



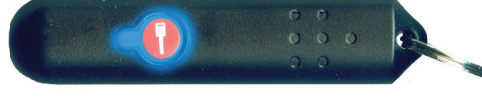
# RS-220-DP

Deluxe Keyless Entry & Remote Start

## Back Cover

Color cover is in a separate file.

## Operation Guide



Temporary cover. Color cover is in a separate file.

## Table Of Contents

|                                               |    |
|-----------------------------------------------|----|
| Introduction.....                             | 3  |
| The Transmitter .....                         | 4  |
| Transmitter Functions Reference Guide .....   | 5  |
| Other Remote Start Features .....             | 6  |
| Low Battery/Low Temp Automatic Starting ..... | 6  |
| Turbo Timer Feature .....                     | 6  |
| Pit-Stop Feature .....                        | 6  |
| Manual Transmission Starting .....            | 7  |
| Using The Valet Switch .....                  | 8  |
| The Status Light .....                        | 8  |
| Programming Transmitters .....                | 10 |
| Programming Features .....                    | 10 |
| User Programmable Features .....              | 11 |
| Installer Programmable Features .....         | 12 |
| Programmable Features Matrix .....            | 15 |

## Programmable Features Matrix

| User Feature Programming: Ignition on, off, press valet 5 times       |                        |                   |               |           |
|-----------------------------------------------------------------------|------------------------|-------------------|---------------|-----------|
| # Feature                                                             | Brake x 1              | Brake x 2         | Brake x 3     | Brake x 4 |
| 1 Engine Run Time                                                     | 10 min                 | 5 min             | 15 min        | 20 min    |
| 2 Steady/Flashing lights for RS                                       | Steady                 | Flashing          |               |           |
| Installer Feature Programming: Ignition on, off, press valet 10 times |                        |                   |               |           |
| 1 RS Activation                                                       | 1 press                | 2 presses         | 3 presses     | 4 presses |
| 2 Engine Detection                                                    | Tachless Hi            | Tachless Lo       | Tach Wire     | Datatach  |
|                                                                       | Crank Only (Brake x 5) |                   |               |           |
| 3 Gas or Diesel Engine                                                | Gas                    | Diesel            |               |           |
| 4 Sat. Port Green Wire                                                | Starter                | Pulse After Start | Ign/Status    | Accessory |
| 5 Crank Time                                                          | 0.7 Sec                | 1.00 Sec          | 1.5 Sec       | 2.25 Sec  |
| 6 Unlock Output                                                       | 0.8 Sec                | 3 sec             | Double Unlock |           |
| 7 Turbo Timer                                                         | OFF                    | 1 min             | 2 min         | 3 min     |

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 the brake pedal 1 time to program) - **DEFAULT**

**3 Second Outputs** (press the brake pedal 2 times to program)

**Double 0.8 Sec Unlock** (press the brake pedal 3 times 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.

### Feature #7 Turbo Timer

**Off** (press the brake pedal 1 time to program) - **DEFAULT**

**Run 1 Minute** (press the brake pedal 2 times to program)

**Run 2 Minutes** (press the brake pedal 3 times to program)

**Run 3 Minutes** (press the brake pedal 4 times 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.

## 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.

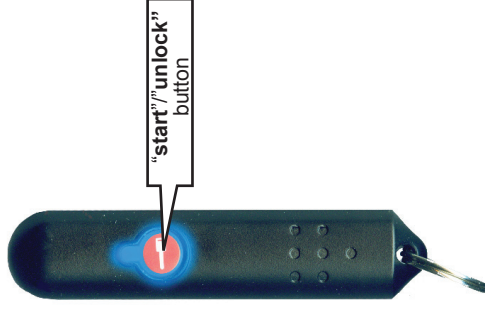
This system has three principal user components that you should familiarize yourself with:

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 transmitter has 1 button.

## The Transmitter



**Transmitter part number: 111-03**

*Call your dealer or visit [www.caralarm.com](http://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 **27A** (or MN27) battery and reassemble the transmitter case.

## Installer Programmable Features (cont'd)

### Feature #3 Gasoline Or Diesel Engine

**Gasoline** (press the brake pedal 1 time to program) - **DEFAULT**

**Diesel** (press the brake pedal 2 times 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 the brake pedal 1 time to program) - **DEFAULT**

**Pulse After Engine Start**

(press the brake pedal 2 times to program)

**Ignition/Status Output**

(press the brake pedal 3 times to program)

**Accessory**

(press the brake pedal 4 times 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 the brake pedal 1 time to program) - **DEFAULT**

**1.00 Second** (press the brake pedal 2 times to program)

**1.5 Seconds** (press the brake pedal 3 times to program)

**2.25 Seconds** (press the brake pedal 4 times 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.

## 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 the brake pedal 1 time to program)
  - 2 button presses** (press the brake pedal 2 times to program) - **DEFAULT**
  - 3 button presses** (press the brake pedal 3 times to program)
  - 4 button presses** (press the brake pedal 4 times 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 the brake pedal 1 time to program) - **DEFAULT**
- Tachless Lo** (press the brake pedal 2 times to program)
- Tach Wire** (press the brake pedal 3 times to program)
- Data Tach** (press the brake pedal 4 times to program)
- Crank Only** (press the brake pedal 5 times 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, 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.

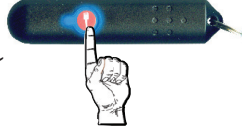
## Transmitter Functions Reference Guide

**UNLOCK:** Press and hold the button for 3 seconds.



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

**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 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.

## 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. The system is now in low voltage start mode.
- To activate low temp starting, enter low voltage start mode as described above but, within 5 seconds of entering low voltage mode, press the valet switch 1 time (15 degrees) or 2 times (32 degrees) within 5 seconds.

**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. Turn the key off and the engine will remain running for the programmed run time.

## 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 the brake pedal 1 time to program) - **DEFAULT**

**5 Minutes** (press the brake pedal 2 times to program)

**15 Minutes** (press the brake pedal 3 times to program)

**20 Minutes** (press the brake pedal 4 times 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 the brake pedal 1 time to program) - **DEFAULT**

**Flashing** (press the brake pedal 2 times 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.

## 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 status lights and parking lights will illuminate, 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 button. When the first code is learned all existing stored codes will be erased.
- Step 3** Press the button on each remaining transmitter one at a time. The system will turn the lights off then back on to confirm that each was learned. The transmitter's other functions will automatically be assigned when the button is learned. If a code is not received within a 10 second period, the learning process will automatically terminate, as indicated by the lights turning off.

## 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 parking lights 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 status lights and the parking lights will flash equal to the selected feature.
- Step 4** Change the feature by pressing the brake pedal the same number of times that corresponds with the desired setting.
- ~ 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. The lights will turn off.

## Other Remote Start Features (cont'd)

### 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.
- 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 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 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.
- To turn off Valet Mode, simply press & release the Valet Switch once. The Status Light will turn off.

## 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 Slow (once per second): Remote start is on.
- 4) 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.

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