

V1.4

# **Smart Entry™ Remote Keyless Entry**

***Model 20094/20994***

For +12 volt vehicles with existing electric locks

## **Installation Manual**



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

Congratulations on your purchase of the **Smart Entry™** from DesignTech.

**Smart Entry™ Protects You:**

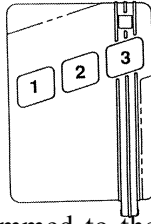
Lock and unlock your doors & trunk by remote control.

**Optional Features Include:**

Car Locator

Remote Panic/Rescue alarm

Turn on your headlights by remote control.



The transmitter which comes with the unit is already programmed to the receiver and includes a long life lithium battery that will last many years.

**CONTENTS:**

**Smart Entry™ Module**

Transmitter (3 button)

Parts Baggie containing:

4 cable ties

2 "Protected by DesignTech" window stickers

**Tools Required:**

Test / Volt meter

Set of screw drivers

Wire cutter and strippers

Soldering iron and solder

Crimping tool

**Smart Entry™** has a 10 amp headlight relay output. The unit also has power transistors(+/-) to control Lock and Unlock. All other outputs are negative transistor outputs (-400mA) and require external relays.

**1. Mounting and Connecting the module:**

Screws or cable ties may be used for mounting the module in the driver's left kick panel area. We recommend mounting after everything has been completed and tested fully. Be sure to leave access to the LED and red push button on the side of the case for programming.

Make sure that the white antenna wire is as straight as possible and not likely to be touching any moving parts. Make sure not to let this white antenna wire touch metal ground as this will severely impede transmitter range.

**2. Wire Connections**

Connect the wires in the harness by soldering the wires as perscribed below. Do not connect the harness to the Smart Entry module until step 11.

**STEP COLOR WIRE FUNCTION**

**A description of each wire in the harness and its connection as is:**

- |    |             |  |
|----|-------------|--|
| 1. | BLACK       | Chassis ground. Strip off 1/2" of insulation of the end of the wire and screw to the metal frame in the kick panel area.   |
| 2. | RED         | +12 volts constant such as the ignition power feed in the steering column area. (15 amp fuse must remain in-line).   |
| 3. | BROWN/WHITE | This is the factory Alarm Disarm wire. This wire is used to disarm a factory alarm when using this keyless entry module. In most cases you will not need this wire unless an alarm sounds when unlocking the doors by remote control.  |
| 4. | ORANGE      | Ignition input -- connect to an ignition wire which has +12 volt when the key is in the ignition (normal running) position but has no voltage when the key is out. This wire is optional and when connected, prevents the unit from responding to the transmitter when the ignition is on. |
| 5. | GREEN/WHITE | Trunk Release. For this option your trunk must have an electric trunk release. This optional output is a (-400 mA)   |

negative transistor output. In most cases you will need to use an external relay (not supplied) when hooking up this wire. See Page 8 for a detailed hook-up using a relay.

6. **BROWN** This is used for Dome Light activation. This optional wire can control a relay to activate the dome light for 25 seconds after the doors are unlocked with the transmitter. This is a (-400mA) negative transistor output. This wire must drive an external relay.
7. **BLUE** Horn/Siren. This is an optional transistor output (-400 mA) which can be used to drive a horn or be used with a relay to drive a siren. If connecting to the horn, connect to a wire that rests at +12 volts and switches to 0 volts when you honk the horn. See programming options for changing this output from a pulsed horn output to a constant siren output.
8. **YELLOW** The optional yellow wire activates the low beam headlights or parking lights. This feature provides visual indication that the doors have been locked or unlocked. Locate a wire that switches to +12 volts when the lights are turned on.

## 9 & 10 Keyless Entry Wires

Note: Your vehicle must have electric locks

These are flip/flop transistor outputs (+/- 400mA)

WHITE/RED      Negative - Lock      Positive - Unlock

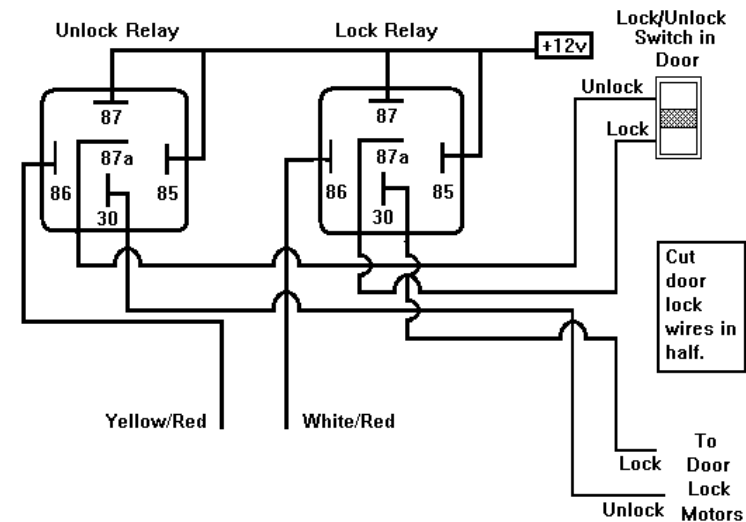
YELLOW/RED      Negative - Unlock      Positive - Lock

Determine the polarity of your door lock system using a test meter.

For **Negative Locks** (the lock wire sees a ground signal briefly as the electric locks are locked) - connect the White/Red to the Lock wire and the Yellow/Red to the Unlock wire.

For **Positive Locks** (the lock wire see a +12 volt signal briefly as the electric locks are locked but does not see ground when they are inactive) - connect the White/Red to the Unlock wire and the Yellow/Red to the Lock 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). Use the diagram at the bottom of the previous page. **Two Relays are Required**



**Reverse Polarity Door Lock Diagram**

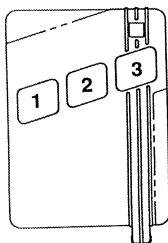
## 11. Powering Up The Unit

Plug the harness into the module at this time. Note that upon first power up -- the red LED light on the module flashes 4 times slowly followed by rapid flashes and then stops to indicate the unit is ready for normal operation.

## 12. TRYING OUT THE UNIT:

*Always keep one window rolled down to avoid locking yourself out of the vehicle.*

Your transmitter has already been factory coded to the **Smart Entry™**. (If it does not trigger any of the following functions, and you have already checked your connections, follow the steps for Transmitter Code Learning at the end of the manual.) Generally, the transmitter button should be held down until the **Smart Entry™** unit responds with the desired feature.



Button 1: Hold for one second -Lock (One chirp, One light flash)  
Again: Hold for one second -Unlock (Two chirps, Two light flashes)

Hold for four seconds -Unlocks and opens Trunk

Button 2: Hold for One second -Car Locator (Brief Horn/Siren sound)  
Hold for four seconds -Panic Alarm (45 second horn/alarm sound)

Button 3: Hold for one second -Turns the Lights on for 25 seconds  
Again: Hold for one second -Turns the Lights off

NOTE: If the Panic Alarm is sounding -- Button 2 held for 2 seconds will turn off the Panic Alarm or the Panic Alarm will automatically silence after 45 seconds.

## 13. PROGRAMMING OPTIONS:

**There are 3 options which can be changed**

### 1. Lock Follow Ignition (Factory setting is "No Lock Follow Ignition")

This option will automatically lock the doors 2 seconds after the car is started, and will automatically unlock the doors when the key is removed from the ignition

### 2. Single Pulse / Double Pulse Locks (Factory setting is Single Pulse)

This option gives a double pulse to Lock and Unlock the doors. The double pulses are separated by 1 second.

### 3. Horn-vs-Siren (Factory setting is Horn)

This product gives you the option of having a pulsed output for a car horn or a constant output for a siren.

**This section will set or reset any of the three options.**

- 1) Push the red button on the side of the case of the receiver and the red LED will flash once letting you know you are in option 1. Push the red button again to scroll to option 2 (the LED will flash twice) and again for option 3 (the LED will flash 3 times) -- then back to option 1 again if necessary.
- 2) When you are at the option you want to change -- simply press the Middle button on the transmitter to choose the function you want. After a few seconds of holding the transmitter button down -- the red LED on the receiver will flash once indicating you've set the optional setting or twice indicating you've returned to the factory setting.
- 3) The unit will exit out of programming in 5 seconds by flashing the LED 3 times.

**Follow the chart below and on the next page to set the features desired:**

#### Option 1 — Lock Follow Ignition:

This option will lock the doors 2 seconds after the key is inserted into the ignition, and will automatically unlock the doors when the key is removed from the ignition.

##### Factory (2 Flashes)

No Lock Follow Ignition

##### Option (1 Flash)

Lock Follow Ignition

#### Option 2 – Single Pulse / Double Pulse locks:

This option gives a double pulse to the Locks and Unlocks.

##### Factory (2 Flashes)

Single Pulse Locks

##### Option (1 Flash)

Double Pulse Locks

#### Option 3 — Horn-vs-Siren:

This gives an option for pulsed output for a horn or a constant output for a siren:

##### Factory (2 Flashes)

Horn Output

##### Option (1 Flash)

Siren Output

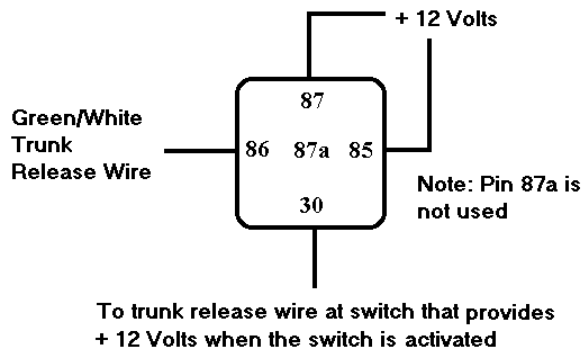
#### 14. Example of optional Trunk hookup using an external relay:

Take a relay with 10 amp or higher capacity and a 12 volt coil. Locate the push button for the trunk (usually in the glove compartment). You will notice two wires behind this push button switch. Connect the Smart Entry's Green/White Trunk wire to one side of the relay coil and constant +12 volts to the other side of the coil.

If you are using one of the automotive industry standard relays like the Bosch 30 amp relay -- the connections would be as follows:

- Pin 85 (Positive side of relay's coil) +12 volts constant
- Pin 86 (Negative side of relay's coil) Green/White wire
- Pin 30 (Relay's common contact) One side of the trunk push button wire.  
See Below
- Pin 87 (Relay's normally closed contact) +12 volts
- Pin 87a Not used

#### Example of Trunk hookup using an external relay:



**15. Transmitter Code Learning:** Your Smart Entry module comes factory coded to one of 16 million different codes and is already programmed. If your unit does not respond to your transmitter in any way after checking the connections, or if you want to have additional transmitters (up to 3 more for a total of 4) to trigger your Smart Entry module -- follow the following directions:

1. Disconnect power for 5 seconds. Re-apply power - you will see the LED flash 5 times quickly, then begin to flash rapidly.
2. While the LED is still flashing rapidly push the red button on the side of the Smart Entry (the red LED will flash once) then push and hold the left button on the transmitter for several seconds until the red LED on the receiver comes on -- stop pushing the transmitter button.
3. If you have a 2nd transmitter, within 5 seconds push the left button on this transmitter for a few seconds until the red LED on the receiver comes on. Release transmitter button. Repeat for up to 4 total transmitters.
4. Wait 5 seconds for receiver to exit out of code learning mode -- the red LED on the receiver flashes 4 times.

**Note: Teaching the module a new transmitter code will erase all previously learned codes -- so all transmitters must be taught.**

For any technical assistance regarding this product you may call DesignTech on our toll-free telephone number - (800) 337-4468.

## OTHER ACCESSORIES

- A. Extra transmitters for more than one user in the family. Up to four transmitters can be used with each Smart Entry™.
- B. Garage Door Receiver Unit will allow Your **Smart Entry™** transmitter to operate an electric garage unit.
- C. You can remotely control your vehicle with our AutoCommand model 20022. Simply pushing the lock button twice on your Smart Entry will start your vehicle.

These products are available through your dealer or directly from DesignTech :

3 button transmitter	20061	\$49.95
30 amp relay with harness	20047	\$17.95
Siren	20405	\$49.95
Transmitter battery(CR2032)	20059	\$7.95
Universal Garage Door Module	30021	\$49.95
AutoCommand Remote Starter	20022	\$99.95

All prices are in US Dollars and include shipping and handling.

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

FCC ID: ELGKEY2    DOC: \_\_\_\_\_

User is cautioned that changes or modifications not expressly approved by DesignTech could void the user's authority to operate this equipment.



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## LIMITED 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 a period of **two (2) years** from the date of original purchase for use. When the original consumer/purchaser returns the product 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 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

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 C.O.D. covering all reasonable repair or replacement charges if the product is returned prepaid to DesignTech International, Inc., 7955 Cameron Brown Court, Springfield, VIRGINIA 22153, USA after the two year warranty period has expired.

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

NAME \_\_\_\_\_ User's Age \_\_\_\_\_

ADDRESS \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

PLACE OF PURCHASE \_\_\_\_\_ DATE OF PURCHASE \_\_\_\_\_

**Product Purchased:** \_\_ Smart Entry 20094/20994 \_\_\_\_\_

Purchased for : \_\_\_\_\_ YOURSELF \_\_\_\_\_ SPOUSE

\_\_\_\_\_ OTHER FAMILY MEMBER \_\_\_\_\_ FRIEND

Where did you learn about this product? \_\_\_\_\_

Vehicle Make: \_\_\_\_\_ Vehicle Model: \_\_\_\_\_ Year: \_\_\_\_\_

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



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