

# ***MEGATRONIX***

## **RS 110**

ADD-ON REMOTE STARTER  
TO AFTERMARKET SYSTEM

Installation and Operation Manual



***MEGATRONIX***  
CALIFORNIA, U.S.A.

# RS110 ADD-ON REMOTE CAR STARTER

## For Vehicles Equipped With Automatic Transmission And Fuel Injection Gas or Diesel Engines

### OPERATION INSTRUCTIONS

#### Remote Start

To activate the remote start, press the auxiliary channel button on the transmitter of your existing alarm or keyless entry system for 1 second. The parking lights will flash once, indicating it received the start signal. When the engine starts running, the parking lights will flash two quick flashes every 3 seconds for its 10-minute runtime (or 20-minute runtime if pre-programmed). If the engine fails to start the first time, after 10 seconds, the remote start unit will make two attempts to restart the engine.

When the engine is running in remote start mode, first turn the ignition key to the 'ON' position, then press the brake pedal to disengage the remote start, and now you can proceed with normal driving.

**NOTE:** The hood and all doors must be closed to allow remote start to engage properly.

**NOTE:** Pressing the brake pedal before turning the ignition key to the 'ON' position will cause the remote start to disengage and stop engine.

To remote stop engine running in remote start mode, press the auxiliary channel button on the transmitter of your existing alarm or keyless entry system for 1 second.

#### Keyless Engine Running / Pit Stop Mode

During a stopover, if you wish to leave your vehicle running for 10 minutes (or 20 minutes if pre-programmed) without the ignition key, press the aux. channel button on the transmitter for 3 seconds while the engine is running with the ignition key 'ON', the parking lights will flash once. Turn the ignition key to 'OFF' position, remove the key, and exit the vehicle without pressing the brake pedal. The remote start system will keep the engine running for 10 minutes (or 20 minutes if pre-programmed).

#### Automatic Engine Start Feature

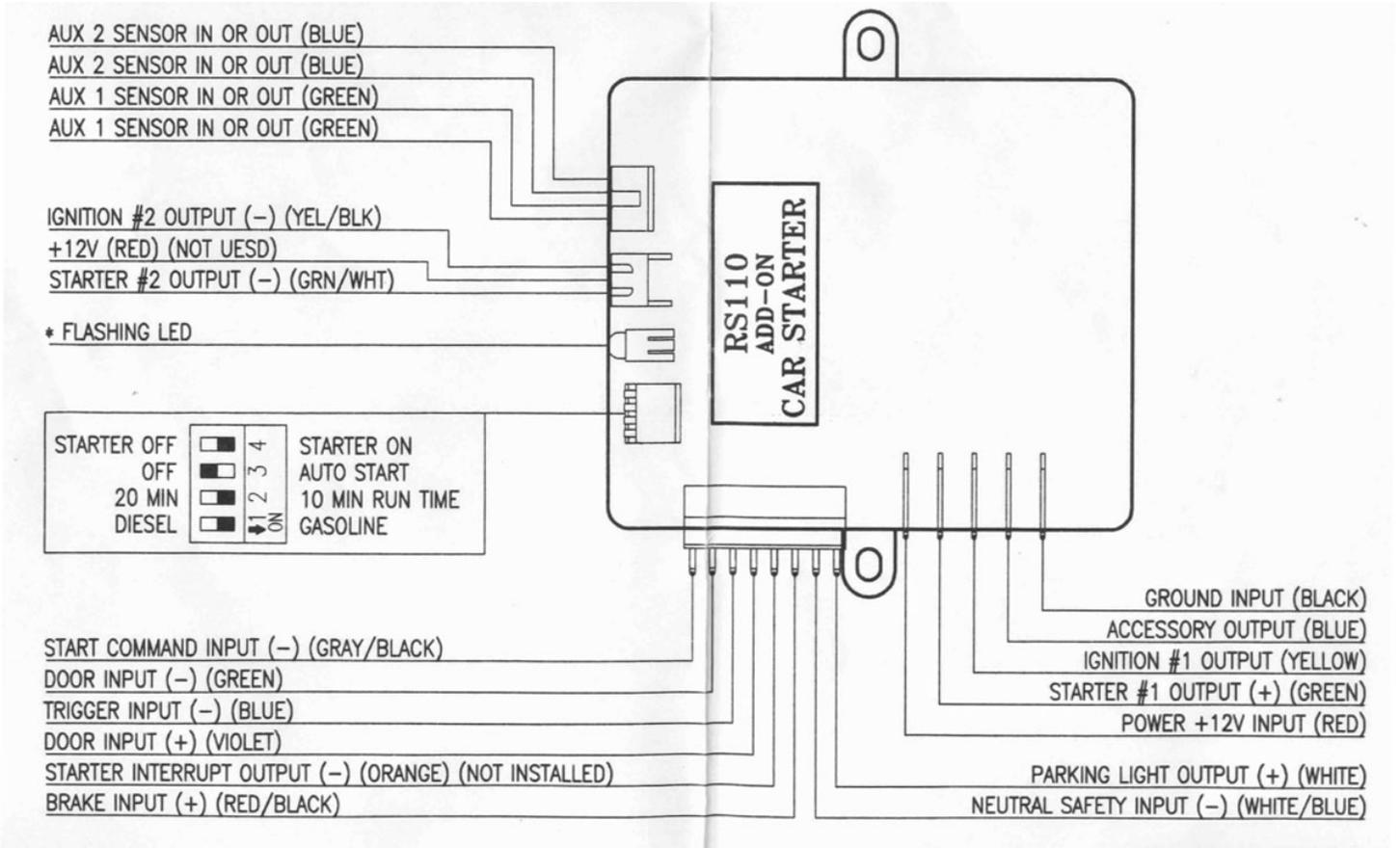
To start the engine automatically every 3 hours five times, press the aux. channel button on the transmitter for 3 seconds while the engine is running with the ignition key 'ON', the parking lights will flash once. Within 7 seconds remove the ignition key and press the brake pedal.

This feature will deactivate when the remote start is activated again or by turning the ignition key to the 'ON' position.

**NOTE:** When the hood is opened in remote start mode, the engine will stop OR when the hood is open, it will not allow the remote start unit to start the engine (use a pin switch and connect to hood trigger input (BLUE)).

**NOTE:** Do not operate the remote start in a closed garage.

# INSTALLATION DIAGRAM



# INSTALLATION INSTRUCTIONS

## 5-PIN HEAVY GAUGE CONNECTOR

### Black Wire: (-) System Ground

This is main ground connection of the alarm module. Make this connection to a solid section of the vehicle frame. Do not connect this wire to any existing ground wires supplied by the factory wire loom; make the connection to the vehicle's frame directly.

### Blue Wire: (+) Accessory Output

Connect to the accessory wire in the vehicle that powers the climate control system.

An accessory wire will show + 12 volts when the ignition switch is turned to the "ACCESSORY" or "ON" and "RUN" positions, and will show 0 Volts when the key is turned to the "OFF" and "START" or "CRANK" position. There will often be more than one accessory wire in the ignition harness. The correct accessory wire will power the vehicle's climate control system. Some vehicle may have separate wires for the blower motor and the air conditioning compressor. In such cases, it will be necessary to add a relay to power the second accessory wire.

### Yellow Wire: (+) Ignition 1 Output

Connect to the ignition 1 wire from the ignition switch. The ignition wire should receive "12 volts" when the ignition key is in the "ON" or "RUN" and "START" or "CRANK" position. When the ignition is turned "OFF" the ignition wire should receive "0" voltage. **The YELLOW wire must be connected.**

### Green Wire: (+) Starter 1 Output

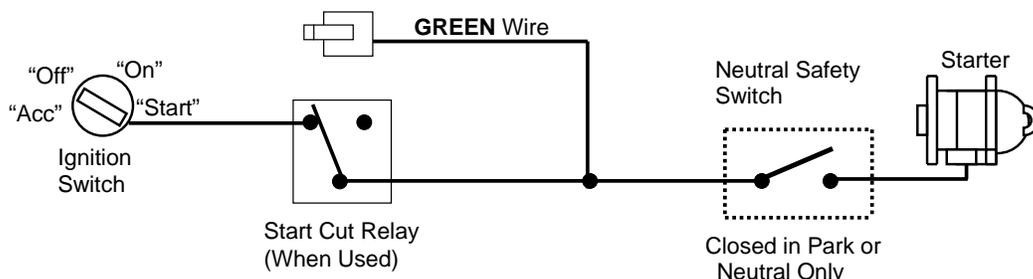
Careful consideration for the connection of this wire must be made to prevent the vehicle from starting while in gear. Understanding the difference between a mechanical and an electrical Neutral Start Switch will allow you to properly identify the circuit and select the correct installation method. In addition, you will realize why the connection of the safety wire is required for all mechanical switch configurations.

Failure to make this connection properly can result in personal injury and property damage.

In all installations, it is the responsibility of the installing technician to test the remote start unit and assure that the vehicle cannot start via RF control in any gear selection other than park or neutral.

In both mechanical and electrical neutral start switch configurations, the connection of the GREEN wire will be made to the low current start solenoid wire of the ignition switch harness. This wire has +12 volts when the ignition switch is turned to the "START" (CRANK) position only. This wire has 0 volts in all other ignition switch positions.

**NOTE:** This wire must be connected to the vehicle side of the starter cut relay (when used). For the electrical neutral switch configuration, this connection must be made between the starter inhibit relay (when used) and the neutral safety switch as shown in the following diagram.



Failure to connect this wire to the ignition switch side of the neutral safety switch can result in personal injury and property damage. SEE NEUTRAL START SAFETY TEST FOR FURTHER DETAILS.

### **Red Wire: (+) Power 12Volt Input**

Prior to connecting this wire, do not place the fuse until the satellite has been plugged into the control module. This wire is the source of current for all the circuits the relay satellite will energize. It must be connected to a high current source. Since the factory supplies (+) 12V to the key switch that is used to operate the motor, it is recommended that this wire be connected there.

### **6-PIN WHITE CONNECTOR**

### **Gray / Black Wire: (-) Start Command Input**

This wire is the input wire to turn on the remote starter. Connect the unused negative auxiliary output wire from your alarm or keyless entry system to this wire. The wire requires a 1 second ground pulse signal to activate the remote starter.

### **Green Wire: (-) Door Input**

This wire is the ground trigger input wire for negative door pin switch and prevents starting if the doors are open. This wire is the connection for "grounding" type factory door pins. Locate the "common wire" that connects the door pin switches. Make the connection of the GREEN wire here.

### **Blue Wire: (-) Trigger Input**

This wire is the ground trigger input wire for hood pin switch and prevents starting if the hood is open.

### **Purple Wire: (+) Door Input**

This wire is the positive trigger input wire for positive door pin switch and prevents starting if the doors are open. This wire is the connection for "positive" type factory door pins (typically FORD). Locate the "common wire" for all door pins and make the connection of the VIOLET wire here.

### **Orange Wire: (-) Ground While Running Output**

This wire provides a 200mA (-) ground output that becomes active before the remote start unit initializes and remains grounded while running. It can be used to provide the ground to turn on a transponder interface module to bypass the factory immobilizer system found on most vehicles allowing the vehicle to be remote started without the key being in the actual vehicle ignition. It can also be used to turn on an optional electronic device such as a window roll up module (Relay may be required).

### **Red / Black Wire: (+) Brake Input**

This wire provides an instant shutdown for the remote start, whenever it gets +12volts. If the brake lights switch in the vehicle switches +12 volts to the brake light circuit, connect this wire to the output side of the brake switch. This will allow the remote start to shut down if an attempt is made to operate the vehicle without the key while running under the control of the remote start. In most vehicles, in order to shift gear, the brake pedal must be depressed. The brake input will in turn cause the remote start unit to shut off.

### **White / Blue Wire: (-) Neutral Safety Input**

When the WHITE/BLUE wire is grounded, the remote start unit is operable. When this wire is open from ground, the remote start is disabled.

1. The optional "remote start toggle switch" can be added on to temporarily disable the Remote Start Device, it can prevent the vehicle from being remote started accidentally. This feature is useful if the vehicle is being serviced or stored in an enclosed area. To disable the remote start, move the optional remote start enable toggle switch to the OFF position. To enable the remote start, move the optional remote start enable toggle switch to the ON position.

- If needed, this wire can connect to the PARK/NEUTRAL switch in the vehicle. (See TESTING YOUR INSTALLATION).

### White Wire: (+) Parking Light Output (12V 10A)

Connect the WHITE wire to the parking light wire coming from the headlight switch. Do not connect the WHITE wire to the dashboard lighting dimmer switch. (Damage to the dimmer will result). The limitation of the WHITE wire is 10 AMP max. Do not exceed this limit or damage to the alarm and parking relay will result.

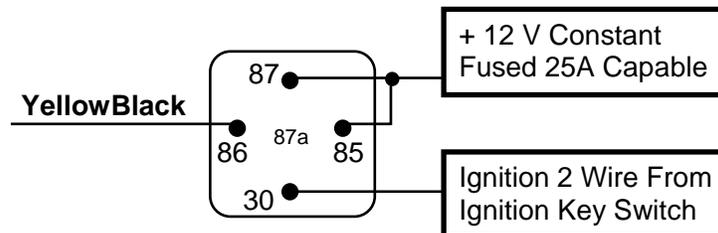
### 3-PIN RED CONNECTOR

#### Yellow / Black Wire: (-) 200ma Ignition 2 Output

This wire provides a 200mA (-) ground output that becomes active before the remote start unit initializes and remains grounded while running.

Some newer vehicles use a 2nd ignition wire which is required to start and keep the vehicle's engine running. If this is the case, wire a SPDT automotive 30/40 amp relay (not supplied) as shown:

**NOTE:** Do not connect any vehicle circuits together, they are isolated for a reason.



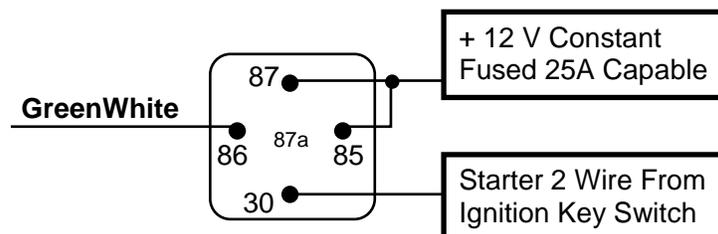
**NOTE:** The output on this wire is negative. To convert to positive polarity another relay must be used between this above relay and the ignition 2 wire from the vehicle as shown:

#### Green / White Wire: (-) 200ma Starter 2 Output

This wire provides a 200mA (-) ground output that becomes active for 1 second after the remote start unit initializes.

Some newer vehicles use a 2nd starter wire which is required to start engine. If this is the case, wire an SPDT automotive 30/40 amp relay (not supplied) as shown:

**Note:** Do not connect any vehicle circuits together, they are isolated for a reason.



**Note:** The output on this wire is negative. To convert to positive polarity another relay must be used between this above relay and the ignition 2 wire from the vehicle as shown:

### AUXILIARY SENSOR INPUTS CONNECTOR

The system is designed to allow for remote starting the vehicle and bypassing the aftermarket alarms sensor(s). This will prevent the aftermarket alarm from being triggered when the remote start module is engaged. Most alarms are equipped with a shock impact sensor, but might also be equipped with a second sensor such as a glass, radar, or tilt sensor.

The green wires are for the alarm's first sensor (usually a shock sensor. Connect the sensors pre-warning and full trigger wires here. The blue wires are for the alarm's second sensor (usually a glass, radar, or tilt sensor). Connect the sensors pre-warning and full trigger wires here. The sensors should not be operational while vehicle is remote started.

## SETTING DIP SWITCHES

The unit has four programmable features that can be set via the dip switches on the side of the unit.

DIP Switch 1: Gasoline or diesel engine (To determine vehicle engine type)

DIP Switch 2: 10-minute runtime or 20-minute runtime (How long to run remote start unit)

DIP Switch 3: Automatic starting on or off (Every 3 hours five times)

DIP Switch 4: Starter module on or off (Used for servicing vehicle to prevent unwanted starting)

## LED DIAGNOSTICS

The LED on the unit provides feedback if a remote start was attempted, but not successful:

1x Flash: The WHITE/BLUE neutral safety input is not grounded.

2x Flash: The BLUE trigger input is seeing ground.

3x Flash: The GREEN door input is seeing ground and/or the PURPLE door input is seeing positive.

4x Flash: The RED/BLACK brake input is seeing positive.

## TESTING YOUR INSTALLATION

**CAUTION!** The follow procedure must be performed after the installation of the Remote Start Device. It is the responsibility of the installing technician to complete these tests. Failure to test the unit in the following manner may result in personal injury, property damage, or both.

1. Test the BRAKE shutdown circuit: With the vehicle in park (P), start the vehicle using the remote transmitter. Once the engine is running, press the brake pedal, the vehicle should shut down immediately. If the vehicle continues to run, check the brake input wire (RED/BLACK) connection.
2. Test the HOOD PIN shutdown circuit: Start the vehicle using the remote transmitter. Once the engine is running, pull the hood release and raise the hood. The vehicle should shut down immediately. If the vehicle continues to run, check the hood trigger input wire (BLUE) connection.

## Neutral Start Safety Test

1. Set the vehicle parking brake.
2. Block the drive wheels to prevent vehicle movement.
3. Sit in the vehicle, turn the ignition switch to "ON" or "RUN" position, but do not start the engine.
4. Step on the brake pedal and shift the gear selector into "DRIVE" (D).
5. Put your foot over the brake pedal but do not press down on it. Be ready to step on the brake to shut down the Remote Start Device.
6. Start the vehicle using remote transmitter. If the starter does not engage, the test is complete.

If the starter engages, immediately step on the brake pedal to shut down the system, recheck your GREEN wire (starter output wire) connection. The GREEN heavy-gauge wire must be connected to the ignition switch side of the Neutral Start Switch. If the vehicle you are working on does not have an Electrical Neutral Safety Switch, it will be necessary to reconfigure the remote starts wiring to accommodate this vehicle. The information concerning the Mechanical Neutral Safety Switch provided below will help you to determine if the vehicle you are working on has this type of safety switch and will provide alternate wiring methods to accommodate this situation.

## Mechanical Neutral Safety Switch

Mechanical neutral safety switch configurations differ slightly in that they do not offer the same level of safety when installing a remote start device. Often when the ignition switch is turned off while the

gear selector is in any position other than park or neutral, the mechanical function will not allow the key to be turned to the start position or be removed from the ignition cylinder. This configuration prevents mechanical operation while the vehicle is in gear but offers no consideration for electrical operation. Because of this potential problem, this installation requires the additional connection of a safety wire from the remote start device to the vehicle PARK/NEUTRAL ECM input or the vehicle key in sensor. This connection will prevent remote start operation if the key is left in the ignition switch regardless of the gear selector position.

### Park / Neutral ECM Input

The Park / Neutral ECM input are the preferred method of installation. This not only maintains the integrity of the factory circuit, it is also the easiest to install. Providing the vehicle you are working on have this ECM input.

The installation required for this application (shown below), indicates in the slight reconfiguration of the control switch wiring. Shown is a typical GM Park/Neutral ECM input circuit. To connect the Remote Start unit to the GM Park/Neutral ECM input:

1. Locate the Orange/Black reference wire in the "C2" connector found at the ECM in GM B Body vehicles or locate the equivalent reference wire in the vehicle you are installing the remote start in.
2. Connect the WHITE/BLUE neutral safety input wire to this reference wire.

NOTE: If the optional remote starts enable toggle switch is installed, connect the one side the enable switch to this reference wire, and connect the other side of the enable switch to the WHITE/BLUE neutral safety input wire of the remote start unit.

The reference diagram below shows a typical GM B Body ECM reference wire and how it should be connected to the remote starter.

