

105B

► *Owner's/Installation Guide*

BOA

limited lifetime consumer warranty

Directed Electronics, Inc. (hereinafter "Directed") promises to the original purchaser to repair or replace with a comparable reconditioned Directed DIY keyless entry unit if this Directed DIY keyless entry unit (hereinafter "Unit"), excluding without limitation, any remote transmitters or associated accessories, proves defective in materials or workmanship under normal use for the life of the vehicle which the Unit is originally installed. During this period, so long as the Unit remained installed in the original vehicle, Directed will at its option, repair or replace this Unit if it is proved defective in workmanship or material PROVIDED the Unit is returned to Directed's warranty department at One Viper Way, Vista, CA 92081, along with \$20 postage and handling fee, a bill of sale or other dated proof of purchase bearing the following information: Date of purchase, name and location of the merchant who sold the Unit, and product description. This warranty does not cover labor costs for the removal or reinstallation of the Unit. This warranty is non-transferable and does not apply to any Unit that has been modified or used in a manner contrary to its intended purpose, and this warranty does not cover damage to any Unit caused by installation or removal of the Unit. This warranty is void if the Unit has been damaged by accident or unreasonable use, neglect, improper service or other causes not arising out of defects in materials or workmanship. Directed makes no warranty against theft of a vehicle or its contents.

THE FOREGOING WARRANTY IS THE EXCLUSIVE PRODUCT WARRANTY, OTHERWISE, ALL WARRANTIES INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED AND DISCLAIMED TO THE MAXIMUM EXTENT ALLOWED BY LAW, AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY LIABILITY IN CONNECTION WITH THE SALE OF THE PRODUCT. DIRECTED HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS. SOME STATES DO NOT ALLOW THE LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

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OR IN CONNECTION WITH THE INSTALLATION, USE, IMPROPER USE, OR INABILITY TO USE, THE PRODUCT, EVEN IF THE PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS OR EXCLUSION MAY NOT APPLY TO YOU. THE CONSUMER AGREES AND CONSENTS THAT ALL DISPUTES BETWEEN THE CONSUMER AND DIRECTED SHALL BE RESOLVED IN ACCORDANCE WITH CALIFORNIA LAWS IN SAN DIEGO COUNTY, CALIFORNIA.

IMPORTANT NOTE:

This product warranty is automatically void if its date code or serial number is defaced, missing, or altered. This warranty will not be valid unless you have completed the warranty card and mailed it to Directed Electronics, Inc. within 10 days after purchase to the address listed on the warranty registration card.

Make sure you have all of the following information from your dealer:

A clear copy of the sales receipt, showing the following:

- Date of purchase
- Authorized dealer's company name and address
- Item number

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what is included

- Control Module
- One 4-Button Transmitter
- 14-Pin H1 Main Harness
- 10 feet of Black Electrical Tape
- 6 Six inch Zip Ties
- LED Tester
- Razor Knife

installation tools

- Digital Multi-Meter
- Drill
- $\frac{9}{32}$ and $\frac{5}{16}$ Drill Bits
- Screwdrivers
(Phillips and Flathead)
- Wire Stripper
- Solder Iron
- Pliers
- Crimping Tool



note: The installation tools listed above may be optional and those required will vary depending on your vehicle.

important information

Congratulations on the purchase of your keyless entry system. This system will allow convenient access to your vehicle with the push of a button, as well as other optional features. Properly installed, this system will provide years of trouble-free operation.

Please take the time to carefully read this Owner's/Install Guide in its entirety and watch the BOA Do-It-Yourself Installation Video prior to installing your system.

You can print additional or replacement copies of this manual by accessing the Directed web site at www.boasecurity.com.

important! If you are not comfortable working with electronics or unfamiliar with the tools required, please contact your local dealer for advice or ask to have the system professionally installed to avoid costly damages. Failure to properly install the system may result in property damage, personal injury, or both.

→ **system maintenance**

The system requires no specific maintenance. Your transmitter is powered by a miniature 3-volt battery (type CR2032) that will last approximately one year under normal use. When the battery begins to weaken, the operating range will be reduced.

→ **your warranty**

Your warranty registration must be completely filled out and returned within 10 days of purchase. Your product warranty will not be validated if your warranty registration is not returned. Please note that it is necessary to keep your proof of purchase.

→ **fcc/id notice**

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

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

*primary harness (H1),
14-pin connector*

H1/1	RED/WHITE	(-) 200mA Channel 2 Trunk Output
H1/2	RED	(+) 12V Constant Power Input
H1/3	YELLOW	(+) Ignition Input
H1/4		Empty
H1/5	BLACK	(-) Chassis Ground Input
H1/6	WHITE	(-) Parking Light Flash Output
H1/7	ORANGE	(-) 500 mA Ground-When-Armed Output
H1/8	WHITE/BLACK	Lock 87A Normally Closed
H1/9	GREEN/BLACK	Lock 30 Common-Output
H1/10	VIOLET/BLACK	Lock 87 Normally Open-Input
H1/11	BROWN/BLACK	Unlock 87A Normally Closed
H1/12	BLUE/BLACK	Unlock 30 Common-Output
H1/13	VIOLET	Unlock 87 Normally Open
H1/14	LIGHT GREEN/BLACK	(-) Factory Alarm/Disarm

note: H1/10 VIOLET/BLACK is connected to H1/13 VIOLET.

note: H1/10 VIOLET/BLACK is fused (15A).

using LED test probe



warning! Do not use this test probe on computerized equipment as damage can result.

To use the LED test probe:

1. Remove the protective cover off the probe tip. Save the protective cover for reinstallation on the probe tip when the LED tester is not being used.
2. Connect the Black clip to a good chassis ground.
3. Connect the Red clip to a good +12V source. Both the Red and Green LEDs should be illuminated dimly.
4. If a positive voltage source is probed, the Red LED will illuminate brightly, and the Green LED will extinguish.
5. If a negative source is probed the Green LED will illuminate brightly and the Red LED will extinguish.

Alternate procedure to use the LED test probe (only for use on probing positive voltage wires):

1. Remove the protective cover off the probe tip. Save the protective cover for reinstallation on the probe tip when the LED tester is not being used.
2. Connect the Black clip to a good chassis ground.
3. If a positive voltage source is probed, the Red LED will illuminate brightly.

installation

Be sure to read this section thoroughly and view the BOA Do-It-Yourself Installation Video in its entirety before starting the installation. Pay special attention to all warnings to prevent personal injury or damage to your vehicle.

Visit our 24-hour technical Web site (www.boasecurity.com) to get a vehicle-specific wiring guide prior to starting this installation. If at any time during the installation you are unable to answer your questions on the Web site, call **1-800-873-1314** for live technical assistance.



warning! On vehicles with air bags or supplemental restraint systems (SRS) you may notice a bright yellow tube with small wires in it marked SRS underneath the steering column near the key cylinder. DO NOT tamper, probe or unplug these for any reason to prevent costly damages to your vehicle or personal injury. Tampering may cause unintended deployment of airbags.

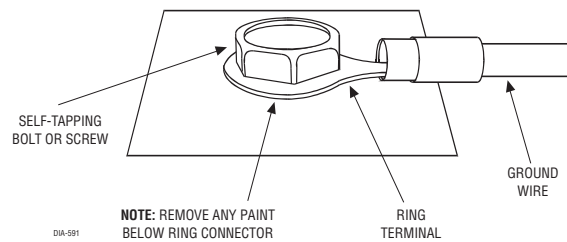


warning! Verify that the vehicle transmission is set to park and that the parking brake is set before beginning installation.

→ step 1**Ground Wire**

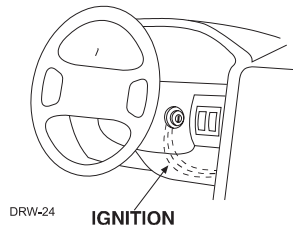
The BLACK (H1/5) wire on the main 14-pin harness is ground. This wire should be connected to a clean, paint-free area of metal in the drivers kick panel area. Locate a clean, paint-free metal surface in the drivers kick panel. Using a self-tapping screw, drill the screw with the ring terminal to the metal area. Once screwed down, pull on the wire to ensure a good connection.

note: More problems are attributed to poor ground connections than any other cause. Take extra care to ensure the ground is clean and secure.

**→ step 2****Constant Power and Ignition wires**

Almost all power and ignition wires can be found behind the key cylinder under the lower drivers side dash panel. Using the appropriate hand tools, remove the lower dash panel using care not to break any parts. If the panel does not come off easily check

for any additional screws you may have missed.



Once the lower dash panel has been removed, locate the ignition harness at the back of the key cylinder. This is usually a group of thicker wires. With the ignition harness exposed, use your LED tester to find your power and ignition wires.



warning! On vehicles with air bags or supplemental restraint systems (SRS) you may notice a bright yellow tube with small wires in it marked SRS underneath the steering column near the key cylinder. DO NOT tamper or unplug these for any reason to prevent costly damages to your vehicle or personal injury. Tampering may cause unintended deployment of airbags.

Place the black lead of the LED tester to a clean metal surface in the kick panel area and secure it. Probe one of the thicker gauge wires. The color and identity of your specific vehicle wiring can be obtained at www.boasecurity.com. With the key in the OFF position, test the suspect wire. The constant power wire will illuminate the LED tester.

Once the constant power wire has been identified, solder the RED (H1/2) wire from the 14-pin harness to it and wrap the connection with electrical tape.

With the black lead still in the kick panel, locate the ignition wire harness in the same location. It will test differently than constant (+)12 volts. Locate the suspected wire using the www.boasecurity.com web site and then use the LED tester to probe the suspected wire. With the key in the off position the LED tester will not illuminate. Turn the key to the on position and the LED tester will illuminate. Now while watching the LED tester, turn the key to the crank position and the LED tester should not extinguish. If the LED tester extinguishes this is not an ignition wire but an accessory wire. If the wire tests correctly, solder the YELLOW (H1/3) wire from the 14-pin harness to it and cover the connection with electrical tape.

→ step 3

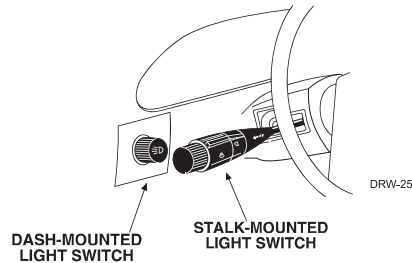
Parking light flash

There are several different types of parking light circuits. The following description is for a standard negative-triggered parking light circuit, usually located at the light switch. If the web vehicle information suggests a different type of parking light circuit, please contact BOA Technical Support.

Using the web information on the vehicle, locate the suspected wire and place the RED lead of the LED tester to +12V and secure it. Probe the suspect wire. With the light switch in the off position the LED tester will not illuminate. While watching the LED tester, turn the switch to the parking light position. The

LED tester will illuminate green. While testing the suspected wire, run the dash dimmer light control up and down — the voltage should NOT vary (LED tester illumination). If the voltage does vary, continue probing to find the correct wire.

Once you have identified the correct wire, solder the WHITE (H1/6) wire on the 14-pin harness to it and wrap the connection with electrical tape.



→ step 4 (option)

Starter Kill or Auxiliary Output

The ORANGE wire (Ground-When-Armed) can be used to control an optional starter kill relay or other accessory outputs. This wire supplies a -500mA output when the doors are locked and opens when the doors are unlocked. See your dealer or contact BOA technical Support for details and additional parts required.

 step 5**Door locks**

The system comes with a built in relay pack for door lock operation. When attempting to interface the power door locks with your system it is important to understand that there are multiple types of door locking systems in today's vehicles. To determine your vehicle's power door lock system, check the web information on your vehicle.

If your door lock system is a different type than described in this guide, go to www.boasecurity.com (On-Line Tech Support, Tech Tips) to download the door lock systems guide. This guide identifies the type of system for your vehicle. With the built in door lock relays you can properly interface the power locks with your security system. If you are unable to identify your door lock system with the web information please contact BOA Technical Support.

Although there are numerous types of door lock circuits, the most common is the negative triggered door lock system. If your vehicle has a negative triggered door lock system, follow the steps below. If your vehicle has any other type of door lock system then, the easiest way to determine which type of door lock system you are working with is to remove the master locking switch itself, which is usually on the driver's door or on the center console. Once you have determined which type of factory door lock circuit you are working with, and the color codes of the switch wires to be used, you can usually simplify the installation by locating the same wires in the vehicle's kick panel. If no

central locking switch is found, the installation may require a door lock actuator.

note: Always retest the wires in the kick panel to be sure they function the same way as the wires on the switch.

There are eight common types of door lock circuits (some vehicles use more unusual systems):

- **Type A:** Three-wire (+) pulse controlling factory lock relays. Most GM, some Ford and Chrysler, 1995 Saturn, some new VW, newer BMW.
- **Type B:** Three-wire (-) pulse controlling factory lock relays. Most Asian vehicles, early Saturn, some BMW and Porsche.
- **Type C:** Direct-wired reversing-polarity switches. The switches are wired directly to the motors. This type of system has no factory relays. Most Fords, many GM two-doors cars and trucks, many Chryslers.
- **Type D:** Adding one or more aftermarket actuators. These include slave systems without an actuator in the driver's door, but with factory actuators in all the other doors. Type D also includes cars without power locks, which will have actuators added. All Saabs before 1994, all Volvo except 850i, all pre-1997 Subarus, most Isuzus, and many Mazdas. Some mid-eighties Nissans, pre-1985 Mercedes-Benz and Audi.
- **Type E:** Electrically-activated vacuum systems. The vehicle must have a vacuum actuator in each door. Make sure that lock-

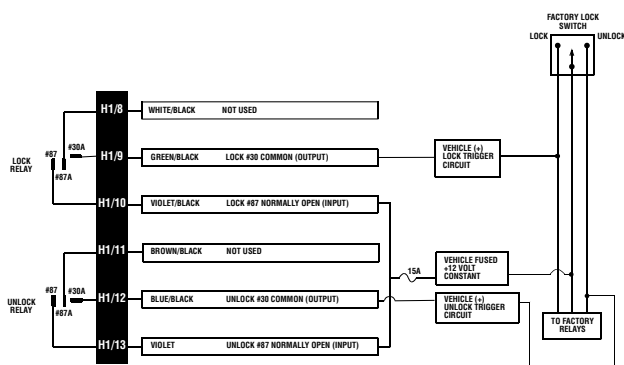
ing the doors from the driver's or passenger side using the key activates all the actuators in the vehicle. This requires a slight modification to the door lock harness. Mercedes-Benz and Audi 1985 and newer.

- **Type F:** One-wire system - cut to lock, ground to unlock. This system is found in late-model Nissan Sentras, some Nissan 240SX, and Nissan 300ZX 1992 and later. It is also found in older Mitsubishi's, and some early Mazda MPV's.
- **Type G:** Positive (+) multiplex. This system is most commonly found in Ford, Mazda, Chrysler and GM vehicles. The door lock switch or door key cylinder may contain either one or two resistors.
- **Type H:** Negative (-) multiplex. The system is most commonly found in Ford, Mazda, Chrysler and GM vehicles. The door lock switch or door key cylinder may contain either one or two resistors.

at the switch

- Three-wire switches will have either a constant ground input or a constant (+)12V input, along with the pulsed lock and unlock outputs to the factory relays.
- Many BMW's and VW's have no external switch. The switches are inside the actuator, and instead of pulsing, the proper wires will flip-flop from (+)12V to (-) ground as the door locks are operated.
- Direct-wired switches will have a (+)12V constant input and one or two (-) ground inputs, along with two output leads going directly to the lock motors.

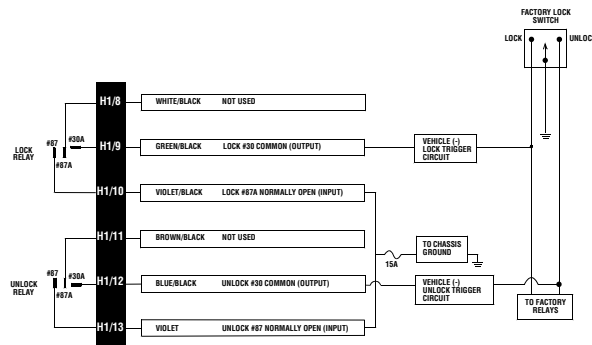
type A: positive-triggered, relay-driven system



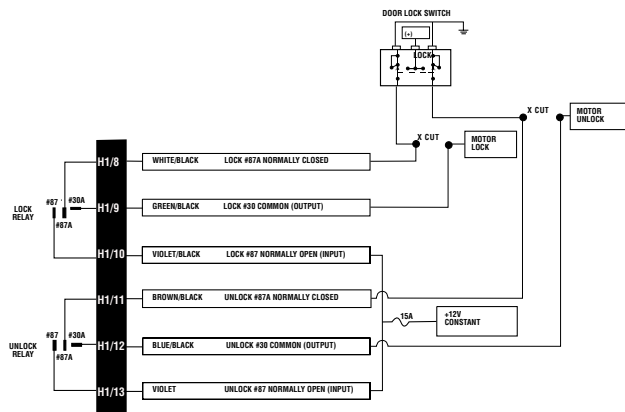
type B: negative-triggered, relay-driven system

This system is common in many Toyota, Nissan, Honda, and Saturn models, as well as Fords with the keyless-entry system (some other Fords also use Type B).

The switch will have three wires on it, and one wire will test ground all the time. One wire will pulse (-) when the switch locks the doors, and the other wire will pulse (-) when the switch unlocks the doors. This type of system is difficult to mistake for any other type.



type C: direct-wired, reversing-polarity system



testing reversing polarity systems

Use these instructions if the power door lock switch has four or five heavy-gauge wires. This type of switch has two outputs that rest at (-) ground.

important: To interface with these systems, you must cut two switch leads. The relays must duplicate the factory door lock switches' operation. The master switch will have one or two ground inputs, one (+)12V input, and two switch outputs going directly to the slave switch and through to the motors. These outputs rest at (-) ground. The lock or unlock wire is switched to (+)12V, while the other wire is still grounded, thus completing the circuit and powering the motor. This will disconnect the switch from the motor before supplying the motor with (+)12V, avoiding sending (+)12V directly to (-) ground.

It is critical to identify the proper wires and locate the master switch to interface properly. Locate wires that show voltage when the switch is moved to the lock or unlock position. Cut one of the suspect wires and check operation of the locks from both switches. If one switch loses all operation in both directions then you have cut one of the correct wires and the switch that is entirely dead is the master switch. If both switches still operate in any way and one or more door motors have stopped responding entirely, you have cut a motor lead. Reconnect it and continue to test for another wire. Once both wires have been located and the master switch identified, cut both wires and interface as described in the following paragraphs.

caution: If these wires are not connected properly, you will send (+)12V directly to (-) ground, possibly damaging the alarm or the factory switch.

- **H1/8 WHITE/BLACK:** Once both door lock wires are located and cut, connect the white/black wire to the master switch side of the lock wire. The master switch side will show (+)12V when the master switch is operated to the lock position and (-) ground when the master switch is in the middle position.
- **H1/9 GREEN/BLACK:** Connect the green/black wire to the other side of the lock wire. This is the motor side of the lock wire and it goes to the lock motor through the slave switch.
- **H1/10 VIOLET/BLACK:** This wire must be connected to a constant (+)12 volts. The best connection point for this wire is the constant (+)12V supply for the door lock switch*, or directly to the positive (+) battery post with a fuse at the battery post.

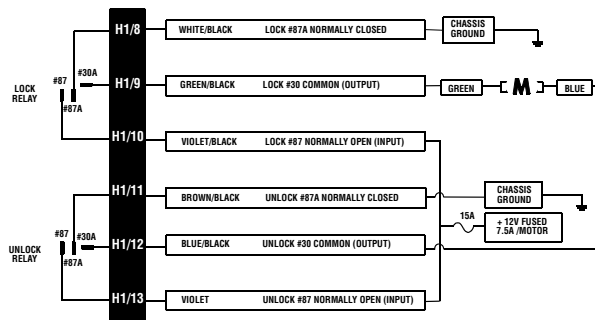
***note:** Except in GM cars with retained accessory power (RAP). In these vehicles, the (+)12V feed to the door lock switches is turned off if the doors are closed for any length of time.

note: Most direct-wired power lock systems require 20-30 amps of current to operate. Connecting the violet/black wire to a poor source of voltage will keep the door locks from operating properly.

- **H1/11 BROWN/BLACK:** Connect the brown/black wire to the master switch side of the unlock wire. The master switch side will show (+)12V when the master switch is in the unlock position and (-) ground when the master switch is in the middle position.
- **H1/12 BLUE/BLACK:** Connect the blue/black wire to the other side of the unlock wire.
- **H1/13 VIOLET:** This wire must be connected to a constant (+)12 volts. The best connection point for this wire is the constant (+)12V supply for the door lock switch*, or directly to the positive (+) battery post with a fuse at the battery post. (See both notes above.)

type D: adding one or more after-market actuators

Vehicles without factory power door locks require the installation of one actuator per door. This requires mounting the door lock actuator inside the door. Other vehicles may only require one actuator installed in the driver's door if all door locks are operated when the driver's lock is used.

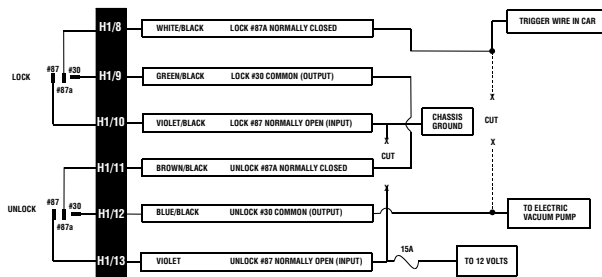


note: Adding door lock actuators can be complicated. Please contact BOA technical support prior to attempting the addition of actuators.

type E: electrically-activated vacuum

This system is found in Mercedes-Benz and Audi 1985 and newer. The door locks are controlled by an electrically activated vacuum pump. The control wire will show (+)12V when doors are unlocked and (-) ground when locked.

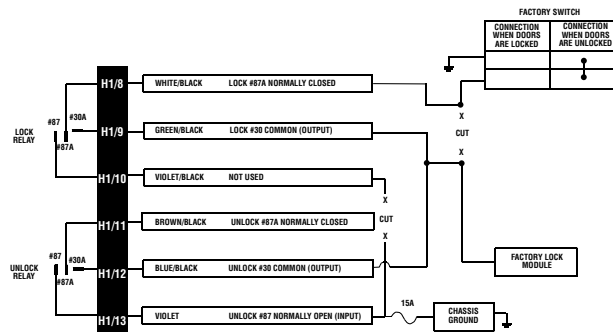
note: The system must be programmed for 3.5-second door lock pulses, and the violet jumper between the #87 lock terminal and the #87 unlock terminal must be cut. Contact BOA technical support. See Programming section.



type F: one-wire system (cut to lock, ground to unlock)

This type of door lock system usually requires a negative pulse to unlock, and cutting the wire to lock the door. (With some vehicles, these are reversed.) It is found in the late-model Nissan Sentras, some Nissan 240SX, Nissan 300ZX 1992 and later. It is also found in some Mazda MPV's.

note: The violet jumper between the #87 lock terminal and the #87 unlock terminal must be cut.



type G: positive (+) multiplex

This system is most commonly found in Ford, Mazda, Chrysler and GM vehicles. The door lock switch or door key cylinder may contain either one or two resistors.

SINGLE-RESISTOR TYPE: If one resistor is used in the door lock switch/key cylinder, the wire will pulse (+)12V in one direction and less than (+)12V when operated in the opposite direction.

TWO-RESISTOR TYPE: If two resistors are used in the factory door lock switch/key cylinder, the switch/key cylinder will read less than (+)12V in both directions.

DETERMINING THE PROPER RESISTOR VALUES: To determine the resistor values, the door lock switch/key cylinder must be isolated from the factory door lock system. For testing, use a calibrated digital multimeter that is set to ohms.

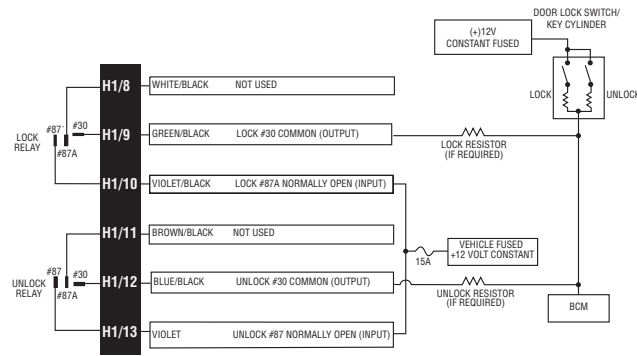
note: To ensure an accurate resistance reading, do not touch the resistor or leads during testing.

note: Please refer to the *Door Locking Systems* document on www.boasecurity.com (On-Line Tech Support, Tech Tips) for complete resistor test procedure and additional information for multiplexed door locks.

1. Cut the output wire from the door lock switch/key cylinder.
 2. Test with the meter from the switch side of the cut door lock switch/key cylinder wire to a reliable constant (+)12V source.
- Some good constant (+)12V references are the power input

source to the door lock switch/key cylinder, the ignition switch power wire, or the (+) terminal of the battery.

3. Operate the door lock switch/key cylinder in both directions to determine the resistor values. If the multimeter displays zero resistance in one direction, no resistor is needed for that direction.
4. Once the resistor value(s) is determined, refer to the wiring diagram for proper wiring.



type H: negative (-) multiplex

The system is most commonly found in Ford, Mazda, Chrysler and GM vehicles. The door lock switch or door key cylinder may contain either one or two resistors.

SINGLE-RESISTOR TYPE: If one resistor is used in the door lock switch/key cylinder, the wire will pulse ground in one direction and resistance to ground when operated in the opposite direction.

TWO-RESISTOR TYPE: If two resistors are used in the factory door lock switch/key cylinder, the door lock switch/key cylinder will read resistance to ground in both directions.

DETERMINING THE PROPER RESISTOR VALUES: To determine the resistor values, the door lock switch/key cylinder must be isolated from the factory door lock system. For testing, use a calibrated digital multimeter that is set to ohms.

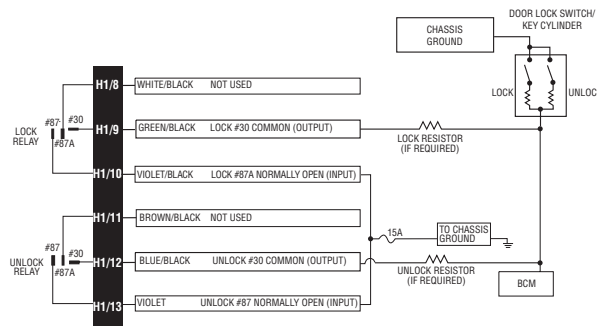
note: To ensure an accurate resistance reading, do not touch the resistor or leads during testing.

note: Please refer to the *Door Locking Systems* document on www.boasecurity.com (On-Line Tech Support, Tech Tips) for complete resistor test procedure and additional information for multiplexed door locks.

1. Cut the output wire from the door lock switch/key cylinder in half.
2. Test with the meter from the switch side of the cut door lock switch/key cylinder wire to a reliable ground source. Some good ground references are the ground input source to the door lock

switch/key cylinder or the battery ground.

3. Operate the door lock switch/key cylinder in both directions to determine the resistor values. If the multimeter displays zero resistance in one direction, no resistor is needed for that direction.
4. Once the resistor value(s) is determined, refer to the wiring diagram for proper wiring.



→ step 6

Factory Alarm Disarm

Since most newer vehicles come equipped with a factory alarm system, it is necessary for the factory alarm to be disarmed when unlocking the doors.

note: Some vehicles use a + trigger system. Use the www.boasecurity.com website to determine if your vehicle has a + trigger system. If this vehicle has this system call **1-800-873-1314** for live technical assistance as special wiring and an additional relay is required.

note: On some vehicles the Factory Alarm Disarm wire is connected to a Body Control Module or a Door Module. If you find this configuration, please call BOA Technical Support at **1-800-873-1314**.

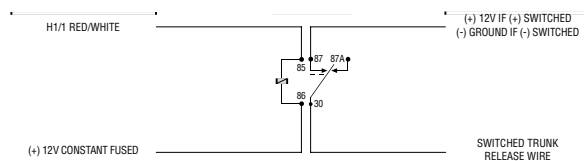
Locate the factory alarm disarm wire using the web site vehicle information. Once the suspect wire is located, place the LED tester red lead to a (+)12 volt constant source and secure it. Then probe the suspect wire . While probing the wire, place the key in the drivers door cylinder. Turn it to the unlock position and hold it when testing for the disarm wire. The LED tester should illuminate and will extinguish when the key is released.

When the correct wire has been found, solder the LIGHT GREEN/BLACK wire to the wire which activates in the unlock position when the key is turned. After this wire has been connected wrap the connection with electrical tape.

→ step 7**Optional connections (channels 2)**

When the system receives the code controlling channel 2 the RED/WHITE wire (H1/1-channel 2) will supply an output as long as the transmission continues. This is often used to operate a trunk/hatch release or other relay-driven function.

important: Never use these wires to drive anything but a relay or a low-current input! The transistorized output can only supply 200 mA of current. Connecting directly to a solenoid, motor, or other high-current device will cause it to fail.



 step 8**Loop Programming**

Dependent on the door lock type, use the following data with the instructions to program the system for your door lock type. The wire loops listed below are found at the side of the control module case. Refer to *Feature Description* for additional information.

Door Lock Duration (WHITE)

Uncut – 0.8 seconds

Cut – 3.5 seconds

Door Unlock Pulse Setting (GREEN)

Uncut – Single pulse

Cut – Double pulse

Ignition Controlled Door Locks (RED)

Uncut – On

Cut – Off

 step 9**Programming the Transmitter**

The system comes with 1 transmitter. The receiver can store up to 2 different transmitter codes in memory. Use the following learn routine to add a transmitter to the system.

note: The learn routine can only be performed at the first time ignition is turned on after +12 volt constant power has been connected to the control module.

note: If power is lost to the control module (battery disconnected), the transmitters must be relearned.

The following is the basic sequence of steps to remember whenever programming this unit:

1. Connect +12V constant power (H1/2).



2. **Key.** Turn the ignition to the ON position.

note: If the WHITE wire at the control module is not cut the doors will lock 3-seconds after turning the ignition on.

3. **Program.** Wait 5-seconds (the door will lock if the WHITE wire at the control module is not cut), press and hold the **PROG** button on the transmitter, until—(see step 4).

note: To ensure proper system operation, use the transmitter at a distance of greater than 18 inches from the control module.

4. **Lock/Unlock.** The door locks will cycle (Lock/Unlock) to acknowledge programming of this transmitter.

note: A second transmitter can only be added to the system immediately after programming the first transmitter.

To add a second transmitter (within 5-seconds of programming the first transmitter, after the Lock/Unlock cycle):

1. **Program.** Press and hold the **PROG** button on the additional transmitter, until—(see step 2).
2. **Lock/Unlock.** The door locks will cycle (Lock/Unlock) to acknowledge programming of this transmitter.

→ step 10

Testing the system

With all the previous steps completed, the operation of the system can now be tested.

note: The transmitter(s) must be learned to the system prior to completion of this test. See the *Transmitter/Receiver Learn Routine* section of this guide.

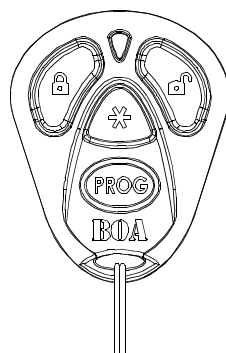
Close all the doors and press the  button on the transmitter to lock the doors, the system should flash the parking lights once. Press the  button on the transmitter to unlock the doors. The parking lights should flash twice and the factory disarm output will activate (if connected).

This completes the testing, if all functions do not work correctly check your wiring against the manual and verify all connections. If you still experience problems contact BOA Technical Support at **1-800-873-1314**.

transmitter functions

The receiver uses a computer-based learn routine to learn the transmitter buttons. Unless otherwise specified, the buttons used in all of the instructions in this manual correspond to a Standard Configured transmitter.

→ standard configuration



Button

The door locking function is controlled by pressing .

Button

The door unlocking function is controlled by pressing .

Button

This channel 2 accessory is used for trunk release.

Button

This button is used to program the transmitter(s).

control module programming

Dependent on the vehicle, use the following data with the instructions to program your system. These wire loops are found at the side of the control module.

Door Lock Pulse Duration (WHITE) - Some European vehicles, such as Mercedes-Benz and Audi, require longer lock and unlock pulses to operate the vacuum pump. Programming the system to provide 3.5 second pulses will accommodate door lock interface in these vehicles. The default setting is 0.8 second door lock pulses. See *Mercedes-Benz and Audi - 1985 and Newer (Type E Door Locks section)* diagram.

Uncut – 0.8 seconds

Cut – 3.5 seconds

Double Pulse Unlock Single Pulse/Double Pulse (GREEN) - Some vehicles require two pulses on a single wire to unlock the doors. When the double pulse unlock feature is turned on, the H1/12 BLUE/BLACK wire will supply two pulses instead of a single pulse. This makes it possible to directly interface with double pulse vehicles without any extra parts.

Uncut – single pulse

Cut – double pulse

Ignition Controlled Door Locks On/Off (RED) - When on, the doors will lock three seconds after the ignition is turned on and unlock when the ignition is turned off.

Uncut – ignition controlled door locks on

Cut – ignition controlled door locks off

using your system

→ **locking with transmitter**

To lock the doors press  for one second. The doors will lock and the parking lights will flash once to confirm that the doors are locked.

→ **unlocking with transmitter**

To unlock the doors press  for one second. The parking lights will flash twice to confirm that the doors are unlocked.

→ **ignition-controlled door locks**

If power door locks have been connected to your system and the ignition-controlled door locks are programmed on, the vehicle's door will lock three seconds after the ignition has been turned on and unlock when the ignition is turned off.

code hopping® re-synchronize

If the transmitter is pressed many times out of range, or the battery is removed from the transmitter, the transmitter may get temporarily out of sync and fail to operate the system. To synchronize the transmitter, simply press  or  several times within range of the vehicle. The system will automatically synchronize and the transmitter will respond normally.

system expansion items

The following item can be added to the system:

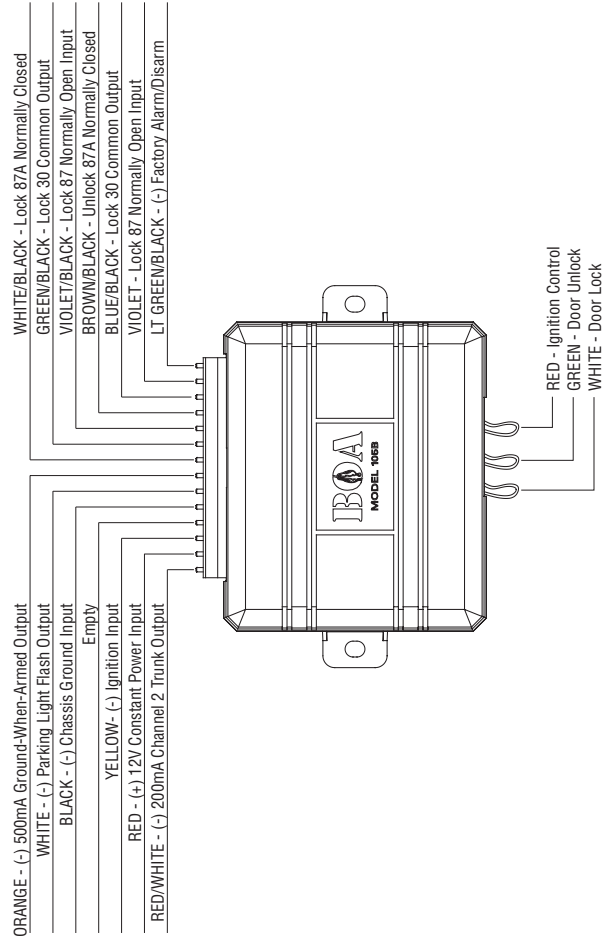
- Starter Kill
- Window Automation
- Valer® Remote Start

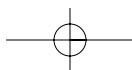
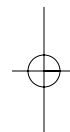
glossary of terms

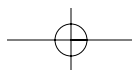
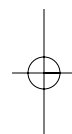
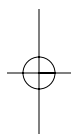
Control Module: The "brain" of your keyless entry system. Usually hidden underneath the dash area of the vehicle.

Transmitter: A hand-held, remote control that operates the various functions of the security system.

wiring quick reference guide



[illegible]



QUICK REFERENCE GUIDE:

To lock the doors using your transmitter

- Pressing  for one second will lock the doors. The doors will lock and the parking lights will flash once to confirm the doors are locked.

To unlock the doors using your transmitter

- To unlock the doors, press  for one second. The doors will unlock and the parking lights will flash twice to confirm the doors are unlocked.

To open the trunk using your transmitter

- To open the trunk, press  for 1.5-seconds.

QUICK REFERENCE GUIDE:

To lock the doors using your transmitter

- Pressing  for one second will lock the doors. The doors will lock and the parking lights will flash once to confirm the doors are locked.

To unlock the doors using your transmitter

- To unlock the doors, press  for one second. The doors will unlock and the parking lights will flash twice to confirm the doors are unlocked.

To open the trunk using your transmitter

- To open the trunk, press  for 1.5-seconds.

Cut along dotted line and fold for a quick and easy reference to keep in your purse or wallet.

The company behind this system is Directed Electronics, Inc.

Since its inception, Directed Electronics has had one purpose, to provide consumers with the finest vehicle security and car stereo products and accessories available. The recipient of nearly 100 patents and Innovations Awards in the field of advanced electronic technology, DIRECTED is ISO 9001 registered.

Quality Directed Electronics products are sold and serviced throughout North America and around the world.

Call **(800) 274-0200** for more information about our products and services.



Directed Electronics is committed to delivering world class quality products and services that excite and delight our customers.



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