



RS-320-EDP

Deluxe Keyless Entry & Remote Start

Operation Guide

v2 Sept 4, 2009

Back Cover

Color cover is in a separate file.



Temporary cover. Color cover is in a separate file.

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Programmable Features Matrix

User Feature Programming: Ignition on, off, press valet 5 times					
# Feature	Lock Button	Unlock button	Trunk button	"START" button	
1 Engine Run Time	10 min	5 min	15 min	20 min	
2 Steady/Flashing lights for RS	Steady	Flashing			
3 Horn Honk Volume	Low	Hi	On Demand	OFF	
4 Pulse Horn/Steady Siren	Pulsed Lo	Pulsed Med	Pulse Hi	Steady Siren	
5 Doors Lock w/ Ign. ON	ON	OFF			
6 Doors Unlock w/ Ign. OFF	ON	OFF			
Installer Feature Programming: Ignition on, off, press valet 10 times					
1 RS Activation	1 press	2 presses	3 presses	4 presses	
	Tachless Hi	Tachless Lo	Tach Wire	Datatach	
2 Engine Detection	Crank Only (press Lock + Unlock)				
3 Gas or Diesel Engine	Gas	Diesel			
	Starter	Pulse After Start	Ign/Status	Accessory	
4 Sat. Port Green Wire	0.7 Sec	1.00 Sec	1.5 Sec	2.25 Sec	
5 Crank Time	0.8 Sec	3 sec	Double Unlock	Total Closure	
6 Doorlock Outputs	OFF	1 min	2 min	3 min	
7 Turbo Timer	ON	OFF			
8 Manual Transmission RS	ON	OFF			

This device complies with FCC Rules part 15. Operation is subject to the following two conditions, (1) This device may not cause harmful interference and, (2) This device must accept any interference that may be received, including interference that may cause undesired operation.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Installer Programmable Features (cont'd)

Feature #6 Doorlocking Output Functions

0.8 Second Outputs (press "lock" button to program) - **DEFAULT**
3 Second Outputs (press "unlock" button to program)
Double 0.8 Sec Unlock Output (press "trunk" button to program)
Total Closure Lock Output (press "start" button to program)
This single feature gives the installer several needed options, to match the system's doorlocking outputs to suit different vehicle requirements.
0.8 Second Outputs on both Lock and Unlock outputs.
3 Second Outputs on both Lock and Unlock outputs.
Double 0.8 Sec Unlock Output w/ single 0.8 sec Lock output.
Total Closure Lock Output gives a 28 second Lock output and a 0.8 second unlock output.

Feature #7 Turbo Timer

Off (press "lock" button to program) - **DEFAULT**

Run 1 Minute (press "unlock" button to program)

Run 2 Minutes (press "trunk" button to program)

Run 3 Minutes (press "start" button to program)

This feature when turned on configures the system to automatically keep the engine running briefly after it is turned off. This operation is designed specifically for vehicles having turbocharged engines. This feature should only be programmed by the installer, and the operation of this feature depends on the correct connection of the neutral safety wire to the vehicle's parking brake. Please refer to the "Black/White wire" in the installation manual for the proper connection of this important wire.

Feature #8 Manual Transmission Remote Start

On (press "lock" button to program)

Off (press "unlock" button to program) - **DEFAULT**

Enabling this feature requires a "setup" procedure to be performed that ensures the transmission is in neutral before remote start can be performed. See page 8 for more information.

Introduction

Congratulations on your purchase of this convenience system by Omega Research & Development, Inc., a world leader in vehicle security and convenience products since 1975. This system is designed to offer ease of use and its modular design allows for many features to be customizable to suit your needs.

Please note that this manual is written to reflect the full capability of this system though some features may not be available to you because of vehicle limitations and/or chosen options at the time of installation. It is also written to reflect the operations in their default configurations.

This system has three principal user components that you should familiarize yourself with:

The **Status Lights** which indicate the current system status and helps in troubleshooting failed remote start attempts as well as in customizing the programmable features. The specific operations of the lights are described on **page 8**.

The **Valet Switch** is used to access transmitter and feature programming. It is also used to place the system in valet mode which temporarily bypasses the remote start feature. See "Using the Valet Switch" on **page 8**.

The remote **Transmitters** are used to operate the system on a daily basis. This system is capable of being operated by up to 4 different transmitters. Each one has 4 different buttons which are labeled to indicate their primary function.

The RS-320-EDP is also compatible with our ECHO 2-way upgrade kits. This popular upgrade gives you confirmation to the systems operations which are displayed on a LCD screen for easy reference. ECHO upgrade kits are available in a variety of styles from standard black & white LCD to a touch screen, color LCD version! Contact your dealer or visit www.caralarm.com for more info.

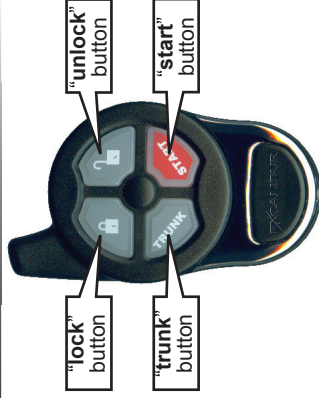
The Transmitter

Transmitter part numbers:

147-03 text buttons
147-03B icon buttons
Call your dealer or visit
www.caralarm.com to order
replacement transmitters.

Transmitter battery replacement:

Remove the small screw from the lower back case, and separate the transmitter halves. Replace the CR2032 battery (or with 2 CR2016 batteries) and reassemble the transmitter case.



This system is ECHO compatible which means you can upgrade it at anytime to have 2-way capability and greater range. It's a simple upgrade that only takes minutes so talk to your dealer about upgrading with ECHO TECHNOLOGY today!!

Transmitter Functions Reference Guide

LOCK: Press and release the "LOCK" button.



- THE DOORS WILL LOCK, THE PARKING LIGHTS WILL FLASH, AND THE HORN WILL HONK ONCE.

UNLOCK: Press and release the "UNLOCK" button.



- THE DOORS WILL UNLOCK, THE PARKING LIGHTS WILL FLASH TWICE THEN ILLUMINATE FOR 30 SECONDS, AND THE HORN WILL HONK TWICE.

Installer Programmable Features (cont'd)

make sure this function is supported by the Databus Interface module. "Crank Only" AKA "blind start" is similar to the "Tachless" settings however, it only makes one start attempt and does not monitor engine running conditions. This is useful for many "push-to-start" vehicles.

Feature #3 Gasoline Or Diesel Engine

Gasoline (press "lock" button to program) - **DEFAULT**
Diesel (press "unlock" button to program)

This feature changes the system's timing of the ignition and starter output sequence for remotely starting vehicles with gas or diesel engines. When set for gasoline, the starter output will occur 3 seconds after the ignitions turn on. Also, when the system is in "Tachless" mode, the engine running status will be determined 10 seconds after cranking. When set for diesel, the starter output will occur 20 seconds after the ignitions turn on to allow for glow plug warming. Also, when the system is running in "Tachless" mode, the engine running status will be determined 40 seconds after cranking. This allows the vehicle battery(s) to recharge properly and show normal voltage levels due to the heavy drain diesel engines have on the electrical system during cranking.

Feature #4 Satellite Relay Port Green Wire Function

Starter (press "lock" button to program) - **DEFAULT**
Pulse After Engine Start (press "unlock" button to program)
Ignition/Status Output (press "trunk" button to program)
Accessory (press "start" button to program)

This feature changes the operation of the Green wire (negative) on the satellite relay port. This gives you the flexibility to accommodate certain vehicles that require any out-of-the-ordinary pulses or remote start timing.

Starter setting operates as a secondary START output. This will have the same pulse timing as the large Violet wire on the main harness.

Pulse After Start setting will give a 0.8 second pulse immediately after the engine starts and is running.

Ignition/Status Output setting will behave like the ignition output except it turns on 1.5 seconds earlier than the primary ignition output.

Accessory setting operates as a secondary ACCESSORY output. This will have the same operation as the large Orange wire on the main harness.

Feature #5 Extended Starter Cranking Time

0.7 Second (press "lock" button to program) - **DEFAULT**

1.00 Second (press "unlock" button to program)

1.5 Seconds (press "trunk" button to program)

2.25 Seconds (press "start" button to program)

This feature determines the crank time of the 1st start attempt when in "Tachless" mode. If the engine doesn't start on the first attempt, it will retry up to 3 more times extending the crank time by an additional 0.2 second with each attempt.

User Programmable Features (cont'd)

Feature #5 Doors Lock With Ignition On

Off (press "unlock" button to program) - **DEFAULT**
On (press "lock" button to program)

This feature configures the system to automatically lock the vehicle's doors every time that the ignition switch is turned on. The following feature #6 controls the automatic unlocking operations.

Feature #6 Doors Unlock With Ignition Off

Off (press "unlock" button to program) - **DEFAULT**
On (press "lock" button to program)

Similar to the previous locking feature, except this feature controls the unlock operation when the ignition is turned off.

Installer Programmable Features

This group of Installer Programmable Features are all accessed as a group in the second level of features' programming. These features have a direct affect upon the system's operations related to the installation and vehicle type **AND SHOULD ONLY BE CHANGED BY THE INSTALLER!!**

Feature #1 Remote Start Activation

- 1 button presses** (press "lock" button to program)
- 2 button presses** (press "unlock" button to program) - **DEFAULT**
- 3 button presses** (press "trunk" button to program)
- 4 button presses** (press "start" button to program)

This feature allows you to choose the number of button presses AND pulses required on the White/Blue activation wire to activate the remote start feature. All of the settings must occur within a 5 second window of the previous pulse.

Feature #2 Engine Detection Method

- Tachless Hi** (press "lock" button to program) - **DEFAULT**
- Tachless Lo** (press "unlock" button to program)
- Tach Wire** (press "trunk" button to program)
- Data Tach** (press "start" button to program)
- Crank Only** (press "lock" & "unlock" to program)

This feature selects the method in which the remote start monitors the engine's running condition in remote start mode.

"**Tachless Hi**" sensitivity mode has an associated base starter output time duration (see installer feature #5) and monitors the vehicle's voltage level to determine if the engine is running. This setting looks for a voltage increase of 0.3v after cranking.

"**Tachless Lo**" sensitivity mode operates like the "Tachless Hi" setting but looks for a voltage increase of 0.5v after cranking.

"**Tach Wire**" Before this setting is programmed, refer to the "Violet/White wire" section of the installation manual for proper wiring connection and the Tach Learn Procedure. It will crank the engine for up to 3 seconds or until a tach signal is detected.

"**Data Tach**" mode operates just like the "Tach Wire" setting except it takes its reading from the D2D data port instead of using the Violet/White wire. Before using,

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Controlling The System (cont'd)

TRUNK RELEASE/CHANNEL 2: Press and hold the "TRUNK" button for 3 seconds.



- THE TRUNK WILL OPEN, THE DOORS WILL UNLOCK, THE PARKING LIGHTS WILL FLASH TWICE THEN ILLUMINATE FOR 30 SECONDS, AND THE HORN WILL HONK TWICE.
- **SILENT LOCK/UNLOCK:** PRESS THIS BUTTON TWICE WITHIN 5 SECONDS TO LOCK OR UNLOCK THE DOORS WITHOUT HORN HONKS.

REMOTE START: Press and release the "START" button twice. (see installer feature #1 for other options)



- THE PARKING LIGHTS WILL FLASH AND THE STATUS LIGHTS WILL FLASH RAPIDLY.
- THE IGNITION WILL TURN ON AND THE SYSTEM WILL START THE ENGINE.
- WHEN THE ENGINE IS RUNNING, THE STATUS LIGHTS WILL FLASH SLOW AND THE PARKING LIGHTS WILL STAY ON AS LONG AS REMOTE START MODE IS ACTIVE.

- If the engine stalls, the system will make up to 3 more attempts.
- Each time you park your vehicle, set the climate controls to give you the desired interior temperature when you use the remote start.
- The engine will run for the preset run time (see user feature #1).
- **Run Time Extender:** Press the "START" button one time while in remote start mode to restart the engine run timer.

NOTE: This can only be used once per remote start cycle. If the system has an ECHO 2-way upgrade, you will get "run time expiration" warning chirps 1 minute before the timer ends.

- If you decide not to drive your vehicle, you can turn off the remote start using the same method to turn it on (keep in mind that the first press is considered the **Run Time Extender**).
- Upon entering the vehicle during remote start mode, turn the ignition key to the "ON/RUN" position (**NOT START!!**). When you press the brake pedal, the remote start will turn off.

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Controlling The System (cont'd)

Panic Mode: Press & Hold the LOCK or UNLOCK button for 3 seconds.

- THE HORN WILL SOUND, THE PARKING LIGHTS WILL FLASH AND THE DOORS WILL LOCK OR UNLOCK, DEPENDING ON THE TRANSMITTER BUTTON USED.
- TO DEACTIVATE PANIC, SIMPLY PRESS EITHER THE LOCK OR UNLOCK BUTTON AGAIN.



Auxiliary Functions 1-4:

The actual operation of these functions will vary from car to car. They are designed to operate extra vehicle functions like automatic sliding doors or motorized hatches. Aux 1-4 are only available on certain vehicles when this system is integrated with the vehicle's data network. Consult with your installing dealer to find out if any of these functions are available for your vehicle. If so, confirm each operation with the transmitter and write each function in the blank space provided below for later reference.

- **Auxiliary 1 Function** (): To activate this function, press and release the "trunk" and "start" buttons simultaneously.
- **Auxiliary 2 Function** (): To activate this function, press and release the "lock" and "trunk" buttons simultaneously.
- **Auxiliary 3 Function** (): To activate this function, press and release the "unlock" and "start" buttons simultaneously.
- **Auxiliary 4 Function** (): To activate this function, press and release the "unlock" and "trunk" buttons simultaneously.

Programming Features (cont'd)

~ The horn will honk, the status lights, and the parking lights will flash equal to the selected setting.

- Step 5** If you wish to change more features, repeat steps 3 & 4 at this time.
Step 6 To exit programming, turn the ignition key "ON" then "OFF". Or, you can wait 10 seconds for programming mode to expire.

User Programmable Features

This group of User Programmable Features are all accessed as a group in the first level of features' programming. These features have a direct affect upon the system's operations, so the programming and operation of each are described.

Feature #1 Remote Start Run Time

- 10 Minutes** (press "lock" button to program) - **DEFAULT**
- 5 Minutes** (press "unlock" button to program)
- 15 Minutes** (press "trunk" button to program)
- 20 Minutes** (press "start" button to program)

This feature sets the period of time that the engine will run after being remotely started. If the engine is not stopped by controller/transmitter command or a safety circuit violation, the engine will automatically stop upon the expiration of the selected time period. **Caution: The remote engine starting feature should NEVER be used when the vehicle is parked in an enclosed structure or garage.**

Feature #2 Steady/Flashing Lights During Remote Start Steady

- (press "lock" button to program) - **DEFAULT**
- Flashing** (press "unlock" button to program)

This Feature configures the operation of the vehicle's parking lights during the remote start operation. The default setting turns on the parking lights during remote start; the other setting flashes the parking lights on and off during remote start.

Feature #3 Confirmation Chirp Function & Volume

- Low** (press "lock" button to program) - **DEFAULT**
- High** (press "unlock" button to program)
- On Demand / High** (press "trunk" button to program)
- OFF (no chirps)** (press "start" button to program)

This feature allows the choice of two different volume levels of the system's confirmation chirps, the you can hear and choose the setting with the best chirp volume as you select each option. The "On Demand" setting allows you to lock and unlock the doors without chirps. Similar to OEM keyless entry, pressing either function a 2nd time, will produce confirmation chirps.

Feature #4 Steady Siren or Pulsed Horn

- Pulsed Horn Low** (press "lock" button to program) - **DEFAULT**
- Pulsed Horn Medium** (press "unlock" button to program)
- Pulsed Horn High** (press "trunk" button to program)
- Steady Siren** (press "start" button to program)

This feature changes only the audible output, in three different pulse timings, which allow a degree of customizing of the horn's sound during panic mode. The Steady Siren setting is exactly that - a steady output for an optional electronic siren.

Programming Transmitters

Standard Programming: Using this method to program additional or replacement transmitters does not turn on or otherwise affect the Unauthorized Transmitter Alert (UTA) feature.

Step 1 Have all transmitters which are to operate the system at hand. Then, turn the ignition "on".

Step 2 Within 5 seconds of turning on the ignition, press the Valet Switch 5 times. The horn will briefly sound, confirming that for the next 10 seconds the system is ready to learn a transmitter/controller code. To enter a code, simply press and release the "lock" button. When the first code is learned all existing stored codes will be erased.

Step 3 Press the "lock" button on each remaining transmitter one at a time. The system will chirp the horn once to confirm that each was learned. The transmitter's other three button's functions will automatically be assigned when the "lock" button is learned. If a code is not received within a 10 second period, the learning process will automatically terminate, as indicated by another horn honk.

If the Unauthorized Transmitter Alert feature is on, programming a transmitter to the system will activate the "UTA" warning and the extended Status Light indication. For the next 48 hours, the horn will sound a brief series of chirps every time the vehicle's ignition key is turned on.

Special Programming procedure to turn On the UTA feature: Using this method to program transmitters or optional controllers, and to turn on the Unauthorized Transmitter Alert feature.

Follow the same steps as the Standard Programming, but on any transmitter/controller being programmed instead of pressing the "lock" button, press the "lock" and the "unlock" buttons together. This action turns on the Unauthorized Transmitter Alert feature and at the same time programs the transmitter or controller to operate the system.

Once the Unauthorized Transmitter Alert feature is turned on, the warning will sound for 48 hours after any transmitter programming, including the programming session which was used to turn it on. This feature can only be turned off again by sending the system back to Omega for a reset.

Programming Features

Step 1 Turn the ignition key "ON", then "OFF"

Step 2 Within 5 seconds of step 1, press the valet switch 5 times to access user features (10 times to access installer features).

~ The horn will honk and the status light will turn on.

Step 3 Within 10 seconds of step 2, press the valet switch the number of times corresponding with the desired feature's number.

~ The horn will honk, the status lights, and the parking lights will flash equal to the selected feature.

Step 4 Change the feature by pressing the transmitter button that corresponds with the desired setting.

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Other Remote Start Features

LOW BATTERY/LOW TEMP AUTOMATIC STARTING

This feature will automatically start the engine should the vehicle battery drop below 11 volts or the interior temperature drop to 15 (or 32) degrees Fahrenheit. This feature is very useful when the vehicle is parked for a long period of time in cold climates. You must activate these features each time you park your car and wish to use them.

• Turn the ignition switch "on", then "off" (engine not running), and within 7 seconds press the valet switch twice. If there is a 2 second delay without additional valet button presses, the horn will honk 3 times activating low voltage start mode.

• To activate low temp starting, enter low voltage start mode as described above but, before the horn honks, press the valet switch 1 time (15 degrees) or 2 times (32 degrees) within 5 seconds. The horn will honk to confirm your selection.

NOTE: When low temp start mode is activated, low voltage start is also activated. These features will operate once every two hours until the ignition key is turned "ON".

TURBO TIMER FEATURE

It is typically recommended that vehicles equipped with turbocharged engines allow the engine to idle for after driving to cool the turbocharger. When this Installer Programmable Feature is enabled, the system will automatically keep the engine running as follows:

- With the engine running, hold the brake pedal and engage the parking brake. When the brake pedal is released, the system will keep the engine running for the programmed time (1, 2, or 3 minutes), and then automatically turn it off.
- The system may be locked while the engine is running. Turbo Timer can be prevented from engaging, or "bypassed" if desired, by turning the engine off before engaging the parking brake, or if it's already engaged, step on the brake pedal to turn the engine off.

PIT-STOP FEATURE

This feature allows you to leave your engine running for making quick errands. To use this feature, have the engine running normally from the ignition switch and your foot off the brake pedal. Press the Valet Switch twice; the parking lights will flash and the horn chirps 5 times. Turn the key off and the engine will remain running for the programmed run time.

MANUAL TRANSMISSION STARTING

Remote starting with a manual transmission requires a different installation method and installer feature #8 must be turned on. Also, a setup procedure that ensures the transmission was left in neutral must be performed each time you leave your vehicle and intend to use remote start later. Perform these steps:

- 1) With the engine running, hold the brake pedal, apply the parking brake, then release the brake pedal.
- 2) Use the transmitter as if you were activating remote start (default: press START twice). The status light will start to flash slow.
- 3) Turn off the ignition key and exit the vehicle.

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Other Remote Start Features (cont'd)

- 4) Press LOCK on the transmitter. The engine will shut down (unless turbo timer is on) and the status light will flash every 2 seconds to indicate it is ready to be remote started.

NOTE: Manual transmission starting is canceled if you enter the vehicle after performing the setup procedure. During remote starting, you have 20 seconds to turn on the ignition key AFTER opening a door.

Using The Valet Switch

Valet Mode

Valet mode prevents the remote start feature from being activated. It also disables horn honks when locking or unlocking the doors. Valet Mode should be used when you do not wish for remote starting to be operated, such as when you have your vehicle serviced. **To engage Valet Mode:**

- With the system "unlocked", press and hold the Valet Switch for 3 seconds; the Status Light will turn on and stay on to indicate Valet Mode. The horn will honk once and the lights will flash twice. Once in Valet Mode, an attempt to remote start will result in no response. Keep this in mind if remote start stops functioning. While the system is in Valet Mode, the horn will honk once every time the ignition key is turned OFF.
- To turn off Valet Mode, simply press & release the Valet Switch once. The Status Light will turn off.

Emergency Override

If the system is locked, you cannot perform functions like transmitter or feature programming. If you do not have a transmitter to unlock the system, you can perform an emergency override to access the programming functions.

- With the system in a locked state, simply turn the Ignition key to the RUN/ON position and press and release the valet switch once.

The Status Light

The Status Light helps to visually confirm the status of the system and provides a high level of visual deterrence. The Status Light is located in the window mount receiver unit.

Normal System Status

- 1) Off = The remote starter system is off, in standby mode.
- 2) On Constant = The system is in the Valet Mode, with the remote starter system disabled.

Starting System Status

The Status Light also indicates the remote start status:

- 3) Flashing Very Slow (once every 2 seconds): The system is in manual transmission remote start mode and awaiting a remote start command.
- 4) Flashing Slow (once per second): Remote start is on.

The Status Light (cont'd)

- 5) Flashing Fast (after activating remote start): The system is in the process of starting the engine.

Remote Starting Diagnostics

Whenever the system is placed into Valet Mode, the Status Light illuminates solid. However, when this first occurs, the Status Light will flash 1 to 6 flashes before resuming solid illumination. This indicates why the engine stopped running from the last previous remote starting attempt.

- 6) 1 Flash = Programmed run time expired.
- 7) 2 Flashes = Brake was pressed or hood opened.
- 8) 3 Flashes = Engine stalled or bad tach signal.
- 9) 4 Flashes = Received transmitter command to stop.
- 10) 5 Flashes = Gear selector removed from "park".
- 11) 6 Flashes = Low voltage.

Transmitter Protection & Technology

Code Jumping™ Technology

With the proper equipment, it's quite easy for a criminal to "grab" your transmitter code from the air and use it at a later time to gain access to your vehicle contents and potentially your home! Code jumping technology uses a complex algorithm to change the transmitter's codes every time a button is pressed. Only the system in your car has the key to decipher this code and it is not replicable.

Automatic Transmitter Verification™

There is also the potential threat of someone, who has temporary access to your vehicle, programming their own transmitter to your system. For example, a mechanic, car wash attendant, or valet could do so and gather your personal info from any paper work in your vehicle. Then, they could visit your home and help themselves to the contents of your vehicle without any signs of intrusion. Many crimes go unnoticed and people assume they have misplaced their belongings. ATV™ shows you how many transmitters are programmed to your system every time you turn on the ignition key for a 10 second period. Then, you can easily identify if transmitters have been added to your system.

Unauthorized Transmitter Alert™

This feature is a companion to ATV™. With this feature enabled (see "Programming Transmitters" for instructions), UTA™ will warn you with a series of horn honks whenever the ignition key is turned "ON". The warning will occur for a 48 hour period and cannot be disabled during that time period (if it could be, then the thief could disable it!). ATV™ also extends to 90 seconds.