

Dakota Digital

CMD-9000

COMMANDER SERIES REMOTE CONTROL ENTRY SYSTEM

INTRODUCTION

Thank you for purchasing the CMD-9000 Commander from Dakota Digital. This, along with many other products that Dakota Digital has to offer, represents the latest in electronics technology for the street rod, classic car, sport truck, or custom vehicle.

The CMD-9000 comes complete with receiver/controller, two key chain transmitters, one sealed emergency release switch, and three dual relay packs. The unit can be installed and configured to remotely release the driver's and passenger's door latches, provide up and down control of both the driver and passenger side window, as well as release the trunk latch or operate a trunk lift up and down. In addition to this, an auxiliary output is provided for an external relay. This auxiliary relay can be set up as momentarily on or as latch-on, latch-off.

The system incorporates a self-resetting circuit protection device on the latch release outputs to protect against short circuits. A safety feature partially disables the system when the ignition is on to avoid the accidental opening of a door during vehicle operation. With the ignition on, the only functions that are allowed to work are the control of the power windows. An emergency release switch can be concealed on the underside of the vehicle to roll the driver's window down should the door ever be closed with the transmitter on the inside and you on the outside.

ADDITIONAL TRANSMITTERS

The transmitters supplied with your remote system are serial number coded for security. They also use a code-hopping system that prevents the transmitter signal from being picked up and duplicated to eliminate security problems. Each unit can "learn" up to 7 transmitters. It is also possible to program one transmitter into more than one receiver. If you have more than one vehicle with the CMD-9000 system you can program all of the transmitters into both units. Transmitters from other manufacturers, such as car alarm systems, will not work with the CMD-9000.

RADIO FREQUENCY INTERFERENCE STATEMENT

FCC IDENTIFIER: OVBTX-434-5B

This device complies with part 15 of 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.

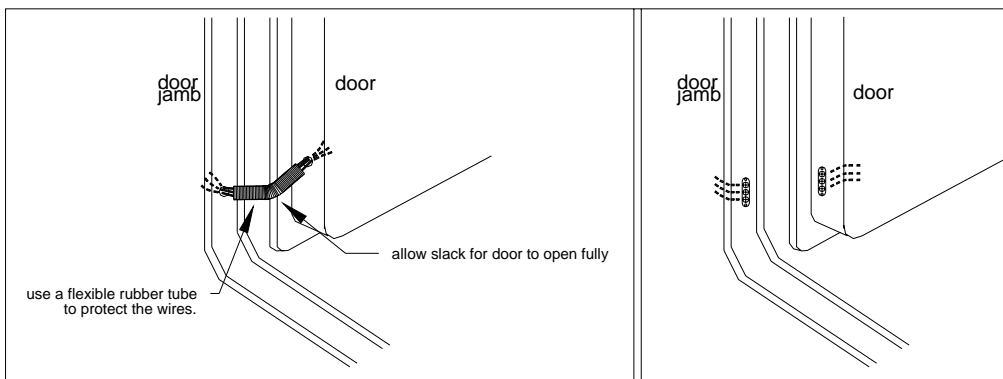
INSTALLATION

The receiver should be mounted on the interior of the vehicle so that it is not exposed to moisture. It can be secured using the four mounting holes or with a double sided adhesive tape, such as Velcro. The main harness plugs into one end of the unit with a 14 pin connector and the antenna plugs into the other end with a phone-style connector. The antenna should be mounted away from any power wires.

The color code for the main harness is listed below. The unit only needs the red and black wires connected to operate. The others should be hooked up according to your application. The CMD-9000 should only be connected to a 12 volt battery for power and never solely to a battery charger.

RED	constant 12 volt battery source
BLACK	chassis ground
YELLOW	ignition key switched 12 volts
BROWN	driver's window emergency switch
BLUE	driver's door latch actuator
GREEN	passenger's door latch actuator
PURPLE	trunk release latch actuator
WHITE/RED	trunk lift motor raise relay
WHITE/BLUE	trunk lift motor lower relay
ORANGE	passenger's window up relay
PINK	passenger's window down relay
WHITE	driver's window up relay
GRAY	driver's window down relay
WHITE/GREEN	auxiliary relay output

The blue, green, and purple wires are connected to internal relays and can feed 12 volts out at up to 10 amps for the full pulse duration, 15 amps briefly. The white, gray, orange, pink, white w/ green strip, white w/ red strip, and white w/ blue strip are negative switched outputs designed to only turn on external relays. This combination of internal and external relays was used to reduce the number of wires going through the door jams to a minimum. To eliminate having any wires running through your door jams, use **DAKOTA DIGITAL MAGNUM SHOOTERS**. Refer to the following diagrams for connection to your particular actuators and power windows.



Wiring through door jamb

Using MAGNUM SHOOTERS!

DOOR AND TRUNK LATCH WIRING.

Latches and latch actuators are not included in the base kit. These are available separately. If door motors or solenoids are already mounted in the vehicle, the remote entry system can connect directly to them. **For solenoids which require more than 10 amps, such as Dakota Digital's PDR-2, an external relay should be used for powering the solenoid.**

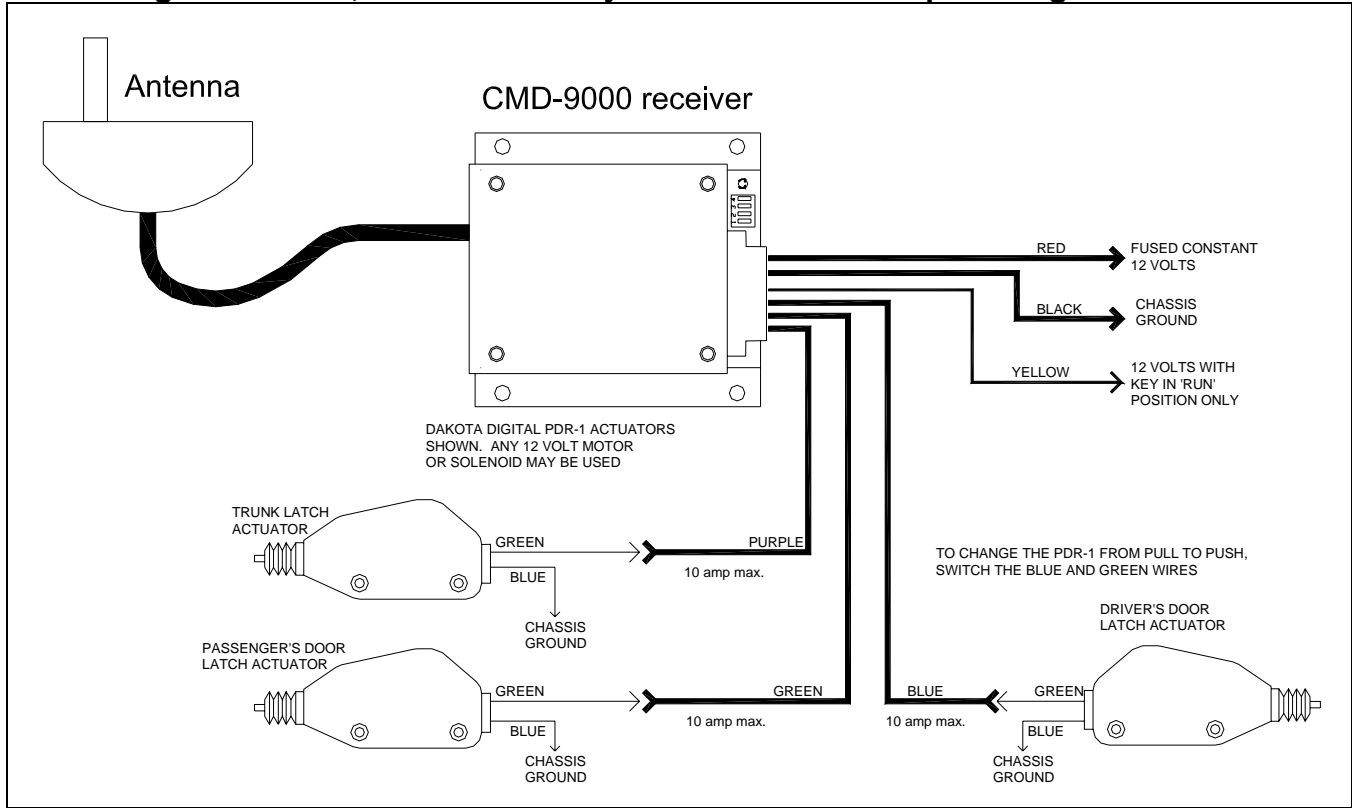


Figure 1. Door and trunk latch wiring diagram.

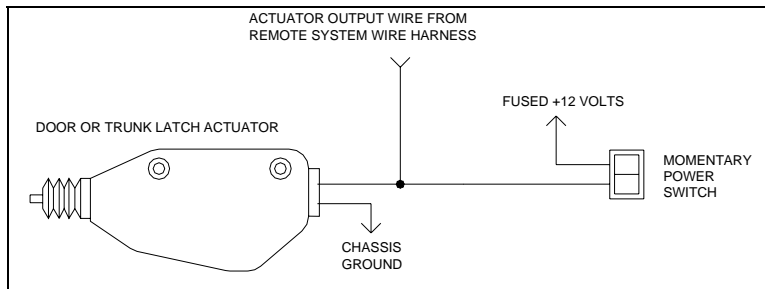


Figure 2. Wiring to control actuator with the remote and an inside switch.

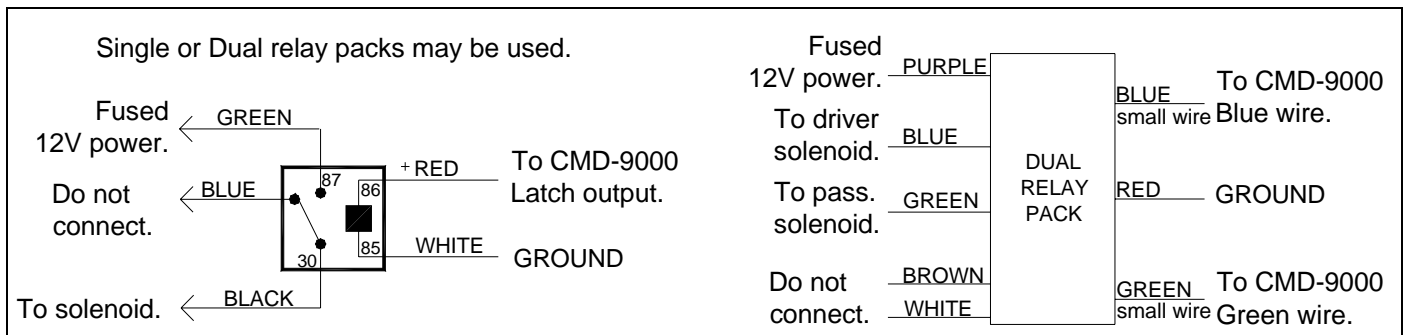


Figure 3. Wiring a high current relay for 10 amp or larger solenoids.

POWER WINDOW WIRING

Power window regulators are not included with the remote system base kit. They are available separately from Dakota Digital. This remote system is designed to wire into existing power windows or installed at the same time as power windows are added to the vehicle. Use the diagram which matches the way your power windows are connected. The relays are designed to duplicate the function of the power window switch you are using.

Because the switch pin-out varies with different switch types and between different manufacturers, refer to your power window wiring instructions for window regulator and switch color code and pin location. The diagram below shows how to hook up the remote system to an existing power window harness.

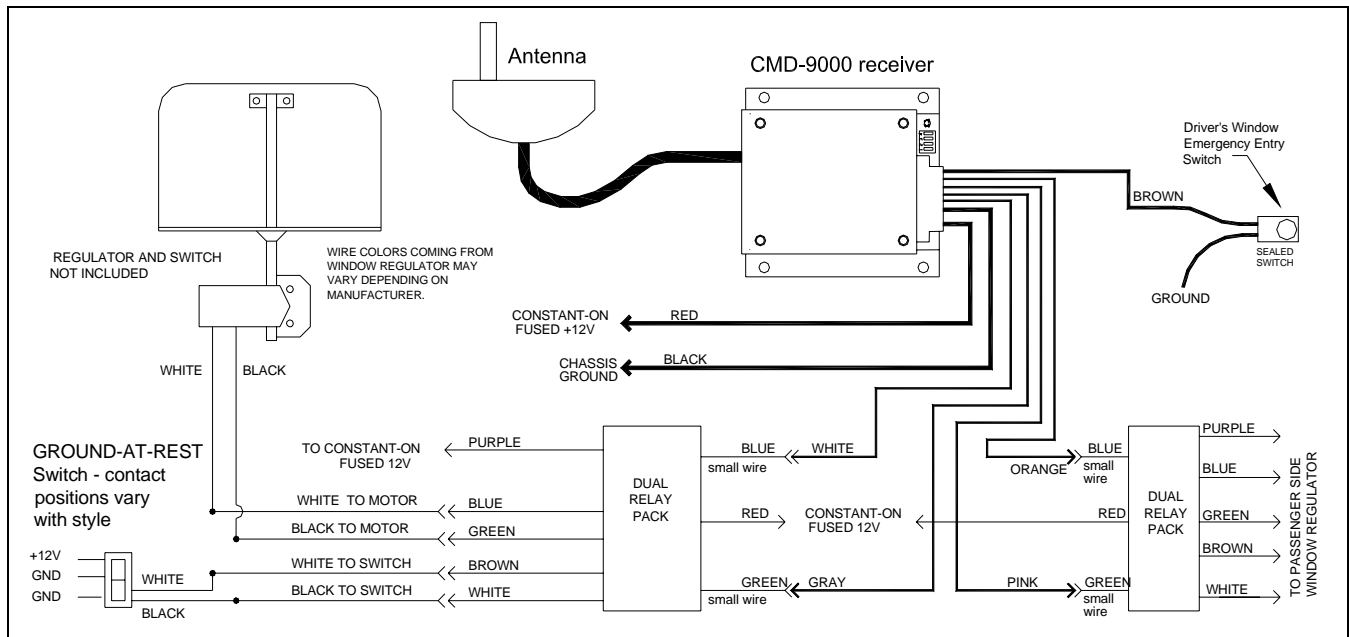


Figure 4. Connection to Specialty, Downs, Balls, GM, and other power window regulators using a 5-wire or center-position grounding switch.

This wiring diagram can be used with most power window and switch combinations. The existing switch (or in some cases relays) keep the two wires to the motor grounded when the window is at rest. To move the window up, the "up" wire is switched to 12 volts while the "down" wire remains grounded. To move the window down, the opposite occurs. For both the existing switch and the remote system to be able to move the window, the wires between the switch and the window regulator need to be cut and separated. These wires are then connected to the supplied dual relay pack. One relay in the pack will roll the window up, the other down.

While the remote system itself should not be mounted in the door, the relays can be. Mount them so the wires are going out the bottom. This will prevent water from catching in it. The wiring for the passenger side is identical to the driver's side.

POWER WINDOW WIRING

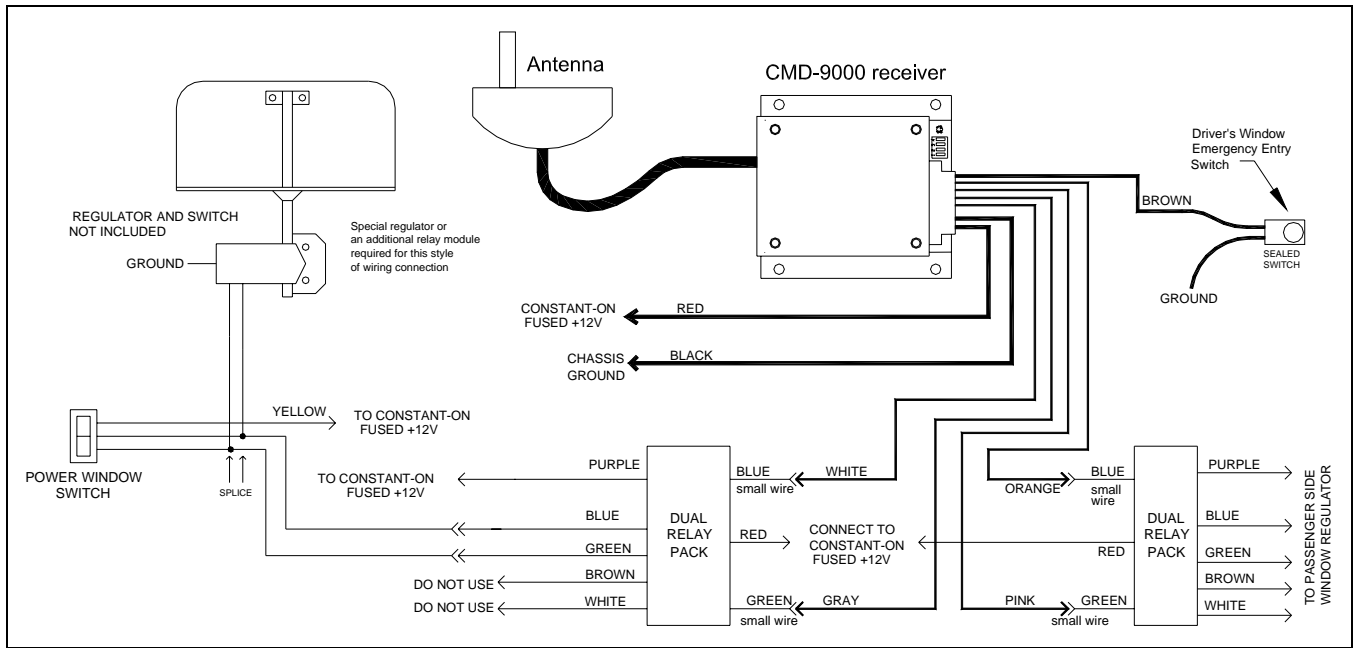


Figure 5. Connection to power window regulators with a three wire 12 volt switch.

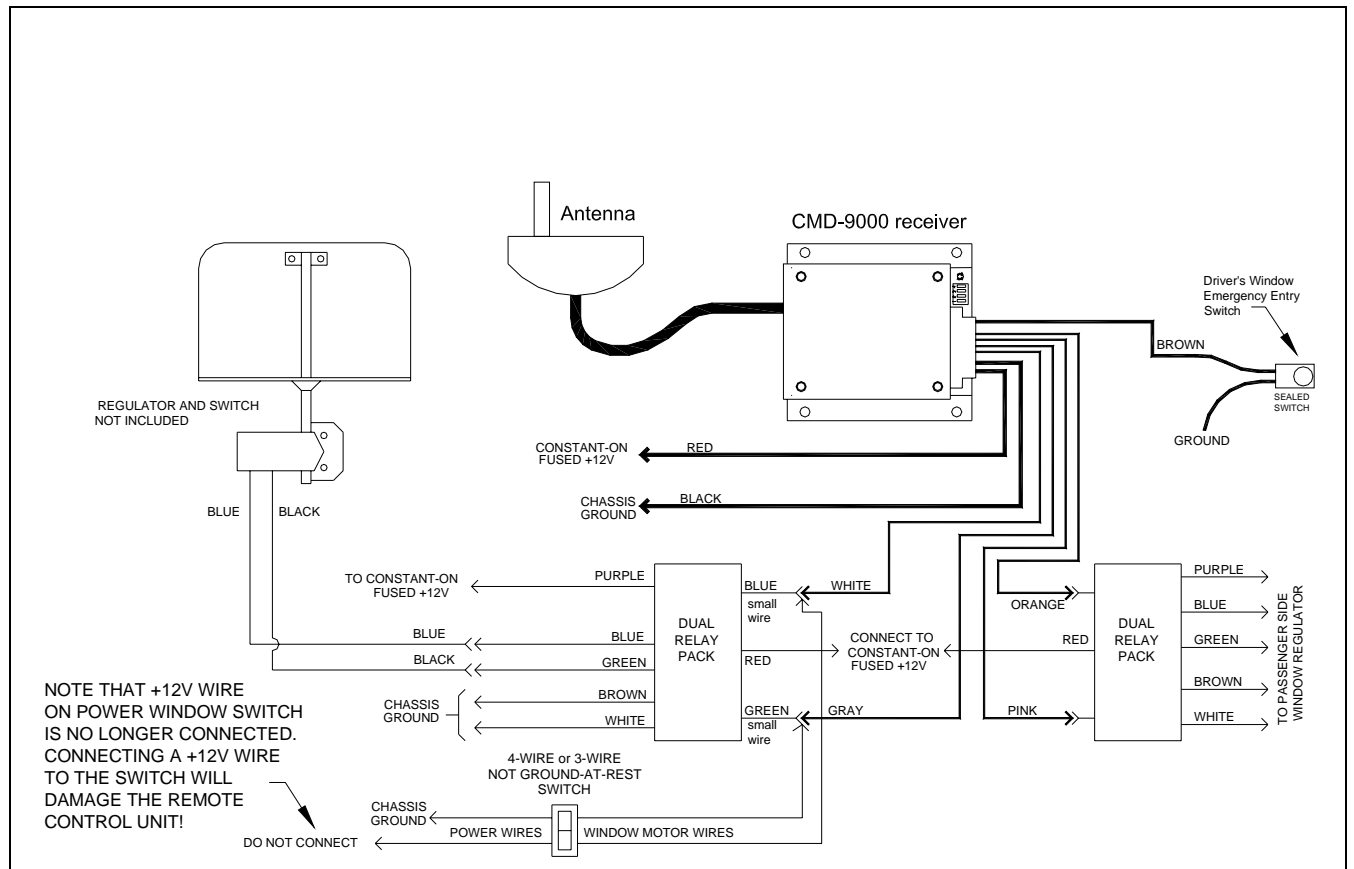


Figure 6. Connection to power windows with 4-wire switch (not center position grounding).

POWER TRUNK LIFT WIRING

The trunk lift motor is not included in the base package. These are available from Dakota Digital separately.

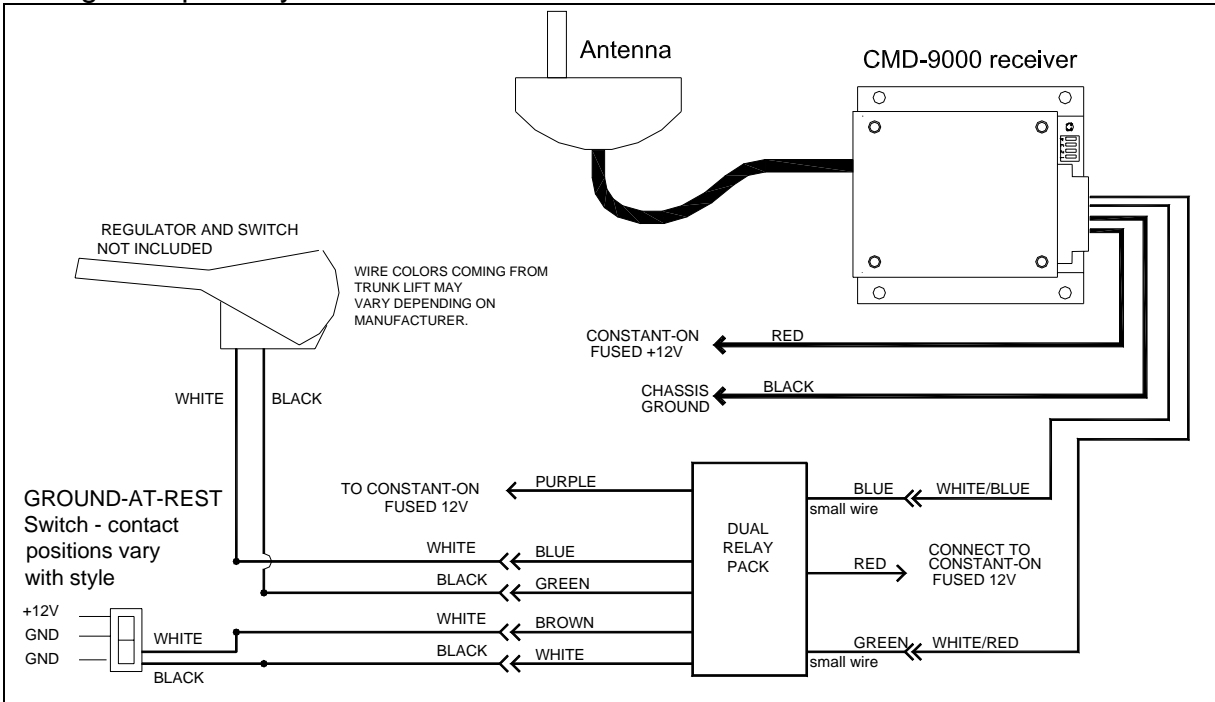


Figure 7. Connection to power trunk lift motor.

SINGLE RELAY WIRING FOR AUXILIARY OUTPUTS

The single relay shown is not included in the base kit. These are available from Dakota Digital (RLY-1), however any 12 volt, automotive relay will work.

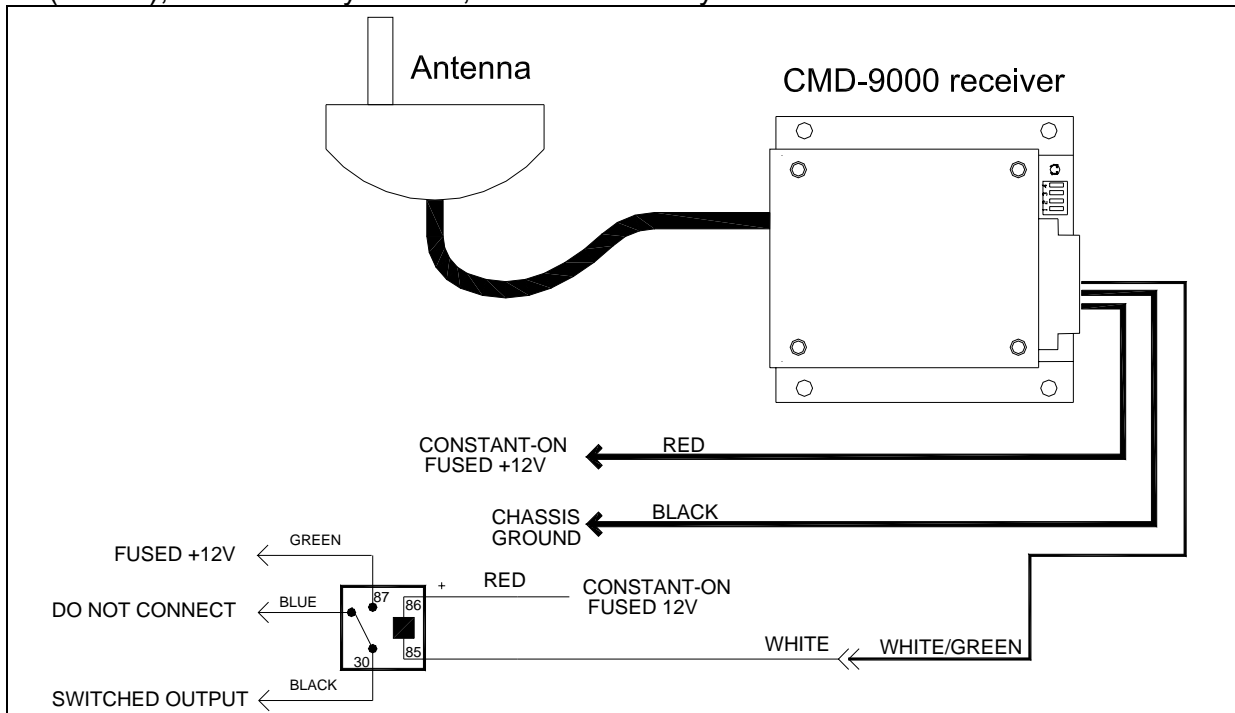


Figure 8. Connection to relays for operating accessories with auxiliary outputs. The White/Red and White/Blue wires can be connected to single relays in this same way.

POWER DOOR LOCK WIRING

The trunk raise/lower channels can also be used for power door locks to add more security to the vehicle. The door lock actuators are not included with the base package. These are sold separately if they are needed for your application.

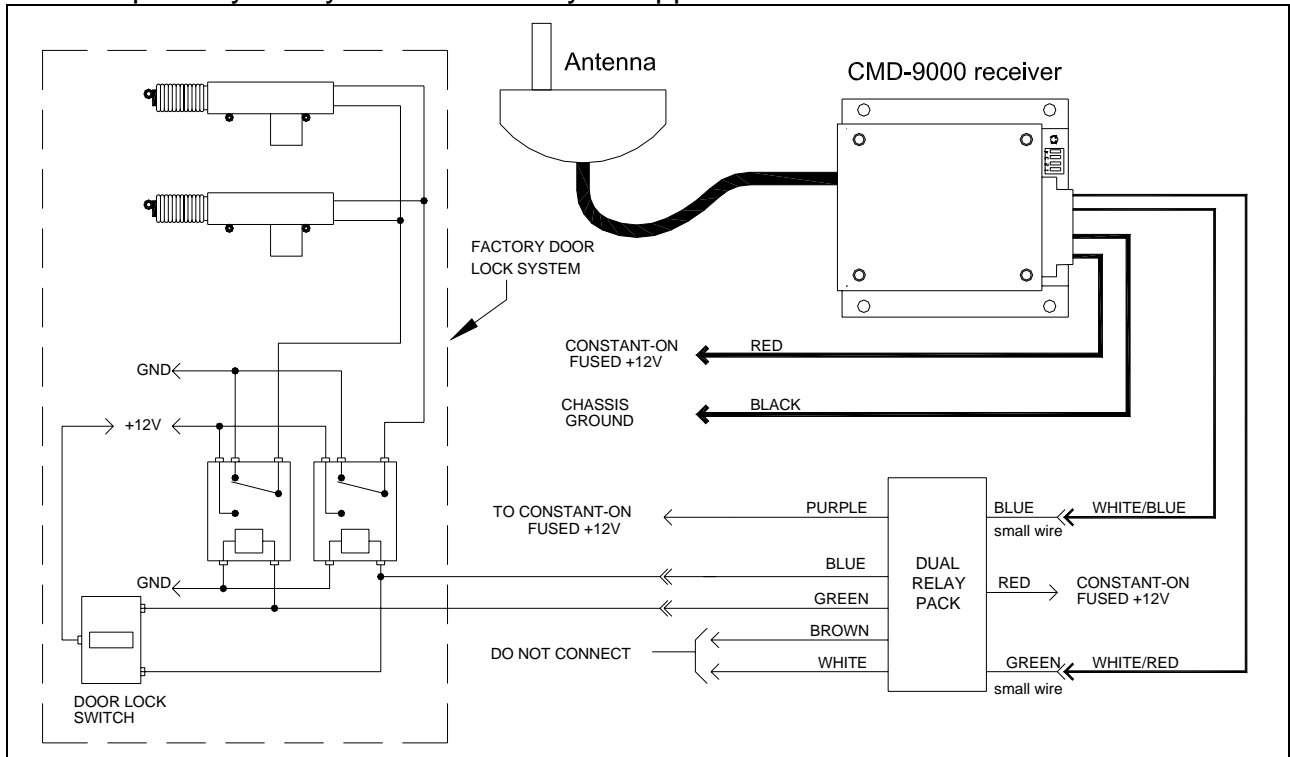


Figure 9. Connection to power door locks with 3-wire, 12 volt switch.

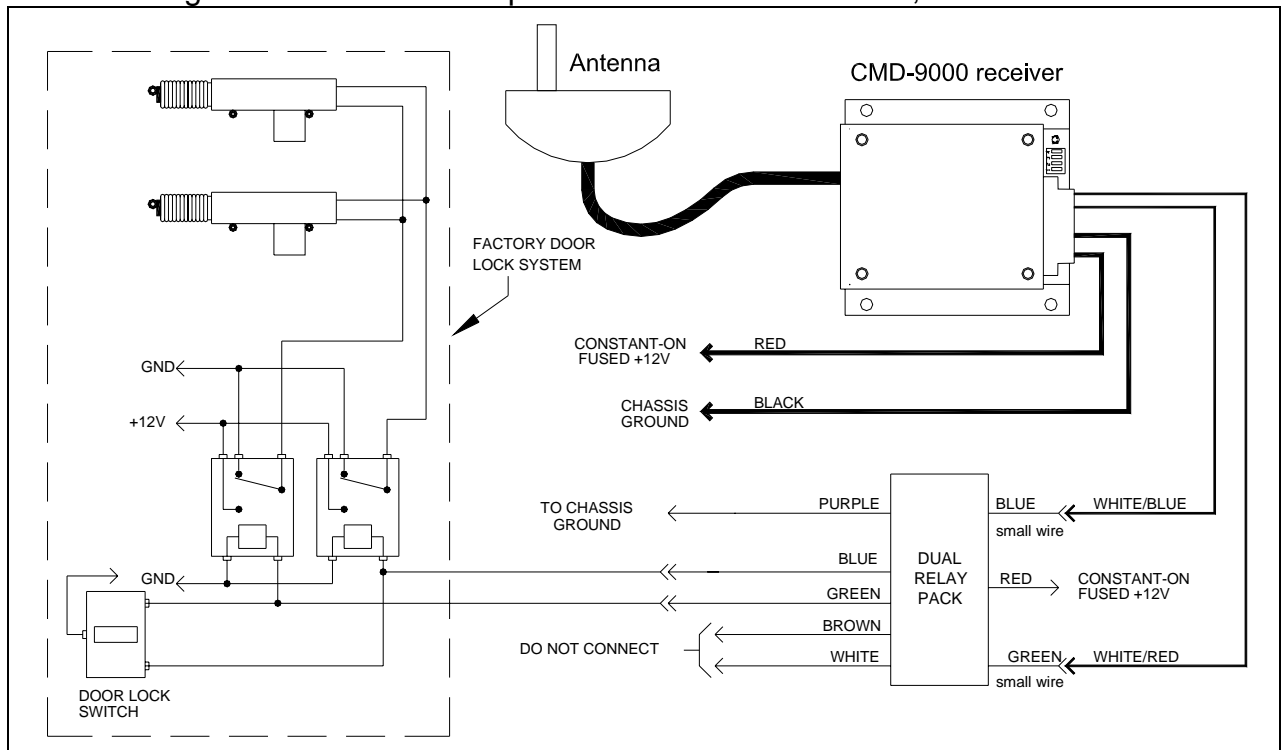


Figure 10. Connection to power door locks with 3-wire grounding switch.

POWER DOOR LOCK WIRING

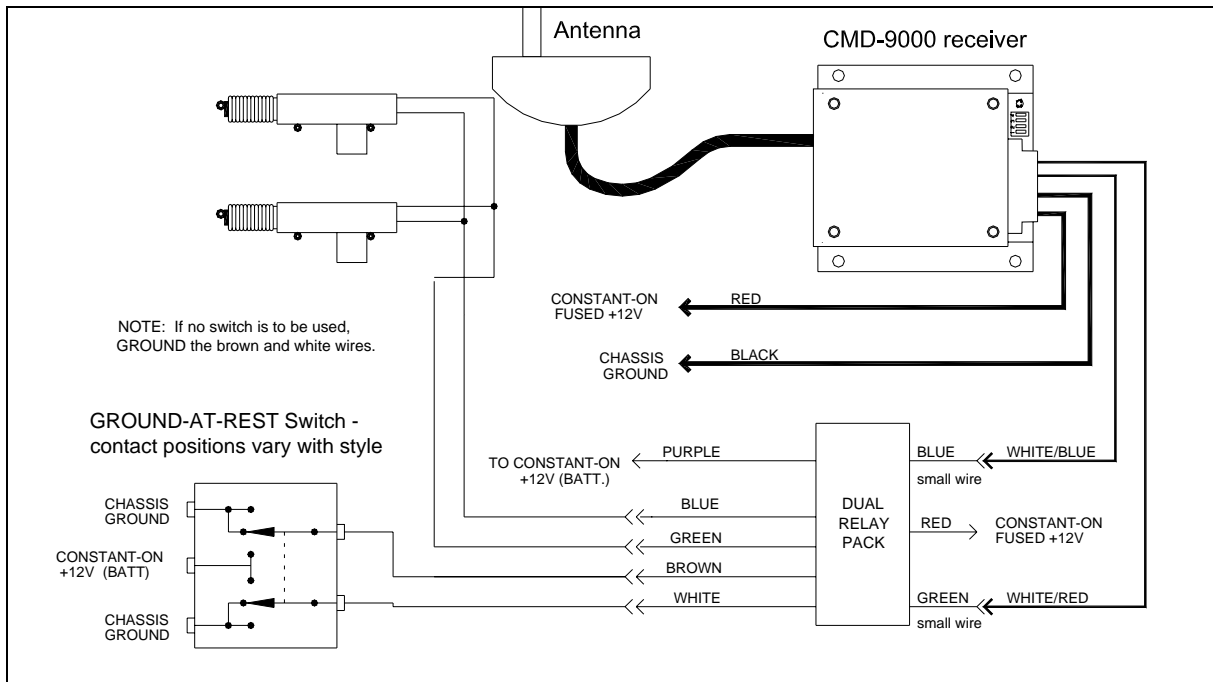


Figure 11. Connection to power door locks with a 5-wire switch.

WIRING TO RELEASE 4 DOOR LATCHES

Buttons 1 and 2 will operate door latch releases instead of window up/down. For solenoids which require more than 10 amps, such as Dakota Digital's PDR-2, an external relay should be used for powering the solenoids on outputs 3 and 4. (see figure 3.)

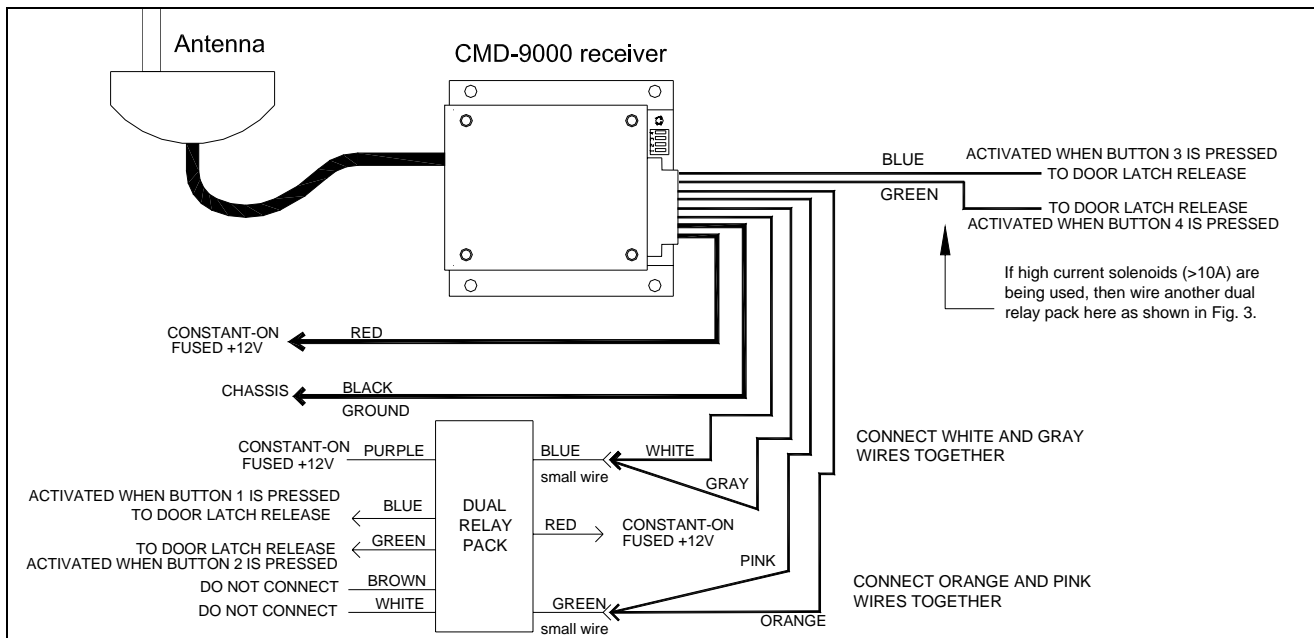
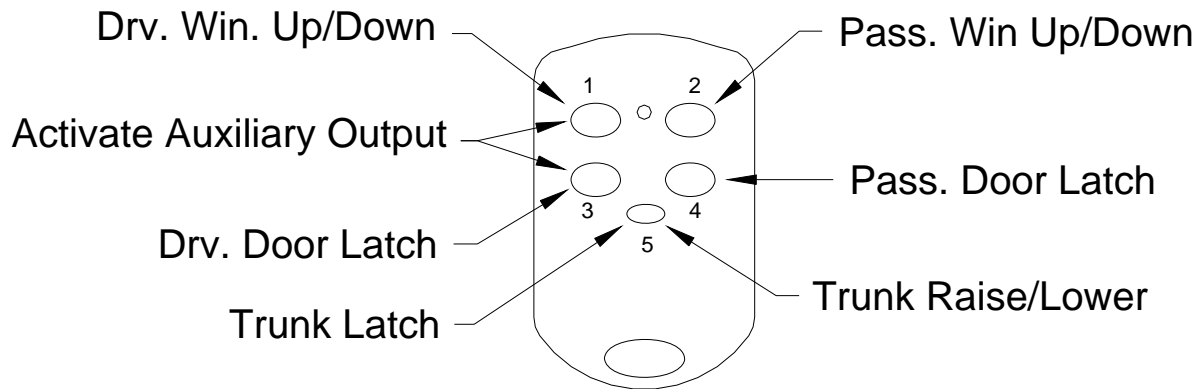


Figure 12. Connection for operating four door latch releases.



OPERATION FOR MODE 1, DIP switch #1 OFF

The key chain transmitter has five buttons. They are referred to below as button 1, 2, 3, 4, and 5. Buttons 1 and 2 are on the top, to the right and left of the green light. Buttons 3, 4, and 5 are below them with button 5 in the bottom center.

Button 1 controls the driver's window. The first time it is pressed it will roll the window down until the button is released. The next time it is pressed it will roll the driver's window up until it is released. Button 2 controls the passenger's window. It works the same as button 1, reversing the window direction each time it is pressed.

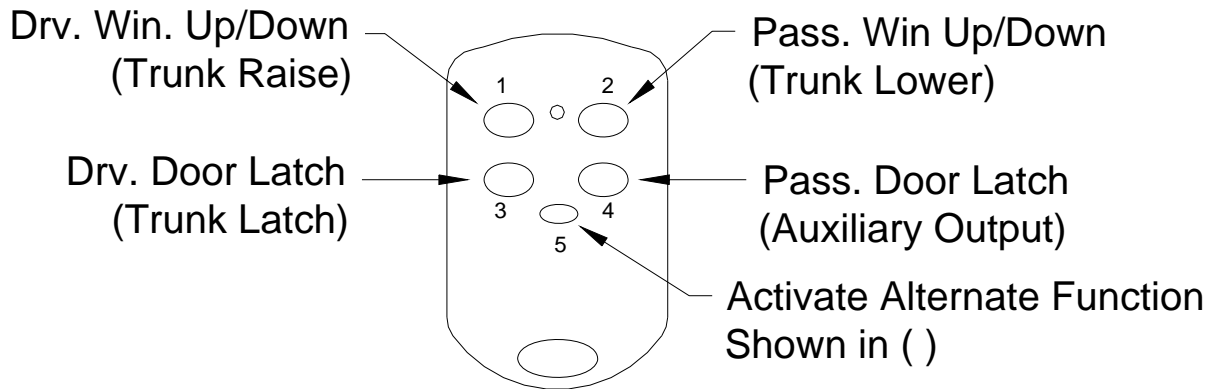
Button 3 releases the driver's door latch. It will send 12 volts to the actuator for about one second. The relay is turned off automatically to prevent burning out the latch release actuator. Button 4 releases the passenger's door latch. It will send 12 volts for approximately one second.

Button 5 Trunk latch application: Pressing button 5 will activate the third internal relay for about one second. The white w/blue and white w/red wires should not be used.

Button 5 Trunk lift, lock/unlock, or similar: The first time the button is pressed it will raise the trunk (or unlock doors) until it is released. The next time it is pressed it will lower the trunk, (or lock doors) until it is released. The purple wire should not be used.

Button 1 and 3 pressed at the same time will activate an extra relay which can be used to operate almost any accessory. When DIP switch #2 is off, the relay will remain on as long as the buttons are held. When the buttons are released it will turn off. When DIP switch #2 is on, the relay will turn on and remain on the first time the buttons are pressed. The next time the buttons are pressed the relay will turn off.

When the ignition key is on, the only buttons that will work are 1 and 2. Buttons 3, 4, 5, and 1-3 are disabled. This safety feature will not allow the doors or trunk to accidentally release while the vehicle is in motion. This disables the key chain transmitter only. The emergency release switch will not be disabled.



OPERATION FOR MODE 2, DIP switch #1 ON

The key chain transmitter has five buttons. They are referred to below as button 1, 2, 3, 4, and 5. Buttons 1 and 2 are on the top, to the right and left of the green light. Buttons 3, 4, and 5 are below them with button 5 in the bottom center.

Button 1 controls the driver's window. The first time it is pressed it will roll the window down until the button is released. The next time it is pressed it will roll the driver's window up until it is released. Button 2 controls the passenger's window. It works the same as button 1, reversing the window direction each time it is pressed.

Button 3 releases the driver's door latch. It will send 12 volts to the actuator for about one second. The relay is turned off automatically to prevent burning out the latch release actuator. Button 4 releases the passenger's door latch. It will send 12 volts for approximately one second.

Button 5 activates the alternate functions for each button. Press and release button 5 and then press one of the other buttons for the functions listed below.

Pressing button 5, and then button 1 will activate an external relay to raise a trunk lift, unlock doors, or any other function. It will remain on until the button is released.

Pressing button 5, and then button 2 will activate an external relay to lower a trunk lift, lock doors, or any other function. It will remain on until the button is released.

Pressing button 5, and then button 3 will activate an internal relay to send 12 volts out on the purple wire for about 1 second.

Pressing button 5, and then button 4 will activate an extra external relay which can be used to operate almost any accessory. When DIP switch #2 is off, the relay will remain on as long as the button is held. When the button is released it will turn off. When DIP switch #2 is on, the relay will turn on and remain on the first time the buttons are pressed. The next time the buttons are pressed the relay will turn off.

When the ignition key is on, the only buttons that will work are 1 and 2. Buttons 3, 4, and 5 are disabled. This safety feature will not allow the doors or trunk to accidentally release while the vehicle is in motion. This disables the key chain transmitter only. The emergency release switch will not be disabled.

REMOTE SYSTEM TRANSMITTER LOCK FUNCTION

Due to the long range of this system, some customers may wish to avoid accidentally pressing a button and opening a door when they are out of sight of the vehicle. Turning Switch #3 on will enable a transmitter lock function. Pressing buttons 1 and 3 at the same time will lock the receiver from activating any of the outputs. It will remain locked until buttons 1 and 3 are pressed again.

When DIP switch #3 is off, this feature is disabled.

To lock the system:

1. Press and release buttons 1 and 3 at the same time.
2. Press one of the other buttons to verify that the system is locked.

To unlock the system:

1. Press and release buttons 1 and 3 at the same time.
2. Press one of the other buttons to verify that the system is operating normally.

PROGRAMMING SWITCHES

There are four programming switches located next to the main harness connector. They are used to set up the operation of the remote system.

- | | |
|-----------|--|
| Switch #1 | Select operation mode. (changes what button 5 does) |
| Switch #2 | Select auxiliary output type. (momentary on or latch on/latch off) |
| Switch #3 | Enable or disable transmitter lock function. |
| Switch #4 | Enter testing and programming mode. |

BATTERY REPLACEMENT

Should the transmitter function become weak or erratic, the battery in the key chain transmitter may be weak. An indication of a weak battery is that the green indicator may have a dim glow to it when any button is pressed. The battery is replaced in the following manner:

1. Remove the small screw on the back of the transmitter case.
2. Carefully separate the two case halves.
3. Remove the battery, noting the (+) and (-) position.
4. Replace the battery with a new 12 volt type GP23A battery which is available at most electronic stores (Radio Shack, battery stores, etc.).
5. Carefully replace the top cover and refasten the screw

INSTRUCTIONS FOR TESTING AND PROGRAMMING TRANSMITTERS

All of the transmitters to be programmed into the system should be available. This sequence will erase any previously programmed transmitters. If a transmitter is lost or stolen, go through the programming sequence with the remaining transmitters and the lost one will be erased. The programming light is located next to the four programming switches.

Placing receiver into programming/testing mode.

1. Unplug the main harness connector from the receiver unit.
2. Turn Switch #4 on.
3. Plug in the main harness connector so that the unit has power. The red programming light should come on and remain on.

Testing the transmitters.

1. Press button 5. The programming light should flash as long as the button is held.
2. Press button 1. The programming light will flash if the transmitter is currently programmed in. This will also resynchronize the transmitter with the decoder. The number of flashes will indicate the transmitter number.

Programming the transmitters.

1. Turn Switch #4 off. The programming light should go off.
(If no transmitter buttons are pressed within 6 seconds the system will exit the programming routine.)
2. Press and release button number 3. The programming light should come on.
3. Press and release button number 3 again. The programming light should flash and then go out. It will flash once for the first transmitter, twice for the second, etc.
4. The transmitter is now stored. If you have more transmitters, take the next transmitter and go back to step 2.
5. Press button 4. This will exit the programming mode and restart the system.

TROUBLE SHOOTING GUIDE

Symptom	Possible Problem	Solution
System will not operate doors or windows.	Receiver is not getting power.	Check 12 volt connection. Check ground connection. Check fuses.
Door latch actuators 'jump' or 'chatter'.	System is in test/program mode Weak or poor 12 volt connection.	Check Switch #4 Check 12 volt connection. Move to new terminal point.
remote	Door latch actuators are drawing too much current to be connected directly.	Wire a relay between the system and the actuator as Shown in figure 3.
Windows change direction in mid-travel.	Over loaded 12 volt power circuit. Weak car battery. Transmitter signal is being disrupted.	Place receiver and windows on separate circuits. Check for loose connections. Increase wire size on power. Recharge or replace car battery. Move antenna away from power wires.
Windows work, but doors and trunk will not	Ignition key is on. Yellow wire has 12 volts at all times.	Turn off ignition key. Move yellow wire to a terminal that is powered only when the key is on.
Transmitter has very short range on all functions.	Transmitter battery is weak. Antenna needs repositioning	See Battery Replacement. Move antenna out away from any high current wires.
Button #5 will not work Emergency Entry button will not work.	Incorrect operation mode. Switch not hooked up correctly.	Check Switch #1. Check ground connection. Check wiring connection.
Emergency Entry button rolls the wires window up instead of down.	Window up/down wires reversed	Switch gray and white from CMD-9000.

If none of these solutions solve the problem, or the problem occurring is not listed here, please call the Dakota Digital technical assistance line at (605) 332-6513 for further assistance or email to dakotasupport@dakotadigital.com.

CMD-9000 COMMANDER SERIES REMOTE ENTRY SYSTEM LIMITED LIFETIME WARRANTY

DAKOTA DIGITAL (the Company) warrants to the ORIGINAL PURCHASER of this remote control product that should any included control relays, electronic module, or transmitters under normal use and condition, be proven defective in material or workmanship DURING THE LIFETIME OF THE CAR IN WHICH IT WAS ORIGINALLY INSTALLED, such defect(s) will be repaired or replaced (at the Company's option) without charge for parts or labor directly related to repairs of the defect(s).

To obtain repair or replacement within the terms of this Warranty, the product is to be delivered with proof of warranty coverage (e.g. dated bill of sale), specification of defects, transportation prepaid, to the factory. This Warranty is valid for the original purchaser only and may not be transferred.

This warranty does not cover batteries, nor extend to damage to vehicle electrical system. This Warranty does not apply to any product or part thereof which in the opinion of the Company has been damaged through alteration, improper installation, mishandling, misuse, neglect, or accident.

This Warranty is in lieu of all other express warranties or liabilities. ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, SHALL BE LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY. ANY ACTION FOR BREACH OF ANY WARRANTY HEREUNDER INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY MUST BE BROUGHT WITHIN A PERIOD OF 30 MONTHS FROM DATE OF ORIGINAL PURCHASE. IN NO CASE SHALL THE COMPANY BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, WHATSOEVER. No person or representative is authorized to assume for the Company any liability other than that expressed herein in connection with the sale of this product.

The Company does not warrant that this product cannot be compromised or circumvented. THE EXTENT OF THE COMPANY'S LIABILITY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT PROVIDED ABOVE AND, IN NO EVENT, SHALL THE COMPANY'S LIABILITY EXCEED THE PURCHASE PRICE PAID BY THE PURCHASER FOR THE PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation if incidental or consequential damage so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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