

AUTOCOMMAND® OEM SERIES

Remote Control Car Starter Installation Manual for Models 28624, 28628

DesignTech International, Inc. • 7955 Cameron Brown Court • Springfield, Virginia 22153 USA • www.designtech-intl.com • 703-866-2000 or 800-337-4468

PLEASE READ COMPLETELY BEFORE BEGINNING

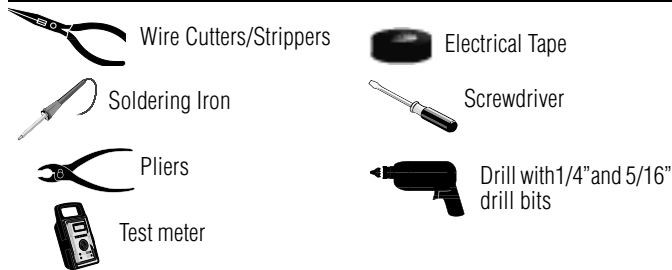
Congratulations on your purchase of the AutoCommand® OEM Series Remote Car Starter. The AutoCommand® OEM Series Remote Car Starter system allows you to start the car by remote control from the comfort of your home or office in order to cool it down in the summer or heat it up in the winter.

AutoCommand® OEM Series is for **automatic transmission/fuel injected vehicles only**. It is an extremely sophisticated system with multiple built-in safety and security features.

AutoCommand® OEM Series Car Starter:

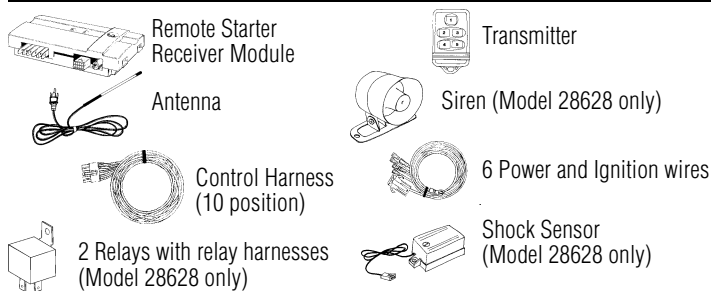
- Will start your car by remote control, and run the heater, defroster, or air conditioner to warm up or cool down the car.
- Is designed to start the car if it is in park, and only if the hood is closed.
- Has Lock, Unlock and Trunk keyless entry features.
- Will attempt to start the car for up to six seconds, but no longer (to avoid damage to the starter motor). Should the car not start, or if it stalls after starting, the remote starter will make two further attempts to start it.
- Has alarm functions including starter kill which becomes active when the doors are locked with the remote control.
- Will not let the car be driven without the key in the ignition.
- Shuts itself off automatically after 10 or 15 minutes (programmable) if you forget to come out to your car.
- Will shut off if the brake pedal is pushed, the hood is opened, or the transmission is shifted out of park - unless the key is in the ignition and in the "run" position.
- Allows you to remove the key while leaving the car running with the doors locked for up to 10 or 15 minutes utilizing the Quick Stop™ Option. (See Separate User Tip Sheet)
- Starts the car automatically whenever the temperature drops below 0°F (-18°C), or if the battery voltage drops below 11 volts when the Cold Start™ Option is used. (See Separate User Tip Sheet)
- Has the "Daily Start™" feature which allows the vehicle to be started at the same time the following day. (See Separate User Tip Sheet)
- Is quality engineered, microprocessor controlled, and made in the USA to provide many years of reliable use.
- Comes with a lifetime warranty.

Tools required to install the AutoCommand® OEM Series Unit:

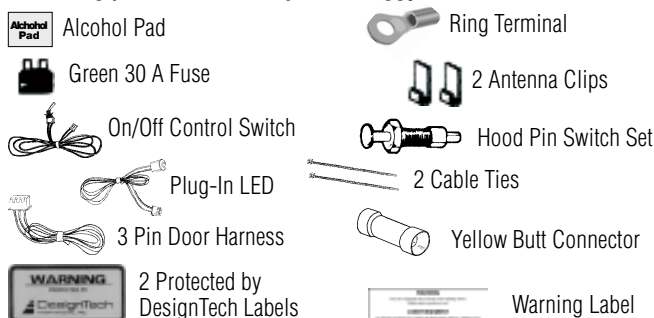


We highly recommend that all connections be soldered for reliability.

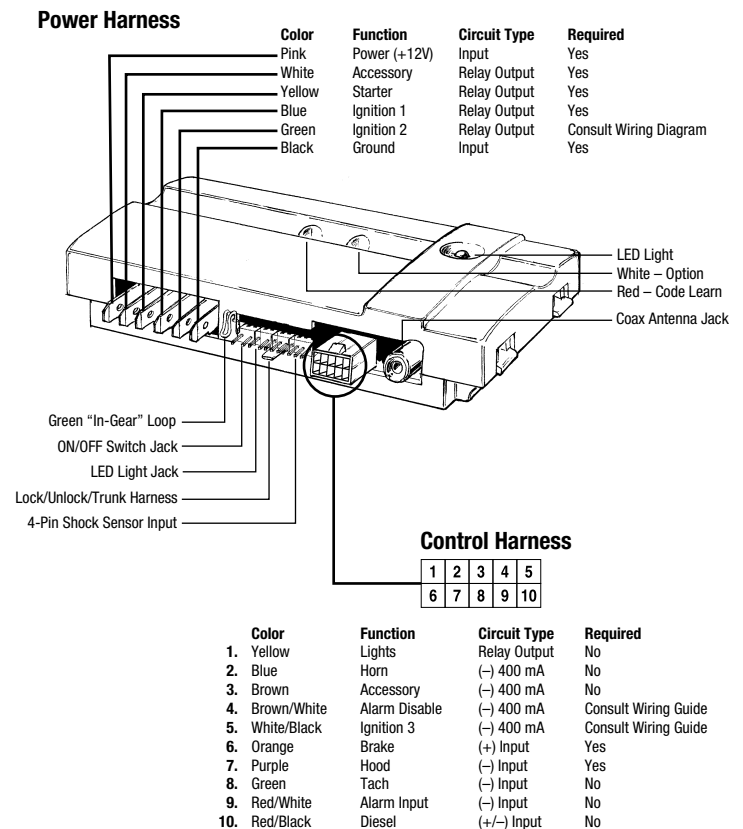
Parts List included with the AutoCommand® OEM Series Unit:



Following parts included in plastic baggy



Wiring Diagram



*For free vehicle-specific wire information consult our website at www.designtech-intl.com



On cars with airbags, you may notice bright yellow tubes or harnesses marked SRS (Supplemental Restraint System) underneath the steering column area. DO NOT tamper with these wires in any way, to prevent personal injury and/or damage to the air bag system.

Battery gases are explosive.
Do not smoke while working near the car's battery.

Note: Some installers connect a battery charger to the vehicle's battery during installation. This is fine, but it must be removed before running the vehicle under remote starter control.



All General Motors (GM), rear wheel drive vehicles built prior to 1995 with automatic transmissions and Dodge Dakota trucks (4 cylinder engines only) with automatic transmissions built prior to 1996 have a MECHANICAL TYPE of NEUTRAL SAFETY SWITCH. See important warning on the last page of these instructions.



When running the wires through the car's firewall, be sure to protect them from sharp metal edges and from hot surfaces on and around the engine.

INSTALLATION INSTRUCTIONS

1. Before You Start

Take time to read through the whole installation manual before beginning.

Always leave a window open to avoid locking your keys in your car.

IMPORTANT: After having read the entire manual, start the installation by putting the yellow WARNING STICKER in the engine compartment. Choose a surface that is clean and readily visible when the hood is open.

WARNING

This car is equipped with a remote control starting device.
Disable before working on car!

AVERTISSEMENT

Ce véhicule est équipé d'un système de démarrage à distance. Mettez-le hors fonction avant d'effectuer toute opération d'entretien ou de réparation!

POWER & IGNITION HARNESS

The remote starter module will be installed under the dash once all wiring has been completed. **Do not mount the module at this time! You will need to check the red diagnostic LED light as the installation progresses.** Locate (or drill) a hole in the firewall to run the PURPLE and GREEN wires of the **Control Harness** and the PINK wire of the **Power Harness** into the engine compartment. The remaining short wires stay in the passenger area. Leave about a foot of the wire harness under the dash for ease of working and visual access to the diagnostic light.

The **Installation Information** section of our web site www.designtech-intl.com is available 24 hours/day to provide you with free, up-to-date vehicle wiring information for your particular vehicle after you log in.

Note: Always connect the **PINK** and **BLACK** wires before connecting any of the other wires. Do not insert the fuse until Step 11.

2. Black Wire (16 AWG) – Ground

Connect the BLACK wire to a very good, clean chassis ground in the driver's kick panel area. Use the small ring terminal. (The thin metal bracing around or beneath the dash board is not always adequate.)

3. Pink Wire (12 AWG) – Power (+12 Volts)

Connect the ring terminal at the end of the short PINK wire to the +12 Volt terminal of the battery. Run the long PINK wire through the firewall of your vehicle. Join the remaining ends of the power wire together by soldering them. Tape with electrical tape to leave no exposed wires. Alternatively, you may wish to use the yellow butt connector, but we recommend soldering. Wait to insert the 30 amp green fuse into the holder until Step 11. As the power is first applied to the unit the red diagnostic LED light will blink once.

Note: Failure to properly install the fuse holder and 30 amp fuse to the PINK wire to the battery voids all product warranties.

Ignition Key Diagram for Steps 4-7

The vehicle's wires are found coming off of the key switch. Remove the panel under the steering column to access these wires.



4. Blue Wire (14 AWG) – Ignition 1

Connect the BLUE wire to the ignition 1 wire of your vehicle. This wire will measure +12 Volts on the test meter in the "run" and "start" position, and is off in the "lock/off" and "accessory" positions.

5. Green (14 AWG) – Ignition 2

Connect the GREEN wire to the Ignition 2 wire in the vehicle. The Ignition 2 wire can function in several different ways in your vehicle. It is important to understand how it works. The Ignition 2 wire will usually measure +12 Volts in the "run" position and is off (ground) in the "lock/off" and "accessory" positions. In certain vehicles, it may also show +12 Volts in the "Start" position or Ignition 2 may turn OFF during "Crank" and turn back ON after the starter disengages. Carefully note the function of the Ignition 2 wire. If the Ignition 2 turns OFF during "Crank", set Option #4 (section 24). If Ignition 2 stays ON during "Crank," no options need to be changed.

6. White Wire (14 AWG) – Accessory

Connect the WHITE wire to the accessory wire which is +12 Volts in the "run" and "accessory" position, but off in the "start" and "off" positions. In GM vehicles, connect the white wire to the orange wire that is hot in "run" only.

7. Yellow (14 AWG) – Starter

Connect the YELLOW wire to the starter wire. This wire will measure +12 Volts on the test meter in the "start" position only.

Note: Most Nissan vehicles have two starter wires. Connect both starter wires of the vehicle to the YELLOW start wire of the remote starter.

8A. Plug-In On/Off Switch

Mount the control switch so that it is easily accessible and so that the "ON" position is facing upward. Make sure there is enough clearance behind the mounted switch for the wire connections. Do not let the switch wires touch ground. Do not plug the switch into the unit until it is mounted first. Connection of this switch is mandatory. Use a 1/4" drill-bit for the mounting hole.

Plug the ON/OFF control switch into the module just to the right of the power wires. Turn the switch on.

8B. Plug-In LED Light

Drill a 5/16" hole in to the dash or panel to mount the LED light and plug the LED light plug into the red connector. Mounting the LED light is not mandatory but the LED light is used for alarm status, troubleshooting and programming options.

CONTROL HARNESS

ALL WIRES ARE THE SMALLER 18 AWG SIZE

9. Purple Wire – Hood Pin Switch – Control Harness

The hood pin switch MUST be installed with the remote starter. It prevents operation of the remote starter when the hood is open and is used to initialize the unit. Connect the PURPLE wire to the hood pin switch using the red connector.

Note: If you already have a hood pin switch which is being used by a car alarm system, you may share the wiring – but be sure to diode isolate each wire going to the hood pin switch with the bands of diodes pointing towards the pin switch as shown at right.



How to share a hood pin switch with an alarm

10. Orange Wire – Brake Shut-off – Control Harness

Connect the ORANGE wire to the brake wire which receives +12 Volts when the brake pedal is depressed. **This wire must be connected.** It arms a critical safety feature which disables the remote starter when the brake pedal is depressed.

Note: In some cars, the ignition must be in the “on” position to test the power in the brake wire.

Note: If the Ignition 1 and Ignition 2 wires come on whenever the brake is depressed and the hood is open this just means you need to initialize the unit in section 11.

11. Initializing the Remote Starter

BEFORE THE UNIT WILL DO ANYTHING FOR THE FIRST TIME, YOU MUST INITIALIZE THE REMOTE STARTER

- Insert the 30 amp fuse into the fuse holder on the large PINK wire.
- Turn the control switch on.
- The remote starter requires the installer to **open the hood** and then **press and hold the brake pedal**. Note: The ignition/dash lights will come on if the unit is not initialized.
- While depressing the brake (with the engine off and the hood open) turn the ignition key to the “RUN” (not “start”) position.
- Put the car in “DRIVE” from the “PARK” position.
- Put the car back in “PARK” and release the brake.
- Turn the key off and remove the key.

Note: Confirm initialization by turning the ON/OFF control switch “OFF” and then “ON”. The red LED light on the remote start module will flash once immediately as the switch is flipped from the “OFF” to the “ON” position.

If the red LED light did not flash when the control switch was turned “ON” REPEAT STEPS A THROUGH G. See the colored Trouble Shooting Sheets if necessary.

12A. Green Wire – Tach Input – Control Harness

The remote starter has **two ways** of monitoring the car during the starting process. Both ways will ensure a clean, accurate start. **Read about both methods before deciding which one to use. Normally you should try the “No Tach™” method first.**

“No Tach™” Starting

This starting method **does not** require the connection of the GREEN tach wire. This method will start the car by reading the car’s voltage before attempting to start, and then looking for a voltage increase when the alternator kicks in. This feature automatically takes into account voltage, temperature, and the time since the vehicle was last run. The “No-Tach™” starting is preset at the factory and you can skip step 12B if you would like to use it. Note that if the vehicle is hard to start, set Option #3 (section 24) for “extended crank.”

Tachometer sensing

If the vehicle is generally hard to start (i.e. requiring a cranking time of more than 1 second) you will get more accurate starting with the tachometer sensing starting method. This method starts the car by reading the engine speed (tach) information from a wire under the hood. If you choose tachometer sensing, connect the GREEN (18 awg) wire to the car’s tach wire under the hood (normally the negative side of the coil or tach output of coil pack). After you have connected the GREEN wire, you need to teach the remote starter the vehicle’s tach rate at idle. Proceed to step 12B.

Note: You must have already initialized the remote starter from Step 11.

12B. Tach Rate Learning

Note: Only use if the tachometer sensing method is chosen.

- Connect the GREEN wire to the car’s tach wire under the hood.
- Turn the On/Off control switch to the “OFF” position. Wait 5 seconds for the red LED light flashes to stop.
- Program the unit to the tach mode by pushing the White “option” button once and watching the red LED light flash. Now push the start button on the transmitter for a second until you see the red LED light flash again. You are now in TACH mode. (If the red LED light flashed twice or sometimes three times – simply push the transmitter button again until you get only one flash).
- Wait 5 seconds for the red LED light to flash 3 times.

- Turn the On/Off control switch back to the “ON” position
- Start the car with the key and let it get to a *normal* idle. Do not press on the gas pedal.
- Push the red “code learn” button for a second.
- Watch the red LED light. It will come on after 3 or 4 seconds, indicating that the tach idle rate has been learned.
- Watch that the LED light remains on as the vehicle is running and turns off when you rev the engine RPMs to twice the idle rate. The LED light must go out when you rev the engine to about twice the idle rate to confirm correct tach learning.
- Turn the key to the “Lock/Off” position.
- Turn the ON/OFF control switch off and the red LED light will go out. You are now finished.

Note: Once these steps are complete – you cannot use the LED to confirm tach again. You can however repeat the above steps to learn tach over again at any time.

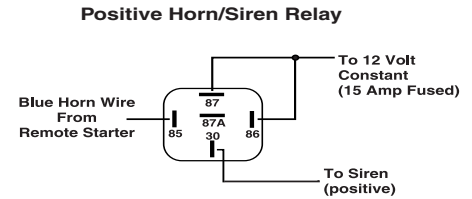
OPTIONAL STEPS

13. Yellow Wire – Headlights/Parking Lights – Control Harness

Connection of the YELLOW wire allows you to activate the **low beam headlights or parking lights for remote start and lock status**. After the remote starter has started the car, the lights will remain on until the remote starter shuts off after 10 minutes, or when the brake pedal is pushed, or when the car is put into gear. **This is a relay +12 Volts output.** Connect the YELLOW wire to the wire that has power when the lights are on.

14. Blue – Horn/Siren – Control Harness

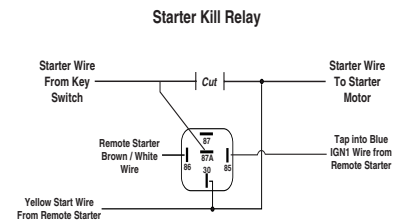
The BLUE wire signals the horn to honk (or siren to chirp) once each time the remote starter starts the vehicle and each time the locks are locked or unlocked. Connect the blue wire to the factory horn wire which is often found running down the steering column. It will normally show +12 Volts at rest and the voltage will disappear when the horn is honked. **This is a 400 mA transistor ground output which MUST drive a relay if using a siren or positively triggered horn.** Option #11 (section 24) must be changed when using a siren.



15. Brown/White – Alarm Disable/Starter Kill – Control Harness

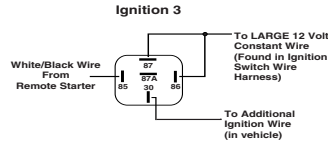
The BROWN/WHITE wire is **Alarm Disable**, which will give out a quick negative pulse just before starting the vehicle. This wire can be used to turn off the factory alarm system in vehicles which have them. In most vehicles, this wire is located in the driver’s kick panel.

Using Option #19 (section 24) you can set this to **Starter Kill**. This option prevents the vehicle from being started with the key when the alarm is armed. It is also active whenever the vehicle is running under remote starter control to provide anti-grind protection.



16. White/Black Wire – Ignition #3 – Control Harness

The WHITE/BLACK wire, is a ground output that acts just like the Ignition 1 or Ignition 2 relay outputs (active in the “run” and “crank” positions). **This wire is a 400 mA negative transistor output and MUST be set up to power a relay** (not included). It can be used to power the third ignition wire at the key (necessary for most Ford vehicles).



This is the wire that can also be used to bypass a passive vehicle anti-theft system by hooking it up to the Universal Bypass Module. See the Factory Anti-Theft System section at the end of these instructions.

17A. Yellow and White – Keyless Entry Wires – 3 Wire Harness

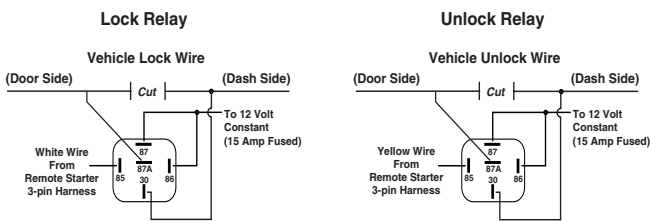
The wires function as follows:

YELLOW	Negative Trigger – Unlock	Positive Trigger – Lock
WHITE	Negative Trigger – Lock	Positive Trigger – Unlock

Determine the polarity of your door lock system by using a test meter. For NEGATIVE locks (the lock wire sees a ground signal briefly as the electric locks are locked) – connect the YELLOW wire to the Unlock wire and the WHITE wire to the Lock wire.

For POSITIVE locks (the lock wire sees a +12 volt signal briefly as the electric locks are locked but **does not see ground** when they are inactive) connect the YELLOW wire to the Lock wire and the WHITE wire to the Unlock wire.

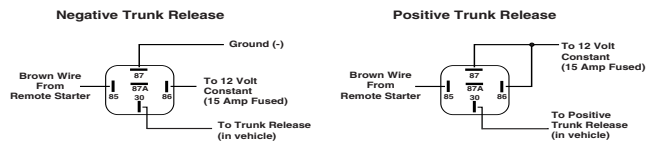
For REVERSING POLARITY (the lock wires sees a +12 volt signal briefly as the electric locks are locked and **sees a ground** signal when they are inactive) follow the diagram below:



Most VACUUM operated door lock systems require Option #18 (section 24) for Long locks to be set.

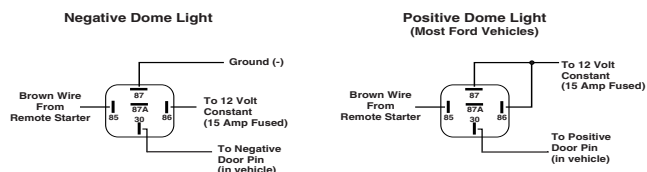
17B. Green Wire – Trunk Release – 3 Wire Harness

The GREEN wire is the Trunk Release output which gives out a transistor ground output when the unlock button is held for 4 seconds. **Again, this is a 400 mA transistor ground output which MUST drive a relay** (not included).



18. Brown Wire – Accessory Pulse/Dome Light – Control Harness

The BROWN wire is the Accessory Pulse output which gives out a momentary, transistor ground output 10 seconds after the vehicle is remotely started. This is important in some vehicles to control the defroster or to control the GM R.A.P. system. **Again, this is a 400 mA transistor ground output which MUST drive a relay** (not included).



This BROWN wire can also control a relay for Dome Light activation. When Option #20 (section 24) is changed, this BROWN wire causes the dome light to turn on for 25 seconds every time the doors are unlocked with the transmitter.

19. Red/White Wire – Door Pin Alarm Input – Control Harness

The RED/WHITE wire is the Door Pin Alarm Input. This wire will accept any input that supplies a negative (ground) when activated. (Most door pins go to ground when the door is open, +12 Volts when closed.)

Most Ford vehicles are positive door pins that switch to +12 Volts when opened, you will need to reverse the polarity before connecting to this RED/WHITE wire. Change Option #23 (section 24) Negative/Positive Door Pin Switch.

The alarm is “Last door arming.” You should diode isolate the inputs of two or more sensors on the same input wire.

If you choose not to use this alarm feature then permanently ground this wire or program “No Alarm” Option #24 (section 24).

20. Red/Black Wire Diesel “wait to start” Control Harness

This wire is only used in diesel vehicle applications – and is optional. This wire can be hooked up to the “wait to start” light’s switched wire behind the dash. If Option #9 (section 24) is set, this wire will feed information to the remote starter as to when to crank the vehicle over. This wire is not polarity sensitive.

REQUIRED FINAL STEPS

Note: You must have hooked up all required wires and completed Initialization (Step 11) to proceed forward.

21. Trying the Unit Out

WARNING: Be prepared to apply the brake during this testing.

- Close the hood and fully apply the emergency brake
- Place the vehicle in Park.
- Turn the On/Off switch off then on – the red LED light will flash once.
- Once all the wiring is checked and is correct, press the Start button on the transmitter.
- The car should start and continue to run for ten minutes. Make sure that the engine shuts down if the car is shifted out of park, the hood is opened, the brake is pressed or the start button is pushed again. If the car does not start, see the Code Learning section under Special Cases.

22. The Antenna

Feed the antenna around under the dash and up the inside of the right or left windshield post and over the top of the windshield. Use the 2 enclosed antenna clips to mount the last eight inches of the antenna behind the rear view mirror. Clean the windshield with the alcohol pad provided for maximum adhesion. The more exposed the clear tube section of the antenna is, the better the range performance. Now plug the end of the antenna into the remote starter module. **In most vehicles you will get better range performance if the antenna is pointing vertically downward from the top of the windshield.**

Note: The wiring section of the installation is now complete. Be sure to cap all unused wires so as to prevent short circuits, and mount the module securely under the dash. When tying up and mounting the unit, be sure to avoid any moving parts (steering column, pedals) and sharp edges.

23. Trouble Shooting with the Self Diagnostics

The remote starter contains a built in diagnostic routine that will indicate why the unit started or why the unit turned off the car the last time that the unit was used.

To activate the diagnostic mode for **why it turned off**, simply turn the On/Off control switch to the “OFF” position. In a few seconds, the red LED light on the module will flash 1 to 12 times to identify the problem. See the chart below for an explanation of the flashes:

- | | |
|---------|--|
| 1 flash | 10/15 minute time out. Unit should be fine. Make sure transmitter is working properly. |
|---------|--|

2 flashes	Unit turned off because Brake or Hood was activated. Check to make sure the hood pin switch is depressed when the hood is closed and the correct brake wire is hooked up.
3 flashes	No Tach or Stalled. Review section 12 and make sure the no tach/tach wire option is programmed correctly.
4 flashes	Received another remote input from the transmitter
5 flashes	Transmission was shifted into gear. Cut the small GREEN "In Gear Loop." See wire diagram on front cover.
6 flashes	Low battery voltage, or may be missing an ignition wire which powers up the alternator
7 flashes	Alarm Input triggered
8 flashes	Over current – One of the 400 mA (-) transistor outputs (Accessory Pulse, Alarm Disarm, Starter kill, lock, unlock, horn, lights, trunk, or Ignition 3) of the control or 3 pin harness is drawing too much current. Make sure to use a relay where necessary.
12 flashes	The Control Switch was turned off while the starter was running.

For reasons **why it last started**, simply put your foot on the brake while you turn the control switch OFF. Keep holding the brake down until the flashes start. The codes are as follows:

1 flash	The unit has not started yet since it was last powered up.
2 flashes	Received a radio signal from the transmitter to start.
3 flashes	N/A
4 flashes	Temp reached 0° F in vacation mode.
5 flashes	Voltage reached 11 volts in Vacation Mode.
6 flashes	Received a start command from the remote input RED/BLACK wire.
7 flashes	Started from 24 hour Daily Start feature.

24A. Setting Program Features

The remote starter unit has many special features available. You will not need to use these special features in most situations. The factory settings will operate most vehicles. **You must turn the On/Off control switch to the "OFF" position to program any features.**

Note: When turning off this control switch, the red LED light will flash a few times, giving the diagnostic code described in section 23. Wait a few seconds for it to finish before programming your new Options.

Feature Number	Factory Setting (2 flashes)	Option (1 flash)
1	"No-Tach"	Tach Mode
2	10 Min. Run Time	15 Min. Run Time
3	Normal Crank	Extended Crank
4	Normal	IGN 2 not active during crank
5	Normal Voltage Metering	Ignore Voltage Metering
6	Gasoline vehicles	Diesel vehicles
7	"Enable" feature	No "Enable"
8	Normal	Daytime Running Lights
9	Normal	Diesel "Wait to Start"
10	1 sec. alarm disarm pulse	0.45 sec. Alarm disarm pulse
11	Horn Pulsing	Siren Constant
12	Chirp with Locks	Silent lock/Unlock/Start
13	Active	Passive Arming
14	Normal	Lock Follow ignition
15	Normal	Unlock Follow ignition
16	Normal	Double Pulse Lock
17	Normal	Double Pulse Unlock
18	Short Locks	Long Locks
19	Alarm Disable	Starter Kill
20	Accessory Pulse	Dome Light
21	N/A	N/A

22	N/A	N/A
23	Negative Door Pin	Positive Door Pin Switch
24	Alarm Mode	No Alarm Mode
25	-18°C/0°F	-25°C/-13°F
26	Normal 3-Hour	5-Hour Interval
27	Normal	Auto Rearm
28	Normal	Silent Lock/Unlock Only
29	N/A	N/A
30	N/A	N/A
31		Reset All Options

24B. Program Features Descriptions

Option #1 No-Tach Tach Mode
This option sets the starting method. The factory setting uses "No-Tach" starting. If you wish to use the tach to start, follow the instructions in the Tach Rate Learning (section 12B).

Option #2 10 Min. Run Time 15 Min. Run Time
This option gives you a choice of run times.

Option #3 Normal Crank Extended Crank
This option will add 50% more crank time to the NoTach™ starting feature.

Option #4 Normal IGN 2 not active during Crank
This option will turn off the Ignition 2 output (thick GREEN wire) during cranking. It is used to exactly match the remote starter with the ignition key function.

Option #5 Normal Voltage Metering Ignore Voltage Metering
This option is used in the "No-Tach" starting method for some diesel vehicles or vehicles with weak batteries and/or poorly performing alternators.

Option #6 Gasoline Vehicles Diesel Vehicles
This option must be activated when installing on a diesel vehicle.

Option #7 "Enable" Feature No "Enable"
This option cancels the "enable" mode safety feature. The "enable" mode requires that the driver toggle the ON/OFF control switch "OFF" then "ON" each time the driver removes the key from the ignition in order to "enable" the vehicle for remote starter control. This feature guards against undesired starting of the vehicle by remote control. You must keep this option as enable on all GM rear wheel drive and Dodge Dakota vehicles manufactured prior to 1996.

Option #8 Normal Daytime Running Lights
This option will automatically turn the headlights on (for safety) about 10 seconds after it sees the key in the ignition position – and automatically turn the headlights off when the key is removed from the ignition.

Option #9 Normal Diesel "Wait to Start"
This option will control the time before cranking the diesel vehicle by looking at the "wait to start" light of the vehicle. Simply hook the RED/BLACK Input wire of section 20 up to the wire behind the "wait to start" light. Also set Option #6 (section 24) for diesel vehicles.

Option #10 1 sec. Alarm Disarm Pulse 0.45 sec. Alarm Disarm Pulse
This option shortens the Alarm Disarm Pulse from 1 second to 0.45 second. This feature is very useful with some Dodge/Chrysler vehicles that use a multiplexed system to disarm the alarm and unlock the doors with the same wire. Using this feature should eliminate the need to relock the doors after the alarm has been disarmed and the vehicle is remotely started.

Option #11 Horn Pulsing Siren Constant
This option changes the thin BLUE wire from pulsing output for horn to constant output for a siren.

Option #12 Chirp with Locks Silent lock/Unlock/Start
This option will eliminate the chirp with Start, Lock and Unlock.

Option #13 Active Arming

The factory setting of Active Arming requires the owner to actively arm the car with the remote control. Choosing the option of Passive Arming will cause the vehicle to automatically arm after the key is removed and the door is closed.

Option #14 Normal

Selecting this option will automatically lock the doors when the key is turned on, doors closed and the brake is depressed.

Option #15 Normal

Selecting this option will automatically unlock doors when key is removed from ignition.

Option #16 Normal

This option will pulse the lock output wire twice instead of once for normal mode.

Option #17 Normal

This option will pulse the unlock output wire twice instead of once for normal mode.

Option #18 Short lock pulse

This option will increase the door lock pulse time from 0.6 second to 3 seconds for vehicles with vacuum locking systems (older European vehicles).

Option #19 Alarm Disable

The factory setting of Alarm Disable will give you a quick pulse whenever the transmitter unlocks the doors or the transmitter is used to start the vehicle. The Starter Kill option comes on and stays on whenever the remote starter is running or the alarm is armed. This wire controls a relay which opens up the path of the starter wire (refer to section 15).

Option #20 Accessory Pulse

Accessory pulse puts out a brief pulse output after the remote starter starts or stops the vehicle. When set, this output can be used to turn on a defroster that requires a momentary pulse or could be used to control GM R.A.P. (retained accessory power) output. Dome lamp option will turn this output on when you unlock the door for 25 seconds. (Refer to section 18).

Option #23 Negative Door Pin

This option changes the polarity of RED/WHITE alarm input wire. (Most Ford vehicles use a positive door pin switch.)

Option #24 Alarm

This feature can disable all alarm functions if the alarm features are not desired.

Option #25 -18°C/0°F

This option changes the start temperature for the Vacation Option.

Option #26 Normal 3-Hour

This option changes the minimum wait time between starts for the Vacation Option.

Option #27 Normal

This option will automatically relock the doors and rearm the alarm if the doors are not physically opened within 2 minutes of unlocking and disarming the alarm with the transmitter.

Option #28 Normal

This option will remove the notification chirps for lock and unlock only. The unit will still chirp for remote start.

Option #31

This option resets all options back to the factory settings.

Passive Arming**Lock Follow Ignition****Unlock Follow Ignition****Double Pulse Lock****Double Pulse Unlock****Long lock pulse****Starter Kill****Dome Lamp****Positive Door Pin Switch****No Alarm****-25°C/-13°F****5-Hour Interval****Auto Rearm****Silent Lock/Unlock Only****Reset all Options**

PROGRAMMING AN OPTION

If you want the factory setting, DO NOTHING and skip this section. If you want to change one or more of the features, TURN THE ON/OFF CONTROL SWITCH TO THE "OFF" POSITION. **Wait for the red LED light to stop flashing**, then continue with the following procedures:

- A. For options 1-9:** Push the white code button on the remote start module. Each time you push the button the red LED light will flash 1 to 9 times signifying at which feature you are (press it once, the LED light flashes once. Press it again and it will flash two times. Press it again and it will flash three times, etc., to show what feature you are at).

For options 10-19: Push the red code button on the remote start module. You will see the LED light flash a long blink. This is option 10. You can scroll to option 11 by pressing the white button once – you will see a long blink followed by one short blink. You can scroll to option 12 by pushing the white button again – one long and two short blinks brings you to option 12.

For options 20-29: Push the red code button twice to get the two long blinks – you are now at option 20. Push the white button to jump ahead to option 21 – two long blinks and one short blink. Push three more times to get to option 24 – two long and four short blinks.

For options 30-31: Push the red code button three times to get three long blinks – you are now at option 30. Push the white button once to jump to option 31 (three long blinks and one short blink).
- B.** When you are at the feature level you desire, **push the start button on the transmitter for one second** and the red LED light will flash **once to signify you are at the Option setting**. You can push the transmitter button again and it will flash **twice to signify you are at the Factory setting**. Push the transmitter button again and you will go back to the Option setting.
- C.** You can choose to change another feature by starting over again at Step A. After six seconds, the remote starter automatically exits the programming mode (three LED light flashes).
- D.** When finished – switch the Control Switch back ON. The red LED light will flash once.

25. External shock sensor hook up (optional):

Plug the shock sensor unit into the 4 wire connector on the front side of the remote start module. Use one or two cable ties to tightly fasten the shock sensor unit to the steering column of the vehicle.

Make sure that the sensor does not affect the driver's ability to steer the vehicle. This placement gives the best overall coverage for a vehicle. Adjust the screw(s) so that a hard impact on the vehicle triggers the full alarm and light impacts just trigger the warn away. (This input may not work with all types of alarm sensors.)

4-Pin External Alarm Sensor

Power Harness
on this side

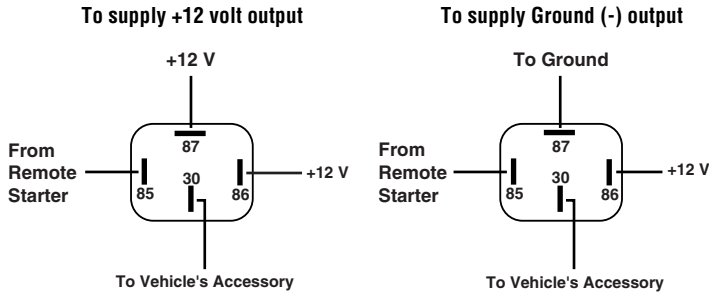


1. +12 Volt Constant
2. Ground
3. Full Alarm
4. Warn Away

SPECIAL CASES

1. How to Use a Relay

Many of the optional steps require a relay to be hooked up. The most common relay used for this type application is the Bosch type relay (DesignTech #20043 or Radio Shack Cat.# 275-226). Use the diagram below for a typical hookup. If you have another relay then you need to know that pins 85 and 86 in this diagram relate to the coils of the relay. Pin 30 is the 'common', and pin 87 is the 'normally open' contact. If your relay has a pin 87A in the middle it is the normally closed contact and may or may not be used in the application. (The diagram below is typical for an Ignition 3 or trunk application).



2. Code Learning

Your transmitter is factory coded to the remote starter module with over 16,000,000 different codes. The remote starter module can learn the codes of up to 4 different transmitters. If you want to add additional transmitters to the receiver or **if it does not respond to your transmitter** – follow the steps below to teach the receiver the transmitter code(s):

- Turn the Control Switch ON.
- Push the red "code learn" button to the right of the red LED light. The red LED light and the dash lights come on for a second. (The vehicle's ignition and accessory wires come on).
- While holding the transmitter at least three feet from the module, hold down the Start button (on a five button transmitter) or the lock/unlock button (on a three button transmitter) until the red LED light and the dash lights come on again for a second. The module has now learned the transmitter code. Release the transmitter button.
- To learn additional transmitters (up to 3 more), immediately (within 5 seconds) push the Start button (on a five button transmitter) or the lock/unlock button (on a three button transmitter) on another transmitter for a few seconds until the red LED light and the dash lights come on for a second again.
- 5 seconds after the last time the transmitter was learned the unit exits the code-learning stage. (The red LED light, ignition and accessories flash 4 times).

Note: Teaching the module a new transmitter code will erase all previous codes - so all transmitters must be taught. You have only 5 seconds between transmitters to begin teaching a new transmitter.

3. Diesel Vehicles

For the most reliable starting, hook up the RED/BLACK wire referenced in section 20.

For difficult starting diesels connect and learn the tach (section 12) as well as the wait-to-start RED/BLACK wire (section 20). Set Option #6 (section 24) for diesel.

For most diesel vehicles, you can start the vehicle without needing to hook up a tach wire. The following table provides the mandatory option settings for "no-tach" operation in diesel vehicles. (Use the Chrysler settings for all other diesel vehicles.)

	Option #6 Diesel Engine	Option #3 Extended Crank	Option #5 Ignore Meter
Chrysler	■	■	
Ford	■	■	■
Chevrolet	■	■	■

4. Factory Anti-Theft Systems

Many vehicles come with an anti-theft system that must be temporarily bypassed for the vehicle to be remotely started. Some systems use a resistor in the key. Others use a transponder – a small device in the key that communicates a high security code to the vehicle before the vehicle will successfully start.

Check the list of vehicles and the types of security systems that follows. If your vehicle is listed, your vehicle has an Anti-Theft System that the remote starter **MUST** temporarily bypass in order to start the vehicle. More information about the factory anti-theft systems and vehicle wire colors can be found at the DesignTech Web page www.designtech-intl.com.

DesignTech has developed a Universal Alarm Bypass Module sold under the following model numbers: #20402, #27402, or #29402. This module will temporarily bypass the factory anti-theft systems when using the remote starter. Check with your local retailer/installer to purchase this Universal Alarm Bypass Module or contact DesignTech directly.

List of vehicles and the types of factory anti-theft systems:

Vehicle:	System:	Vehicle:	System:
Acura 3.2TL 98+	Transponder	GMC Sierra	Passlock II
Audi A4,A6,A8 98+	Transponder	GMC Sonoma 98 +	Passlock II
Acura CL 97+	Transponder	GMC Suburban 98+	Passlock II
Acura Integra	Transponder	GMC Yukon 98+	Passlock II
Acura NSX	Transponder	Honda Accord 98+	Transponder
Acura RL 98+	Transponder	Honda Odyssey 98+	Transponder
BMW (all 97 +)	Transponder	Honda Prelude 98+	Transponder
Buick LeSabre 90 - 01	VATS	Honda S2000	Transponder
Buick Park Ave 91 - 96	VATS	Infiniti I30 98+	Transponder
Buick Park Ave 97+	Transponder	Infiniti Q45 98+	Transponder
Buick Regal 93 -96	VATS	Infiniti QX4	Transponder
Buick Rendez Vous	Transponder	Jaguar (all 98+)	Transponder
Buick Riviera 93 -96	VATS	Isuzu Hombre 98+	Passlock II
Buick Roadmaster 93 - 96	VATS	Jeep Grand Cherokee 99+	Transponder
Buick Skylark 96-98	Passlock	Jeep Liberty	Transponder
Cadillac Allante	VATS	Jeep T J (Wrangler) 99+	Transponder
Cadillac Brougham	VATS	Lexus (all 97+)	Transponder
Cadillac Catera 97+	Transponder	Lincoln Blackwood	Transponder
Cadillac DeVille 92 - 98	VATS	Lincoln Continental 97+	Transponder
Cadillac DeVille 99+	Transponder	Lincoln LS 2000+	Transponder
Cadillac Eldorado 89 - 98	VATS	Lincoln Mark VIII 97+	Transponder
Cadillac Eldorado 99+	Transponder	Lincoln Navigator 97+	Transponder
Cadillac Escalade 00+	Passlock	Lincoln Town Car 97+	Transponder
Cadillac Fleetwood 90 - 96	VATS	Mazda Tribute	Transponder
Cadillac Seville 90 - 98	VATS	Mercedes (all 97+)	Transponder
Cadillac Seville 99+	Transponder	Mercury Cougar 99+	Transponder
Chevrolet Astro Van 98+	Passlock II	Mercury Grand Marquis	Transponder
Chevrolet Avalanche 01	Passlock	Mercury Mountaineer 98 +	Transponder
Chevrolet Blazer 98+	Passlock II	Mercury Mystique 97+	Transponder
Chevrolet Camaro 86 +	VATS	Mercury Sable 96+	Transponder
Chevrolet Cavalier 96-99	Passlock	Mini Cooper 02	Transponder
Chevrolet Cavalier 2000+	PasslockII	Mitsubishi Eclipse	Transponder
Chevrolet Corvette 88 +	VATS	Mitsubishi Galant	Transponder
Chevrolet Express 97+	Passlock	Nissan Frontier S/C	Transponder
Chevrolet Impala 2000+	Passlock II	Nissan Maxima 98+	Transponder
Chevrolet Lumina 96 -99	VATS	Oldsmobile Achieva 95	Passlock I
Chevrolet Malibu 97 -01	Passlock II	Oldsmobile Achieva 96+	Passlock II
Chevrolet Monte Carlo 96-99	VATS	Oldsmobile Alero 99+	Passlock II
Chevrolet Monte Carlo 00+	Passlock II	Oldsmobile Aurora	VATS
Chevrolet Pickup Full-size 98+	Passlock II	Oldsmobile Bravada 98	Passlock II
Chevrolet S-10 98+	Passlock II	Oldsmobile Cutlass 97+	Passlock II
Chevrolet Silverado HD 01	PasslockII	Oldsmobile Eighty-Eight	VATS
Chevrolet SSR 01	Passlock	Oldsmobile Intrique 98+	Passlock II
Chevrolet Suburban 98+	Passlock II	Oldsmobile Ninety-Eight	VATS
Chevrolet Tahoe 98+	Passlock II	Oldsmobile Silhouette 99	Transponder
Chevrolet Trailblazer 01+	PasslockII	Pontiac Aztek 01	Transponder
Chevrolet Van 98+	Passlock II	Pontiac Bonneville 89+	VATS Pontiac
Chevrolet Venture 99+	Transponder	Firebird 88+	VATS Pontiac
Chrysler Concorde 98+	Transponder	Grand Am 96 - 98	Passlock
Chrysler LHS 99+	Transponder	Pontiac Grand Am 99+	Passlock II
Chrysler PT Cruiser 00+	Transponder	Pontiac Grand Prix 92 - 96	VATS
Chrysler Sebring Conv. 98+	Transponder	Pontiac Grand Prix 97+	Transponder
Daewoo Leganza	Transponder	Pontiac Montana 99+	Transponder
Dodge 300 M 99+	Transponder	Pontiac Sunfire 96-99	Passlock I
Dodge Intrepid 98+	Transponder	Pontiac Sunfire 2000+	Passlock II
Dodge Neon 00+	Transponder	Porsche (all 97+)	Transponder
Ford Contour 97 +	Transponder	Saab (all 97+)	Transponder
Ford Crown Victoria 98+ (option)	Transponder	Saturn 97-99	Factory Alarm
Ford Excursion 01+	Transponder	Saturn 00+	Transponder
Ford Expedition 97+	Transponder	Subaru Legacy 00+	Transponder
Ford Explorer 98+	Transponder	Subaru Outback 00+	Transponder
Ford Focus 01+	Transponder	Toyota Avalon 98+	Transponder
Ford Mustang 98+	Transponder	Toyota Camry 98+	Transponder
Ford Pick Up (optional)	Transponder	Toyota Highlander 01+	Transponder
Ford Ranger 99+(optional)	Transponder	Toyota Land Cruiser 98+	Transponder
Ford Sport Trac 01	Transponder	Toyota Solara 99 +	Transponder
Ford Taurus 96 +	Transponder	Toyota Supra 98+	Transponder
Ford Windstar 2000 +	Transponder	Volkswagen Beetle 98+	Transponder
GMC Envoy 01+	Passlock II	Volkswagen Golf 98+	Transponder
GMC Jimmy 98+	Passlock II	Volkswagen Passat 98+	Transponder
GMC Safari 98+	Passlock II	Volvo (all 98+)	Transponder
GMC Denali 99+	Passlock II		

NOTICE to Installers of Remote Vehicle Starters



DesignTech International DOES NOT recommend installing ANY remote starter in the following vehicles: Audi 1998+, BMW 1998+, Jaguar 1998+, Land Rover 1998+, Mercedes 1998+, Range Rover 1998+, Volvo 1999+

As with any aftermarket installation, please research and learn as much as you can about the vehicle before you start the install.



All General Motors (GM) vehicles built prior to 1995 with automatic transmissions and all Dodge Dakota trucks with automatic transmissions built prior to 1996 have a MECHANICAL type of NEUTRAL SAFETY SWITCH. All vehicles built after 1996 use an electrical type of neutral safety switch.

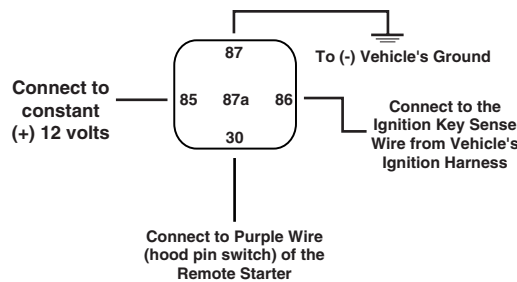
Applying +12 volts to the starter wire on any vehicle using a mechanical neutral safety switch will engage the vehicle's starter, regardless of the shifter's position. When the shifter is in Park or Neutral, the vehicle will just start up normally. If the vehicle is accidentally left in gear and power is applied to the start wire, such as by a remote starter, **the vehicle will lurch forward or back as it attempts to start.**

To test if your GM or Dodge vehicle is using a mechanical neutral safety switch system, you will only be able to remove the key from the ignition switch when the shifter is in the Park or Neutral position.

To prevent this problem from occurring when installing a DesignTech International remote starter on a GM vehicle or Dodge Dakota built prior to 1996.

1. You must leave the Enable Feature (option #7 in the factory setting). This is a safety feature that requires the user to turn the control switch OFF and then ON again each time they exit the vehicle in order for the unit to be operational. This feature will ensure that the user of the vehicle with the remote starter installed has made a conscious decision to allow the remote starter to start the vehicle the next time the transmitter button is depressed.

2. You must use the relay drawing below to create a circuit that will prevent the remote starter on these GM and Dodge vehicles from starting the vehicle unless the key is completely removed from the ignition switch.



As with any aftermarket installation, please research and learn as much as you can about the vehicle before you start the install. Instructions, technical tips and detailed wiring information is available on our web site: www.designtech-intl.com. Please refer to the information on the web site before starting ANY install or call DesignTech Technical Services at (800) 337-4468 or (703) 866-2000.



7955 Cameron Brown Ct. • Springfield, Virginia 22153 USA
Tel: (703) 866-2000 or (800) 337-4468 www.designtech-intl.com

*PLEASE HAVE MODEL NUMBER AND DIAGNOSTIC CODES
READY BEFORE CALLING TECH SUPPORT*

USER TIPS AND NOTES

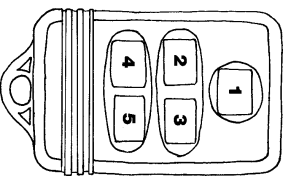
The Remote Car Starter must be "enabled" each time the driver has finished driving and taken out the key in order for the unit to start the vehicle remotely. After the key has been removed, you must turn Off the control switch and then turn it back ON again while no key is in the ignition. This "control switch" or "set switch" prevents unauthorized starting of the car by someone unfamiliar with the system who may be using the vehicle. If you forget to set the switch, it may also be activated by pushing the transmitter and holding the button down for ten seconds. To eliminate the need for this, see **Option #7**.

The AutoCommand® Remote Car Starter will turn the car off if the driver does not insert and turn the key within 10 or 15 minutes. After the AutoCommand® Remote Car Starter has started your car, simply put in the key and turn it to the "run" or "on" ignition position (not the crank position) to drive away.

The AutoCommand® Remote Car Starter has numerous safety and security features that make it difficult to steal your car without the key being in the ignition. Putting your car in gear, tapping the brake pedal or opening the hood will turn the unit off unless your key is in the ignition and turned to the "run" or "on" position.

If all features are hooked up, your transmitter will function as follows:

- Button 1:** Do not push for your first 'main' vehicle
Once: To operate vehicle #2 - then any of the 4 buttons (LED flashes red and green)
 Again: For vehicle #3 - then any of the 4 buttons (LED flashes red)
 Again: For vehicle #4 - then any of the 4 buttons (LED flashes green)
- Button 2:** Once: Start the car with all accessories left on
 Again: Stop the car
- Button 3:** Once: Turn on headlights for 30 seconds
 Again: Turn off headlights
 Hold down for 4 seconds for PANIC mode (45 seconds long)
- Button 4:** Lock the doors / arm the alarm
- Button 5:** Unlock the doors / disarm alarm (if you get 4 chirps – that means the alarm was triggered while you were away)
 Hold down for 4 seconds for Trunk



The LED on the transmitter will display 3 different colors - Red for button #2, Yellow for button #3, and Green for buttons #4 and #5. The transmitter is powered by a long life lithium battery (CR 2032 or DesignTech catalog #20059). The transmitter and receiver module are FCC and DOC approved.

Alarm Disarm without transmitter: If the doors are locked and the alarm is set and you've lost your transmitter, you can disable the alarm. Here is how: Enter the vehicle (alarm will sound) and insert the key and turn it to the "run" position (the position where the dash lights come on). Turn the On/Off switch off and on 4 times in a row to disable the alarm.

Valet Mode: Turning the Control switch off puts you in Valet Mode. In Valet Mode the Remote Car Starter and the alarm will not function. This lets you turn off the car starter when having the vehicle serviced. The only functions that work in Valet Mode are the keyless entry, lights and panic. The red LED dash light will flash twice every few seconds when in Valet Mode.

The Quick Stop Option™: You can leave the car running and take the key with you for a quick visit to a store. With the car running, push the Start button on the keychain transmitter just before pulling out the key. The car will run for 10 minutes or until you tap the brake or put the car in gear.

The Cold Start Option™: This automatically starts and runs the car for the preset run time (10 or 15 minutes) if the temperature drops below 0°F or if the battery voltage drops below 11 volts. Tapping the brake at any time after programming disables this feature. Here is how to set this feature: Hold the Start button down while the vehicle starts, runs, turns off and the lights begin to flash 5 times. Release the transmitter button. You have set the Cold Start Option™.

LIMITED LIFETIME WARRANTY

DesignTech International, Inc. Warrants to the original consumer/purchaser that this product shall be free of defects in material and workmanship under normal use and circumstances for the period of time that the original owner of this product owns the vehicle in which it is installed. When the original consumer/purchaser returns the product pre-paid to DesignTech International Inc., 7955 Cameron Brown Court, Springfield, Virginia 22153, USA within the warranty period, and if the product is defective DesignTech International, Inc. will at its option repair or replace such.

This warranty shall constitute the sole liability of DesignTech International, Inc. concerning the product. DesignTech International, Inc. expressly disclaims all other warranties INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANT ABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO PERSON, FIRM, OR CORPORATION IS AUTHORIZED TO ASSUME FOR DESIGNTECH INTERNATIONAL, INC. ANY OTHER LIABILITY IN CONNECTION WITH THE SALE AND USE OF THE PRODUCT. DesignTech International, Inc. and agents and distributors will bear no liability whatsoever for incidental or consequential damages or charges of any kind. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above disclaimer regarding incidental or consequential damages may not apply to you.

This warranty shall be effective only if the registration card is fully completed and mailed with proof of purchase to: DesignTech International, Inc., 7955 Cameron Brown Court, Springfield, Virginia 22153, USA within ten (10) days after date of purchase.

This warranty is void if the product or has been damaged or tampered with or if the product or any such parts have been opened. In all cases of damage during shipment, a claim must be filed with the shipping carrier and not with DesignTech International, Inc.

This warranty gives you specific legal rights; you may also have other rights which vary from state to state.

OUT OF WARRANTY REPAIRS

If the warranty card was not returned, or if you are not the original owner of the vehicle the product was installed in, DesignTech International, Inc. will at its option either (1) replace this product with a functionally similar (but not necessarily visually identical) refurbished product or (2) repair the original product and return it to the original consumer/purchaser after payment of repair/replacement charges have been received.

This registration card must be returned within ten (10) days of purchase.

Name _____ User's Age _____

Address _____

City _____ State _____ Zip _____

Phone Number: Home _____ Office _____

Place of Purchase _____ Date of Purchase _____

Product Purchased: _____ Price of Purchase: _____

Vehicle Make: _____ Vehicle Model: _____ Year: _____

This product was purchased for: () Myself () Spouse () Relative () Friend

How did you first become interested in this product?

() Retailer Newspaper Ad () Magazine Ad () In-Store Display

() Newspaper / Magazine Article () Mail Order () Friend / Relative

() In-Store Salesperson () Other _____

Please send me **FREE** information on other innovative DesignTech products.



7955 Cameron Brown Court, Springfield, Virginia 22153, USA
 Tel: 703-866-2000 Fax: 703-866-2001

Daily Start™: This allows you to start the vehicle at the same time the next day. For example, if you leave for work at the same time each morning you can use the Daily Start™ feature to automatically start your car the next day. Here is how: Start your car with the transmitter as usual. When you enter the vehicle and before you put the key in the ignition, put your foot on the brake to turn the AutoCommand® off. Now within five seconds toggle the control switch off and on once while your foot is still on the brake. The dash lights will flash once to signal the setting of this option. Your vehicle will now start approximately 23 hours and 50 minutes later and run its normal cycle. You can still start the vehicle with the key or via the transmitter anytime without cancelling out this option.

Safety Notices:

1. When taking your car in for any service or repairs, disable the remote starter by switching the Control switch to the OFF position. Inform the mechanic.
2. Never leave your keys in the Ignition when the vehicle is unattended.
3. Do not use this product in a closed garage to avoid excessive carbon monoxide build-up.

Available Accessories:

Universal Alarm Bypass Module allows remote car starter installation on newer vehicles with factory anti-theft systems such as VATS, P.A.T.S., Passlock I, Passlock II, Pass-Key III, Saturn, Securilock, and Transponder systems. Extra transmitters for more than one user in the family. Up to four transmitters can be used with each receiver in the vehicle.


Our Garage Door Receiver hooks into your existing garage door system and lets your transmitter open your garage. Part #30021.

Our Long Range Antenna doubles your range. Part #20314.

These products can be purchased through your dealer or directly from DesignTech International, Inc. Shipping and handling are included in the prices.

Part No.	Product	Cost in US\$
20402	Universal Alarm Bypass Module (also goes by part no. 27402 or 29402)	\$39.95
28871	Extra 5 button transmitter	\$59.95
20059	Extra Lithium Transmitter Battery	\$ 7.95
20314	Long Range Cellular Style Antenna	\$59.85
30021	Garage Door Receiver Unit	\$49.95
20043	Bosch 30 amp relay	\$ 9.95
20611	4 Pin Shock Sensor	\$49.95
20405	Siren	\$49.95

Place
Stamp
Here

 **DesignTech**
INTERNATIONAL, INC.
7955 Cameron Brown Court
Springfield, VA 22153-2809

 **DesignTech**
INTERNATIONAL, INC.
7955 Cameron Brown Ct. • Springfield, Virginia 22153 USA
Tel: (703) 866-2000 or (800) 337-4468 www.designtech-intl.com

PLEASE HAVE MODEL NUMBER AND DIAGNOSTIC CODES
READY BEFORE CALLING TECH SUPPORT