity will cause the UltiMate-EDP **not** to arm or disarm.

The Pink, Gray, White and Brown wires have the capability of learning polarity - both Negative and Positive switch types will operate these wires. Because of this polarity-learning circuitry, all of these wires **must be connected** to either Positive or Negative polarity when the UltiMate-EDP is first supplied Power and Ground. Any of these four wires which are not needed may be grounded.

A 12 Volt Positive pulse on the **Gray/Red** wire will disarm the UltiMate-EDP; this wire may be connected to a Positive trunk release wire.

Five basic types of system connections are used to install the UltiMate-EDP as an “add-on” alarm, and are referred to as Types 1 through 5.

How to test to determine Type 1, Type 2 or Type 3 connections (Type 4 is for vehicles with Negative pulse doorlock switches and Type 5 is a universal connection).

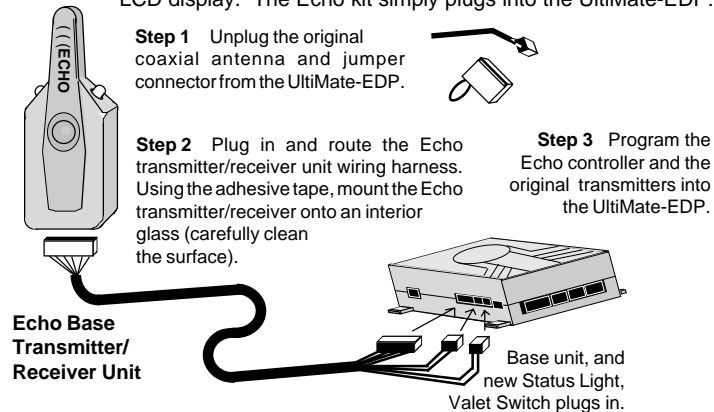
Step 1 - Connect a Volt/Ohm Meter (VOM) or Digital MultiMeter (DMM) to the door **switch** wires.

Step 2 - Operate the **transmitter** to lock and unlock the doors (**do not operate either door switch**).

If the VOM or DMM indicates any change in polarity, it can be determined that the vehicle's remote keyless entry unit back feeds Positive or Negative polarity to the door switch when the transmitter is used. If the doorlock switches are configured to switch Positive pulses and none of the doors unlock after cutting the wire, the **Type 1** wiring diagram may be used. If after cutting the vehicle's unlock wire the driver door only still unlocks, then use the **Type 3** Connection. If the VOM or DMM indicates no change in polarity, then it can be determined that the vehicle's remote keyless entry unit does not back feed either Positive or Negative to the door switch when the transmitter is operated, use the **Type 2** Connection.

Optional Accessories

The UltiMate-EDP features a plug-in port for an **Echo 2-way transceiver module**. This optional kit allows for quick and easy upgrading of the UltiMate-EDP from a 1-way security system to a 2-way system, and includes an Echo LCD 2-way controller which operates the UltiMate-EDP and receives command confirmations and alert pages from it with audible chirp emulation and a graphic LCD display. The Echo kit simply plugs into the UltiMate-EDP:



The control module has a Dual Zone **Sensor Port** for the easy addition of an optional sensor device. When adding an optional sensor, follow the installation instructions included with the sensor. After installing, route the harness and connector from the sensor to the security system control module. Plug the sensor's connector into the module's White port marked "Aux."

Several models of **optional electronic sirens**, including the unique polyrhythmic Psycho Siren, are available as options in place of the UltiMate-EDP utilizing the vehicle's existing horn for its audible operations. The connection and mounting of an optional electronic siren is described on pages 14 and 15.

The UltiMate-EDP has a port so that an optional **backup battery** can operate it, providing protection against vehicle battery disconnect. When in backup battery mode the UltiMate-EDP eliminates light flashing and doorlocking outputs, but still monitors trigger zones and provides audible output.

As mentioned in the power doorlocking description on the previous page, in some cases an optional Databus Module will be required to properly interface the UltiMate-EDP to certain vehicles. The green **Data Port** accommodates these modules, each of which includes its own detailed instructions.

5-Pin Main Harness

The **Black wire** provides Negative ground for the UltiMate-EDP control module; proper connection of this wire is very important.

CONNECTION: Using the correctly sized crimp-on ring terminal, connect the Black wire to the metal frame of the vehicle, preferably using an existing machine-threaded fastener. Make sure that the ring terminal attached to the Black wire has contact with bright, clean metal. If necessary, scrape any paint, rust or grease away from the connection point until the metal is bright and clean. If the control module has an insufficient ground connection, the security system can find partial ground through the wires that are connected to other circuits, and function, but not correctly. As the alarm can partially operate, a bad ground wire connection would not likely be suspected.

The **Red wire's** function is to supply Constant Positive 12 Volts power to the UltiMate-EDP. When 12 Volts is first applied to the Red wire, the system will revert to the state in which it was in when power was taken away. If the vehicle to be serviced, especially if it involves the battery, the system should be placed in Valet Mode. This will prevent the system from being activated if the battery is disconnected and reconnected. The Red wire also supplies 12 Volt Positive to the module's internal relay for flashing the parking lights.

CONNECTION: Connect the Red wire to a Constant Positive 12 Volt source. This source should have Positive 12 Volts with at least a 15 Amp capacity at all times and in all ignition key positions. Connection locations can be at the supply wire at the ignition switch, the supply wire *behind* the fuse block or the fuse/junction block. *Never* just insert the Red wire or any other security system wire behind a fuse. Also, connecting directly to the battery's Positive terminal will expose this connection to failure due to a corrosive environment unless the connection has a protective coating.

The **Yellow wire** is an ignition "on" input to the UltiMate-EDP. This connection is critical to the proper operation of many of the security system's features.

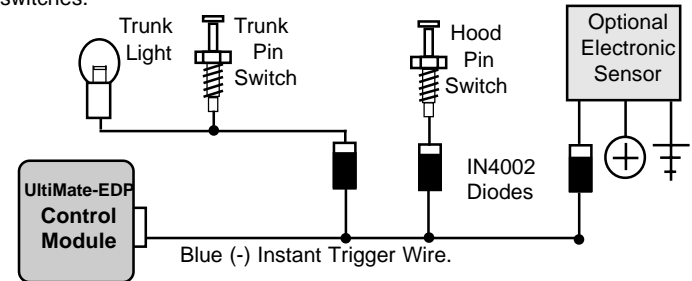
CONNECTION: This wire supplies Positive 12 Volts to the control module whenever the ignition switch is "on". This connection should be made at the ignition switch harness, to the primary ignition circuit. Primary ignition has 0 Volts when the ignition key is in the "Lock", "Off" and "Accessory" positions; and Positive 12 Volts in the "Run" and "Start" positions. Locate the correct wire at the ignition switch harness and securely splice the Yellow wire to it.

The **Orange wire** is attached to a **starter interrupt socket**, which in turn has a thick **Red wire** and a thick **White wire**. The Orange wire is a Negative starter interrupt output, which is active whenever the UltiMate-EDP is in an armed state. This output controls the relay in the starter interrupt socket; an attempt to start the vehicle while the UltiMate-EDP is armed will activate the

The **Blue wire** is a Negative instant trigger used primarily to detect entry into the hood or trunk area of a vehicle.

CONNECTION: The included pin switches may be installed to provide this trigger circuit; or, if there are existing switches (example: a light in the luggage compartment or a "Trunk Ajar" light in the dash), the Blue wire may be connected directly, provided this is a negative ground switching circuit. An indication of such a circuit is the wire having no voltage present when the hood or trunk is open, and up to 12 volts when the hood or trunk is closed. This wire cannot be used with mercury switch types of hood or trunk lights. If the vehicle is equipped with a usable trunk or hood circuit, locate the proper wire and splice the Blue wire directly to the vehicle's wire.

When wiring more than one of the vehicle's circuits and/or additional circuits to this wire, **diode-isolation** may be required to maintain each circuit's proper operation (diagram below). An example would be wiring a hood pin switch and trunk light switch together. Without isolating, the trunk light will illuminate whenever the hood is raised. Also, diode-isolation is necessary when combining sensors together or when adding a sensor in the same circuit as the pin switches.



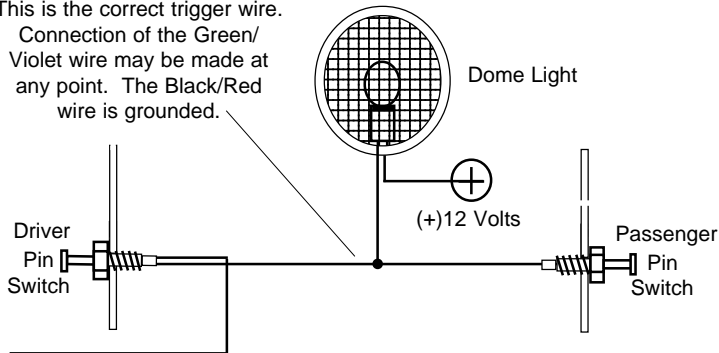
The **Pink wire** is an optional output similar to the Gray trunk release wire; however, this output is not capable of disarming the system when it is used and therefore no audible or visual confirmation.

CONNECTION: On applications such as optional remote starter modules, which have a Negative pulse activation wire, the Pink wire may be directly connected. For other applications an optional relay may be needed. To configure a relay, connect the Pink wire to relay pin (85), and connect Constant Positive 12 Volts to relay pin (86). Connect pin 30 to power, or ground, as needed. Pin #87 is then connected to the application.

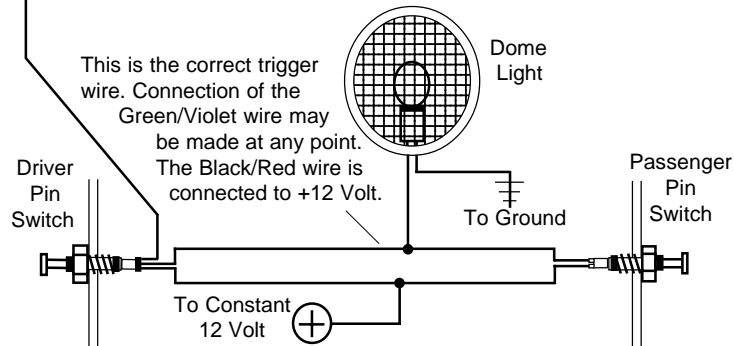
Typical Negative Switching Domelight System

This is the correct trigger wire.

Connection of the Green/
Violet wire may be made at
any point. The Black/Red
wire is grounded.



Note: In both types the Driver Pin Switch will often have an extra wire that activates the "ignition key in switch" warning chime. This is the incorrect target wire for the UltiMate-EDP's trigger.



Typical Positive Switching Dome Light System

The **Green wire** included with the secondary 8-pin harness is used for directly wiring the UltiMate-EDP to an "open door" circuit in the vehicle. This wire is inserted into the harness plug to be a *Negative switching* door trigger or a *Positive switching* door trigger. Using the Green wire to directly wire the door open input to the UltiMate-EDP is an option to using the Smart Trigger.

CONNECTION: Determine the vehicle door open circuit type, using the information above and on the previous page. Once the host polarity is determined, connect the Green wire to it, and then insert the Green wire into the correct empty cavity on the 8-pin harness, using the markings on the harness plug

relay, which opens the starter circuit preventing the starter from engaging.

CONNECTION: The Orange wire is already connected to the relay socket; the Red and White wires only require connection. To interrupt the vehicle's starter circuit, the starter wire must be located, identified and cut. Cutting the vehicle's starter wire will result in two sides- the "ignition switch" side and the "starter solenoid" side. It is recommended that this connection be made as close to the ignition switch as possible. Use a voltmeter, not a test light, to find the correct wire, which is the wire from the ignition switch to the starter solenoid.

CAUTION! Avoid the airbag circuit! Improper use of a test light can cause deployment of the airbag, which may result in bodily injury! Test lights can also damage on-board computers and associated sensors.

The starter wire will read Positive 12 Volts only when ignition key is in "start" position (cranking the engine). Cut this wire at a suitable location. Confirm that this is the correct wire by turning the ignition switch to the "start" position. The starter should not engage. Connect the starter disable socket's Red wire to the ignition switch side. Connect the starter disable socket's White wire to the starter solenoid side. Be sure that good, solid electrical connections are made as this generally is a high amperage circuit.

The following page has a diagram showing a typical dash-mounted ignition switch, and the Orange, Red and White wire connections, and another diagram illustrates the layout of a column-mounted switch.

The **Gray wire** is an optional output; typically the primary use is for trunk release. Unless the vehicle's existing trunk release switch draws no more than 250mA, an optional relay must be used. **Do not confuse** this **Gray trunk release output** wire with the Gray/Red **trunk disarm input** wire on the 7-pin Arm/Disarm harness.

CONNECTION: Connect the Gray wire to relay pin (85), and connect Constant Positive 12 Volts to relay pin (86). Connect pin 30 to power, or ground, as needed. Pin #87 is then connected to the vehicle's trunk wire.

8-Pin Secondary Harness

The **Brown wire** is a Negative output (at 1 Amp) for the system's audible output, and can operate either the vehicle's existing horn or an optional electronic siren. Programmable Feature #21 should be set for the pulsed output to properly sound the horn (this is the default setting), or set for steady output for the optional siren. When Feature #21 is set for "pulsed" output, Feature #22 offers two or four settings for adjusting the horn's confirmation chirps.

The horn chirp volume may be set at one of four levels **when an Omega transmitter or 2-way controller has been programmed to operate the UltiMate-EDP** (as 4 buttons are needed to set the 4 chirp levels). Then, when programming feature #22, press the remote transmitter's UNLOCK button for Softest chirps, press the LOCK button for Medium Soft chirps, press the OPTION button for Medium Loud chirps, or press the PANIC button for the Loudest chirps. Feature #22 is only available for use when Feature #21 is programmed for the "Pulsed Horn" setting. An OEM remote keyless entry transmitter and the Features Programming Module can select between the first two settings only, Medium Soft chirps (default setting) and Softest chirps.

Existing Horn Option CONNECTION: The Brown wire may be connected directly to the vehicle's horn switch wire, provided the circuit operates with 1 Amp of current or less. The horn wire is typically found around the steering column; the correct wire will show Positive 12 Volts normally, and no voltage when the horn is being sounded. Once the vehicle's horn wire is identified, probe the wire with a standard test light connected to Negative chassis ground. If the horn sounds when probed, a direct connection may be made. If not, use the diagram on the following page to configure an optional relay.

CAUTION! *Avoid the airbag circuit!* This is one of the few legitimate uses for a standard test light in a modern vehicle; use a digital multimeter (DMM) to identify the horn wire first.

Probing an airbag circuit with a standard test light can cause the Airbag to deploy!

Another alternative is to disconnect the horns, then operate the horn switch. Typically, a "clicking" sound from the vehicle can be heard as the horn button is pressed, and released, which confirms the presence of an existing horn relay. Yet another alternative is to consult a wiring schematic of the vehicle in question to determine if an existing horn relay is present.

Configuring An Optional Relay: The Brown Horn/Siren output wire has a 1 Amp capacity, which, if exceeded, can damage the security system control module. In certain situations, such as a vehicle which lacks a horn relay or

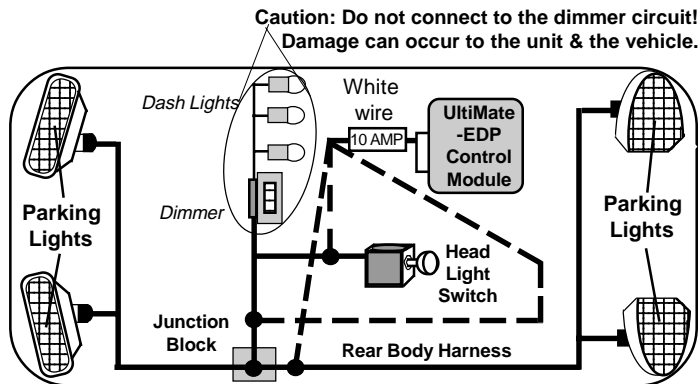
change polarity as the doors are opened and closed. If the vehicle uses a Negative switching domelight system, the activation wire will have no voltage present and show chassis ground when a door is opened, and up to 12 volts when the doors are closed. The correct wire will show this change when any of the doors are opened. If it is a Positive switching system, the above is reversed. If the vehicle has delay domelights, take this into account when testing.

The UltiMate-EDP has a unique "**Smart Trigger**" feature which saves time- if the installation includes domelight supervision, that circuit can also serve as the open door input, or door trigger, by correctly configuring a PCB jumper. If Smart Trigger is used, the Green or Violet door trigger wires do not have to be connected.

After connection of the Green/Violet and Black/Red wires are completed, the next step is to **ensure that the Smart Trigger jumper is in the correct polarity setting**. The Smart Trigger jumper is in the UltiMate-EDP kit's parts bag. If the Black/Red wire was connected to Negative polarity, the Smart Trigger jumper should be on the outer two pins of the PCB standup; if the Black/Red wire was connected to Positive polarity, the Smart Trigger jumper should be on the inner two pins of the PCB standup. See the wiring diagram on pages 16 and 17 for a visual reference of the "+" and "-" jumper positioning. **The Smart Trigger feature is optional.** If the polarity selecting jumper is not used, the loose Green wire may be inserted as needed into one of the two open cavities on the 8-pin harness for connection to a Negative door or Positive door circuit in the vehicle.

Notes and tips for both types of domelight systems: The correct wire will show a polarity change when any of the doors are opened. If the vehicle has delay dome lights, remember to take this into account when testing the wire. If the pin switch is mounted in the metal structure of the vehicle, and the dome light goes out when the switch is removed, suspect a grounding-type dome light system. While the traditional pin switch is mounted in the front door jamb area, also be aware that many vehicles utilize other types of switch devices to operate the interior lights. Some imports have a sliding type of switch and many have the pin or sliding switches in the rear door jamb area. In addition, some vehicles utilize switches in the doors, either connected to the exterior door handles or to the latching mechanism. A vehicle which has the dome lights illuminating when the exterior door handle is lifted is an example of this type of switching system. Also be aware of vehicles which diode-isolate each door. Typically, this is usually encountered with dash displays that indicate individual doors being ajar. The proper wire to connect to in this type of system is the common wire which is routed to the dome light itself.

If domelight supervision or Smart Trigger is not used, one of the following two door trigger wire connections must be used.



Suggested connection points for the White wire

Many European imports have separate left and right side parking lights. When left & right parking lights are on separate circuits, a pair of 6 to 10 amp diodes may be used to connect the White wire to each parking light side, or the domelight supervision wires (Black/Red and Green/Violet) may be used. The White wire is connected to one parking light side, and the Green/Violet to the other side. Connect the Black/Violet wire to constant Positive 12 Volt, and Smart Trigger can not be utilized.

Flashing the headlights is not recommended. The halogen headlights found in modern vehicles are not designed to be rapidly turned on and off, and if connected to the security system, a reduction of their useful life may be noticed. If flashing the headlights is still desired, a relay must be used, since the headlight's current draw exceeds the 7 amp rating of the built-in relay. If flashing headlights and parking lights are desired, use two relays - configure one relay to supply the parking lights and the other relay to supply the headlights.

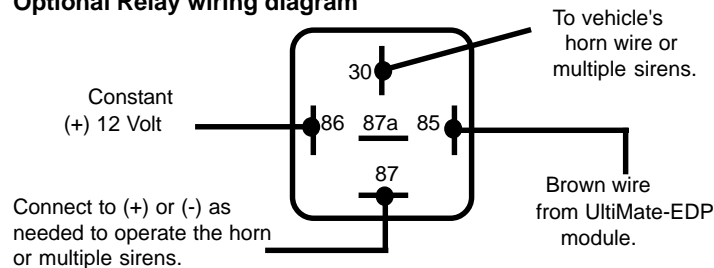
The **Black/Red** and **Green/Violet** wires are provided for domelight supervision, which illuminates the interior lights of the vehicle upon disarming. The Black/Red wire is the input to the UltiMate-EDP control module's built-in domelight supervision relay, and the Green/Violet wire is the output from the relay.

CONNECTION: The polarity of the domelight supervision output must be selected by connecting the Black/Red wire to Positive or Negative. Determine which polarity the vehicle uses to operate the dome light; this is either "Negative switching" or "Positive switching"; the diagrams on the following page explain more on how to determine which type is present.

The proper vehicle wire to connect the Green/Violet wire to, the dome light activation wire, is common to all the door pin switches. The correct wire will

installing multiple optional sirens, an optional SPDT relay is required. The following diagram shows to configure the relay.

Optional Relay wiring diagram



The Optional Electronic Siren: Find a location in the engine compartment away from the extreme heat of the engine and manifold. A suitable location will offer a firm mounting surface, will also allow sound dispersion out of the engine compartment, and not be accessible to a thief. The siren must be pointed downward to avoid moisture collecting inside it and to enhance sound dispersal. When the siren is used Feature #21 must be changed to the "steady" setting.

CONNECTION: Connect the Brown wire directly to the siren's Black wire. The siren's Red wire is then connected to a Constant 12 Volt Positive source. The security system has a provision for this connection, which is located on the control module beside the 8-pin secondary harness connector.

The **White wire** is a Positive 12 Volt output to flash the vehicle's parking lights.

CONNECTION: Connect this wire to the vehicle's Positive 12 Volt parking light circuit, which can usually be found at the following locations: at the headlight switch, at the fuse/junction block, or in the rear body harness in the driver kick panel. Some vehicles, notably Toyota, have a parking light relay which is triggered by a Negative Ground circuit from the headlight switch. The White wire can still be connected directly in these vehicles by finding the parking light circuit after the relay, typically at the Fuse/Junction Block.

The correct wire will show Positive 12 Volts when the headlight switch is in the "Parking Light" and "Head Light" positions. When such a wire is located, also test to ensure that it is non-rheostated: while metering the wire, operate the dash light dimmer control. The correct wire will show no change in voltage when the dimmer is operated. **Do not connect the White wire to a rheostat (dimmer) circuit!** This will backfeed the parking lights through the rheostat or illumination control module, and possibly cause damage to the vehicle or security system control unit.

text continues on Page 18

UltiMate-EDP

Wiring Diagram

The UltiMate-EDP has recessed wiring harness ports on all four sides, as this single cut-away overhead view shows. All control module ports and all main wiring is shown here. In some cases the wiring diagram references optional accessories, which are not included with the UltiMate-EDP, but available and specifically designed to be integrated with the UltiMate-EDP.

Note: The 8-pin Secondary Wiring Harness shown is that which comes with the UltiMate-EDP. A universal harness is also available which is prewired with a Violet (+) door trigger wire and a Green (-) door trigger wire, both already inserted.

