VAIS TECHNOLOGY

www.vaistech.com

Installation Manual

SEER

SMART ENTRY EXIT RECOGNITION

WITH PUSH TO START

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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Before You Start

⚠ WARNING

DO NOT DISASSEMBLE OR ALTER THE MODULE
Doing so may result in an accident, fire, or electric shock.
DO NOT BLOCK THE AIRBAG
Do not mount product or any added equipment where it can obstruct the operation of any safety devices such as the airbag.
DISTRACTION WARNING
Do not let product or any added equipment distract you while you are driving.

BEFORE WIRING, DISCONNECT THE CABLE FROM THE NEGATIVE BATTERY TERMINAL
Before starting any installation work, you must wait 90 seconds after turning the ignition switch to the LOCK position and disconnecting the negative (-) terminal from the battery. The supplemental restraint system (airbag) is equipped with a backup power source. If installation work is started less than 90 seconds after disconnection of the negative (-) battery terminal, the SRS may deploy. When the negative (-) terminal cable is disconnected from the battery, the clock and audio system's memory will be erased. Before starting installation work make a record of the clock and audio system's memory settings. When installation is complete, reset the clock and audio systems to their previous settings. Check that power tilt, power telescopic steering column, front power seats, power mirrors, and power shoulder belt anchorage are equipped with a memory function. When installation is complete, it is necessary to readjust the features to their previous settings. Never use a backup power supply (such as another battery) during installation work to avoid losing these memory settings.

⚠ CAUTION

DO NOT SPLICE INTO ELECTRICAL CABLES
Never cut away cable insulation to supply power to other equipment. Doing so will exceed the current carrying capacity of the wire and result in fire or electric shock.

DO NOT ALLOW CABLES TO BECOME ENTANGLED IN SURROUNDING OBJECTS
Cables or wiring that obstruct or get caught on places such as the steering wheel, shift lever, brake pedals, etc. can be extremely hazardous.

DO NOT INSTALL IN LOCATIONS WITH HIGH MOISTURE OR DUST
Moisture or dust may result in product failure.

HAVE THE WIRING AND INSTALLATION DONE BY EXPERTS
The wiring and installation of this product requires special technical skills and experience.

USE ONLY SPECIFIED ACCESSORY PARTS
Use of other than specified parts may damage product internally.

FOLLOW THE OPERATIONAL AND INSTALLATION MANUALS
YOU SHOULD READ AND FAMILIARIZE YOURSELF THOROUGHLY WITH THE FOLLOWING INFORMATION PRIOR TO INSTALLING AND USING THIS UNIT. IN ADDITION, YOU MUST CAREFULLY READ AND FOLLOW THE INSTALLATION SCHEMATICS/INSTRUCTIONS FOR THE PRODUCT AND THE VEHICLE IN WHICH IT IS BEING INSTALLED. FAILURE TO FOLLOW INSTALLATION INSTRUCTIONS MAY DAMAGE THE PRODUCT AND THE VEHICLE, WILL VOID THE PRODUCT WARRANTY, AND MAY VOID THE VEHICLE WARRANTY.

FCC WARNING
Contains FCC ID:2APD9-RSL10SIP
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.
Any changes or modifications not expressly approved by On Semiconductor could void the user's authority to operate the equipment.

LIABILITY DISCLAIMER
This application guide is based on the testing results at the time of publishing. VAIS Technology can not be held liable for damages or injuries caused by, or resulting from use of this guide. Strictly adhere to all car manufacturer warnings that pertain to the disassembly, maintenance, or servicing of the vehicle and any of its associated part systems. VAIS Technology can not be responsible for discrepancies, or inconsistencies that may occur due to automobile manufacturing changes.

TROUBLESHOOTING
Should this product fail to operate properly, please contact your Dealer or our Customer Service Department at sales@vaistech.com

Some visual assets were provided by Vecteezy.com and Grabcad.com

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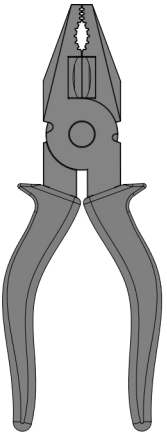
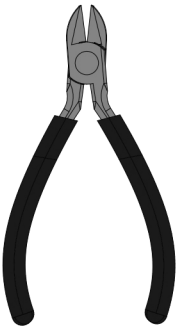
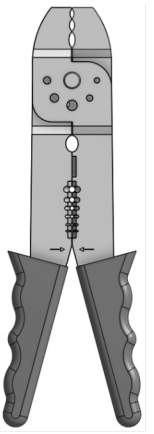
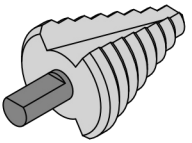
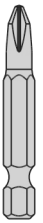
1 Tools Required

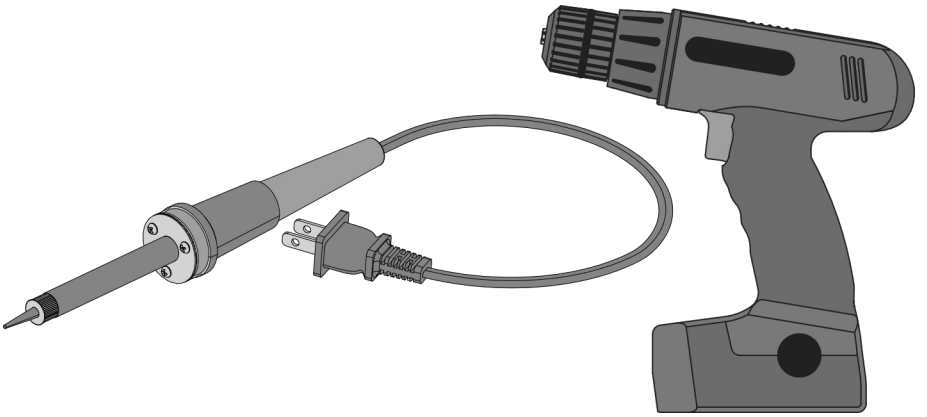


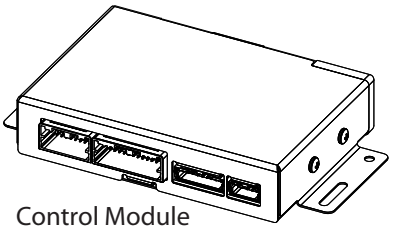


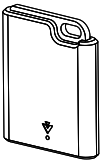




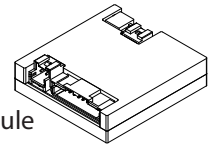


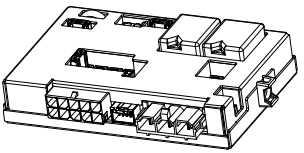



Control Module

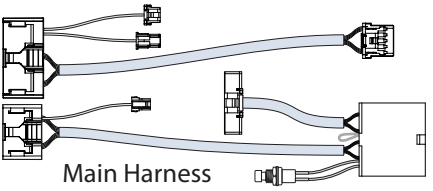

Keytag x2

Battery x2
(CR1632)


PTS Module

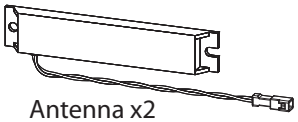

Relay Module

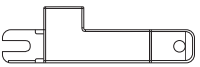
Ignition Harness

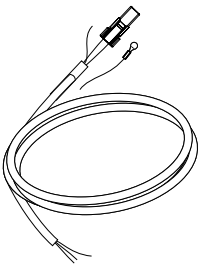

Main Harness

Relay Output Harness

Interconnect Harness


Antenna x2

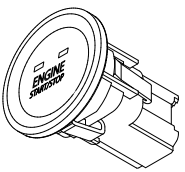

PTS Antenna


** Antenna
Extension x3

Antenna Bracket

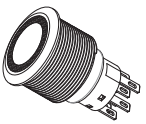
* Washer x2
* Bolt x2

Antenna Harness



28MM PTS Button

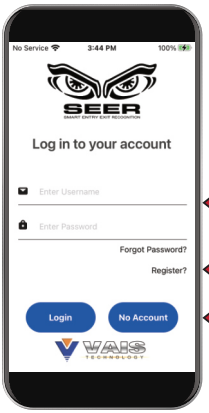
OR


22MM PTS Button

PTS Button Harness

* Replacement Bolt (92750A716) and Washer (95060A330) are available at McMaster Carr.

SEER ASSISTANT APP



AVAILABLE ON iOS AND ANDROID

Download on the App Store

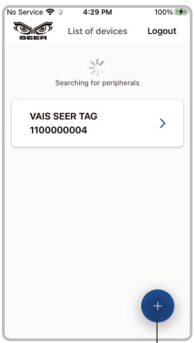
GET IT ON Google Play

Enter your credentials

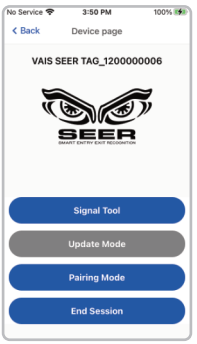
Create an account

No account?
You can still use the 'Signal Tool'

PRIOR TO REASSEMBLY OF THE VEHICLE USE THE SEER ASSISTANT APP TO CONFIRM SIGNAL QUALITY FOR THE 'CONTROL MODULE' AND 'ANTENNAS' IS OPTIMAL



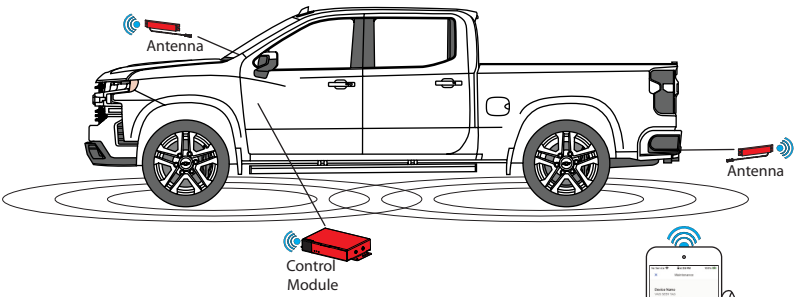
Select the Device



Choose Signal Tool

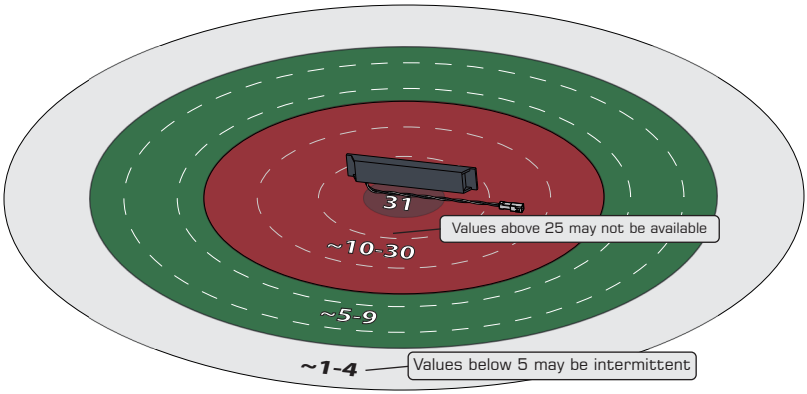
DEVICE NAME
MODULE SERIAL #
FIRMWARE VERSION
MODULE SIGNAL QUALITY
ANTENNA SIGNAL QUALITY
AVAILABLE DEVICE

Add New Device
IF ONE ISN'T SHOWN

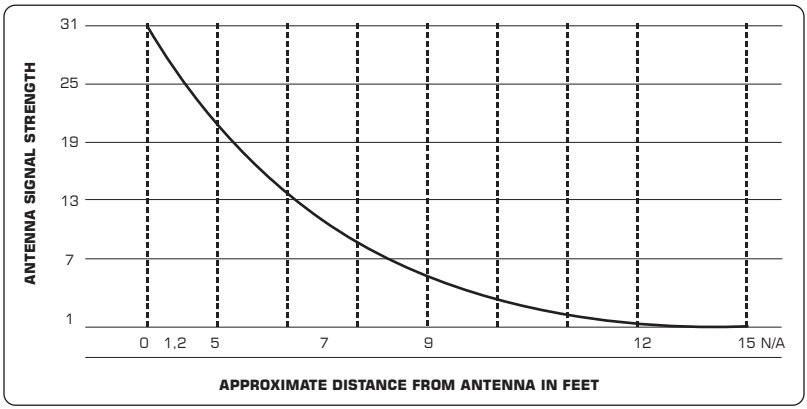


CONTROL MODULE SIGNAL QUALITY	ANTENNA SIGNAL QUALITY
Ranges from 0db to -100db	Ranges from 0 to 31
0 = Best Signal	31 = Best Signal
-100 = Weak Signal	1 = Weak Signal

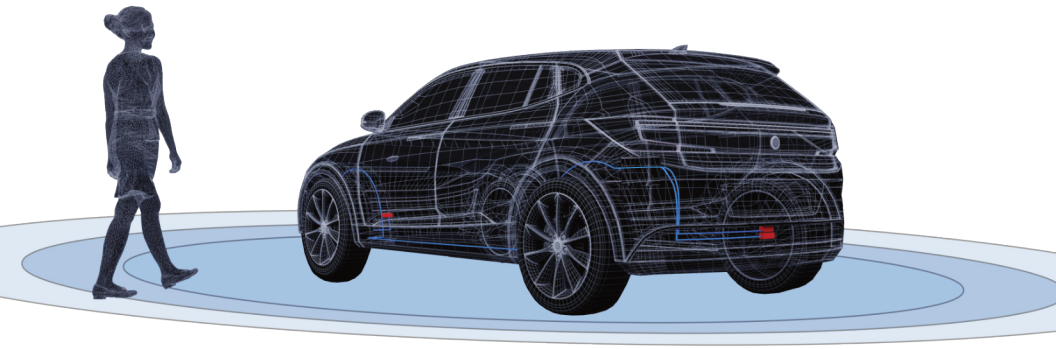
Proximity Antennas use logarithmic function, nonlinear curve.
Signal quality is relative to the placement of each Antenna.



SIGNAL DROP OFF IS EXPONENTIAL WITH RANGE



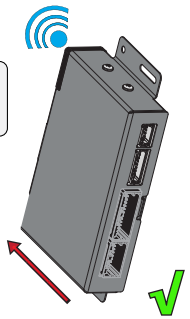
* USE FOR REFERENCE ONLY. ACTUAL DISTANCE DEPENDS ON INSTALLATION AND VEHICLE TYPE

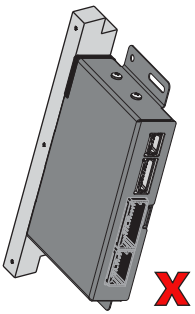


ATTENTION

DO NOT INSTALL PUSH TO START IF YOUR VEHICLE IS EQUIPPED WITH A STEERING WHEEL LOCKING MECHANISM.

Keep RF cover away from obstruction and mount as high up as possible





Allow at least 1 inch of space between small metal structures and 'Control Module'.

Completely avoid large metal pipes or other large metal structures such as vehicle frame.

ATTENTION **AVOID BLOCKING RF TRANSMITTER COVER KEEP IT AWAY FROM METAL OBSTRUCTION**

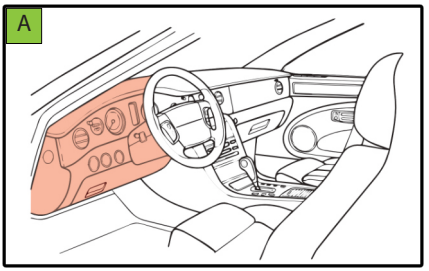
CARS WITH PLASTIC DASHBOARD

Install the Control Module behind the dash with RF cover facing driver. See Below.

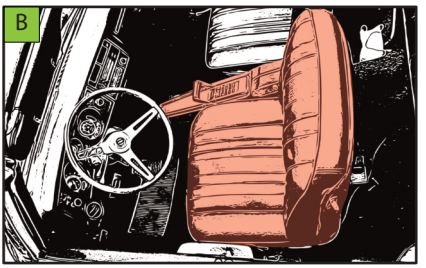
CLASSIC CARS WITH METAL DASH

Install the Control Module under the driver seat or in center console. Keep away from metal.

A



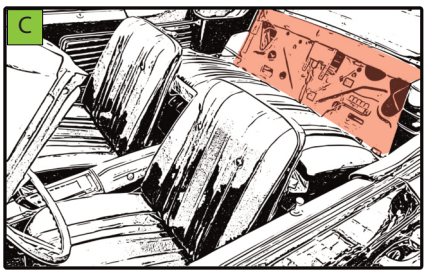
B



CLASSIC CARS WITH SEAT OBSTRUCTION

Install the Control Module behind the rear seat cavity mounted to the back wall

C



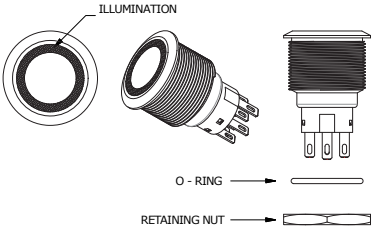
SIGNAL TOOL

Use the 'Signal Tool' to confirm reception quality before finalizing an install location.

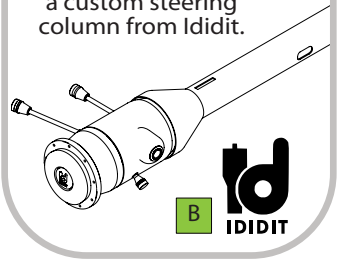
Depending on the kit purchased, the PTS Button will come as a 22mm metal button or a 28mm factory style.
IF BROKEN OR LOST, REPLACE WITH VAIS TECHNOLOGY BUTTON ONLY

Option 1 Metal - 22mm Button

A

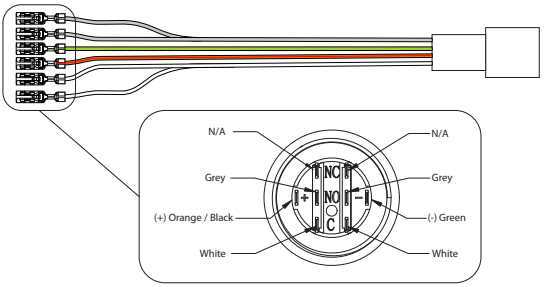


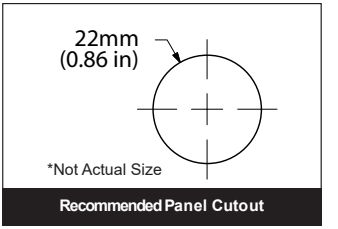
22mm option is available built into a custom steering column from Ididit.



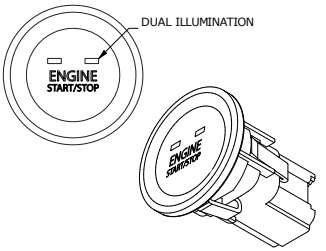
SOLD SEPARATELY
www.ididit.com

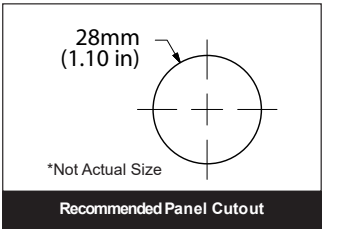
If using the metal button you must connect terminals as shown



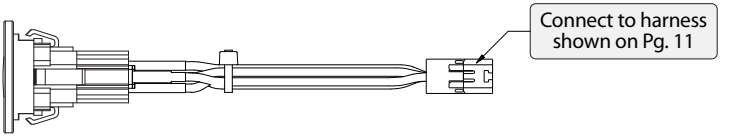


Option 2 Plastic - 28mm Button

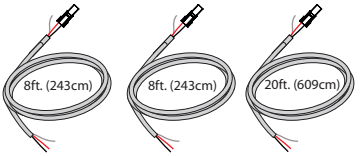




If using the Plastic Button the harness is plug and play



Prior to reassembly, it is recommended to position all components in the planned install location and utilize the SEER Assistant app to confirm reception quality. See Pg 4.

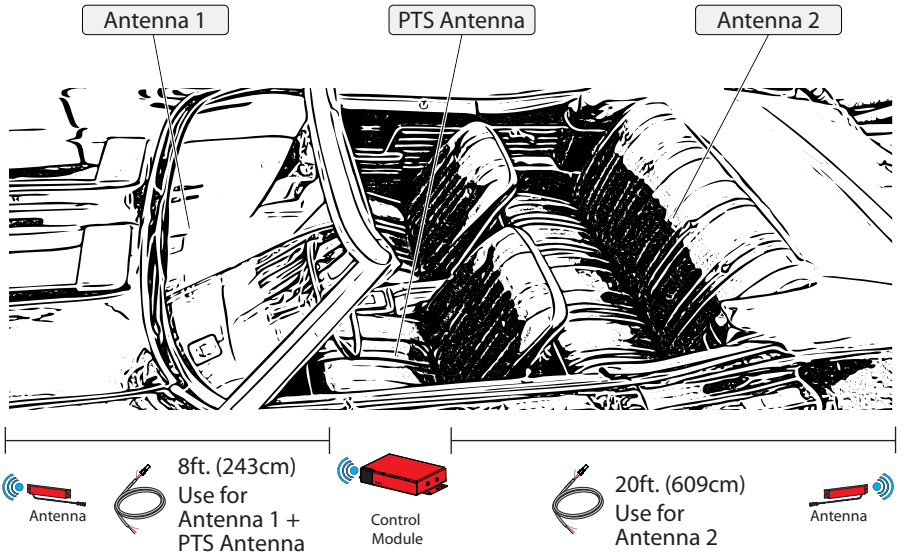


Use the appropriate 'Antenna Extension' based on where the 'Control Module' will be located.

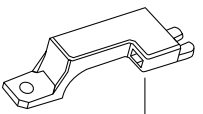
PTS Antenna Extension connector is a different size from standard. Verify before routing.

ATTENTION

DO NOT PLACE ANTENNAS UNDER OR BEHIND METAL



PTS Antenna

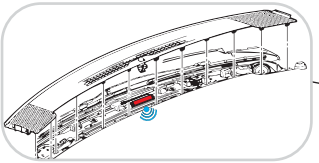


Install the PTS Antenna close to the driver, away from metal

DASH

'Antenna' 1

ATTENTION
DO NOT PLACE ANTENNAS UNDER OR BEHIND METAL

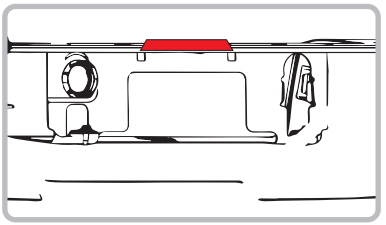


Place 'Antenna' 1 underneath dash pad or on top of dash as high up as possible

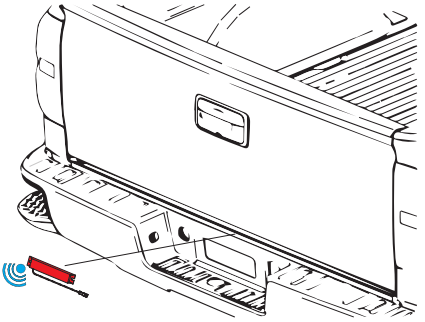
TRUCK

'Antenna' 2

Avoid metal insert panels and metal surfaces on the back of the bumpers.

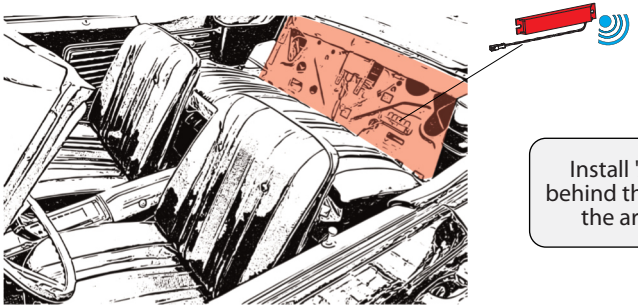


BEHIND BUMPER VIEW



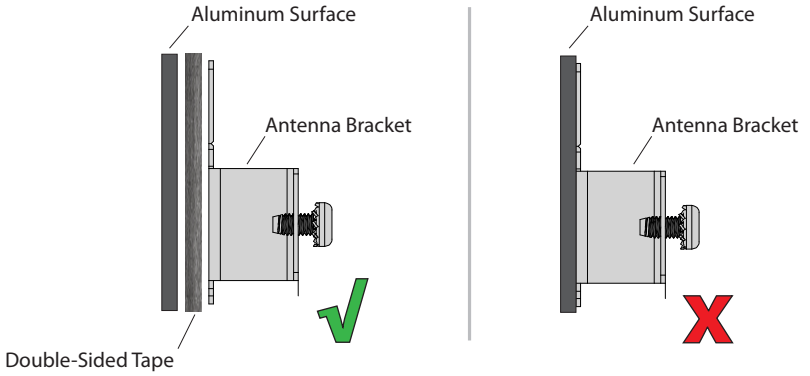
Install 'Antenna' 2 on top of the rear bumper

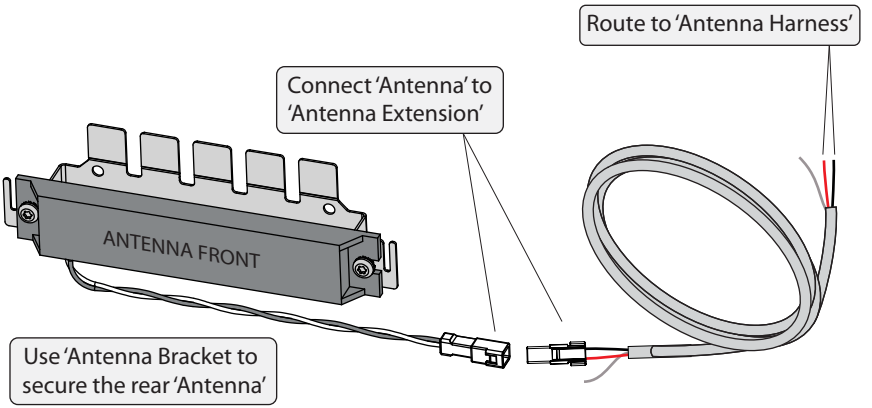
SEDAN



Install 'Antenna' 2 behind the rear seat in the area shown

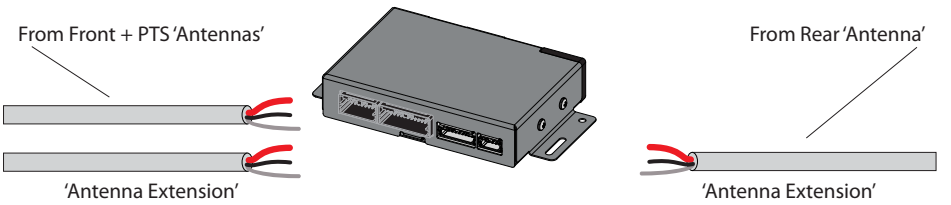
ATTENTION Avoid electrical contact when mounting to Aluminum



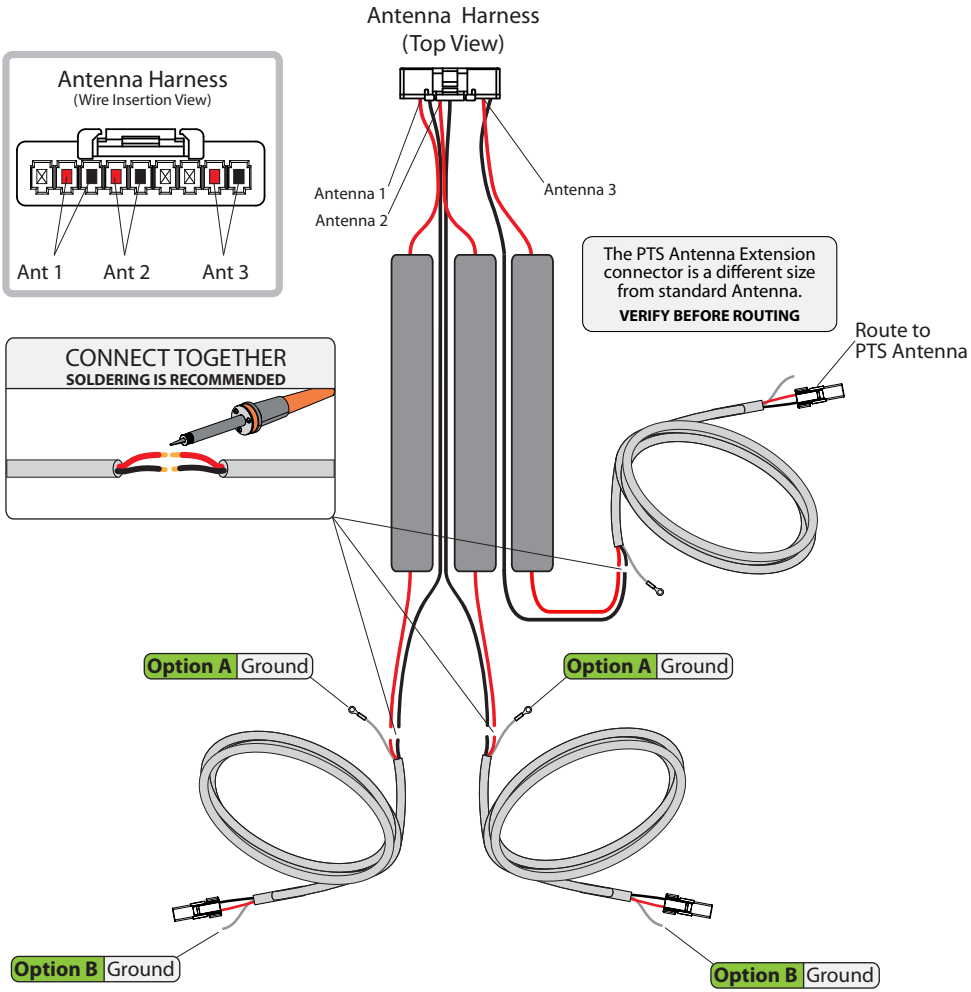


Route each 'Antenna Extension' to the planned mounting location of the 'Control Module'.

- Mount in dry and safe location
- Secure the 'Control Module' in place
- DO NOT block RF Cover (See Pg. 5)



Connect all 'Antenna Extension(s)'
to each pair of leads as shown.
(Pairs are separated by tape. Do NOT mix pairs.)



ATTENTION

Connect only Option A Ground or Option B Ground
DO NOT CONNECT BOTH

ATTENTION: PUSH START WILL NOT OPERATE UNLESS YOU PERFORM THE FOLLOWING!

CONTROL MODULE POWER

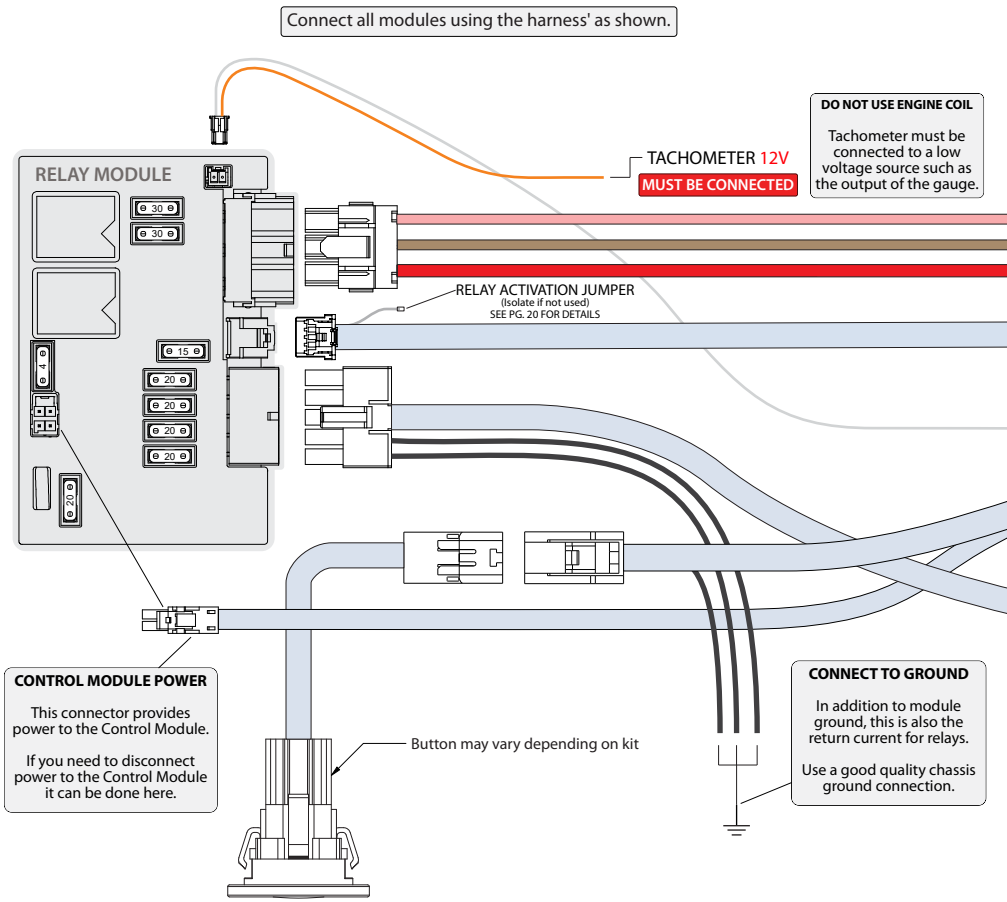
When connecting initial power, the 'Control Module' will search for the 'Antennas'. If the 'Control Module' is connected prior to the 'Antennas'. it will not function properly. If the system does not function properly, disconnect and reconnect the 'Control Modules' power.

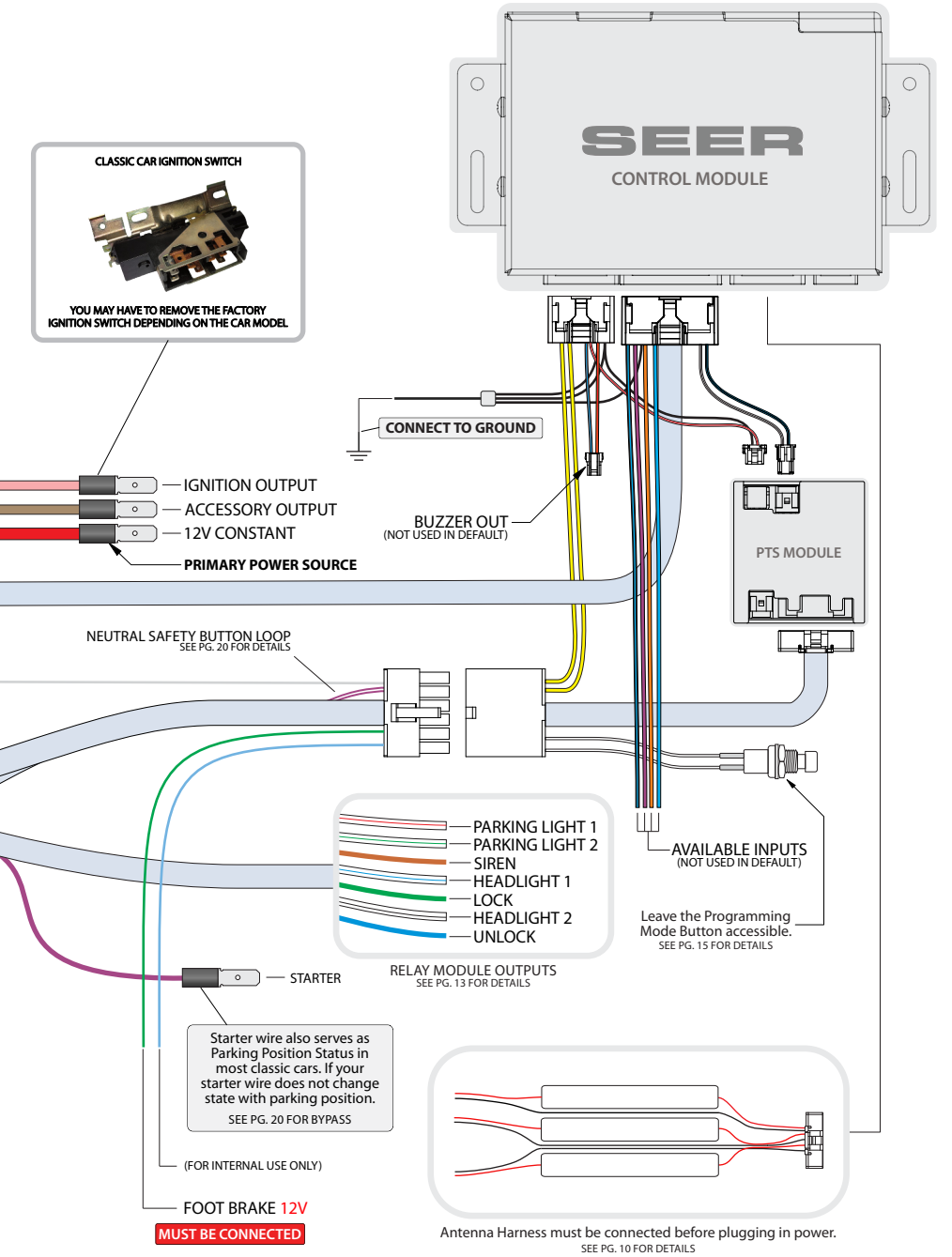
TACHOMETER MUST BE CONNECTED

When Push Button is pressed for engine start SEER will recognize tachometer feedback. Once tachometer is established, SEER will automatically stop applying power to the starter.

FOOT BRAKE MUST BE CONNECTED

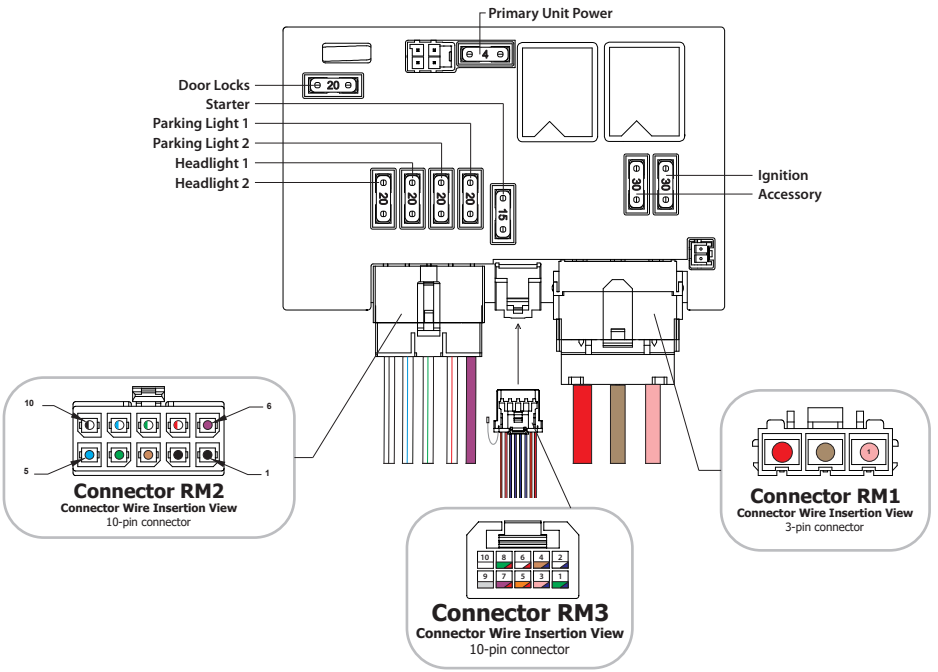
Foot Brake signal input wire must be connected for engine operation.




SEER
CONTROL MODULE
CLASSIC CAR IGNITION SWITCH
YOU MAY HAVE TO REMOVE THE FACTORY IGNITION SWITCH DEPENDING ON THE CAR MODEL
CONNECT TO GROUND
IGNITION OUTPUT
ACCESSORY OUTPUT
12V CONSTANT
PRIMARY POWER SOURCE
BUZZER OUT
(NOT USED IN DEFAULT)
PTS MODULE
NEUTRAL SAFETY BUTTON LOOP
SEE PG. 20 FOR DETAILS
PARKING LIGHT 1
PARKING LIGHT 2
SIREN
HEADLIGHT 1
LOCK
HEADLIGHT 2
UNLOCK
AVAILABLE INPUTS
(NOT USED IN DEFAULT)
Leave the Programming Mode Button accessible.
SEE PG. 15 FOR DETAILS
RELAY MODULE OUTPUTS
SEE PG. 13 FOR DETAILS
STARTER
Starter wire also serves as Parking Position Status in most classic cars. If your starter wire does not change state with parking position.
SEE PG. 20 FOR BYPASS
(FOR INTERNAL USE ONLY)
FOOT BRAKE 12V
MUST BE CONNECTED
Antenna Harness must be connected before plugging in power.
SEE PG. 10 FOR DETAILS

RELAY MODULE WIRING & FUSES

The Relay Module is plug-and-play to the Control Module.
The outputs will need to be directly wired to what you are activating.
SEE RELAY CURRENT AND USAGE TABLE BELOW FOR DETAILS



Connector RM1 - Outputs			
PIN	Wire Color	Function	Current
1	Pink	Ignition	30A (+)
2	Brown	Accessory	30A (+)
3	Red	12V Constant Source	

Connector RM2 - Outputs			
PIN	Wire Color	Function	Current
1	Black	Ground	Ground
2	Black	Ground	Ground
3	Brown	Siren*	5A (-)
4	Green	Lock	20A (+)
5	Blue	Unlock	20A (+)
6	Purple	Starter	15A (+)
7	White/Red	Parking Lt 1	20A (+)
8	White/Green	Parking Lt 2	20A (+)
9	White/Blue	Headlight 1	20A (+)
10	White/Black	Headlight 2	20A (+)

Connector RM3 - Inputs		
PIN	Wire Color	Function
1	Green/Blue	Ignition
2	White/Blue	Accessory
3	Pink/Blue	Starter
4	Brown/Blue	Lock
5	Orange/Red	Unlock
6	White/Red	Horn/Siren
7	Purple/Red	Parking Light
8	Green/Red	Headlights
9	Grey	Relay Jumper
10	Open	Jumper Slot

*Use RM2 Pin #3 - Siren as a Negative Output Rated up to 5A

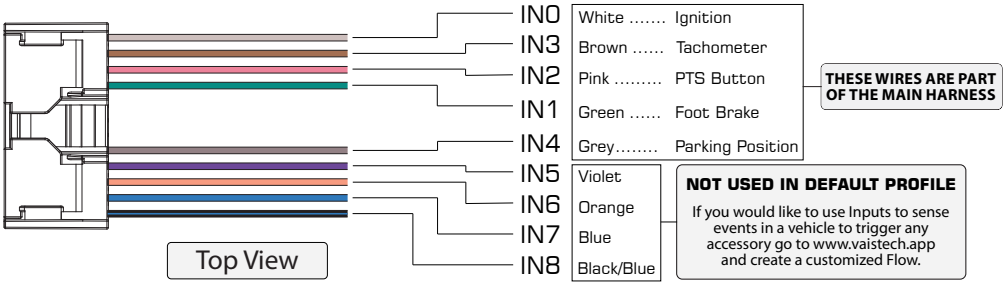
ATTENTION: DO NOT USE DEFAULT SETUP IF VEHICLE IS EQUIPPED WITH REMOTE START

Vehicles equipped with remote start requires Foot Brake wire to be connected and a custom flow must be created. Visit www.vaistech.app and refer to the In-Motion Event help.

SEER comes with a factory default configuration shown below. If the default configuration does not work for your application you can fully customize SEER by using the Flow Editor.

CONTROL MODULE INPUTS

In this configuration Inputs 0-4 are used for default features (Shown below)
Inputs 5-8 are available and can be used to sense events occurring in the vehicle.

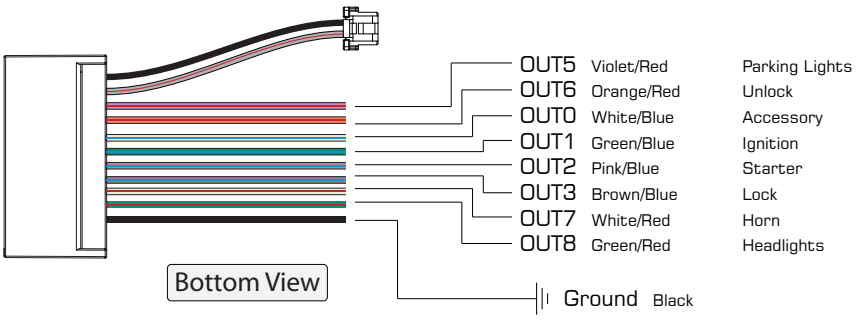


CONTROL MODULE OUTPUTS TO RELAY

Wires shown in this section are part of the Main Harness going from the Control Module outputs to the Relay Module inputs.

In the default configuration Outputs are set for the actions listed below.

YOU MUST CONNECT ALL GROUND WIRES FOR SEER TO OPERATE PROPERLY



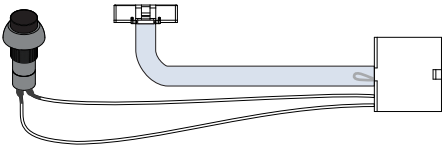
Visit www.vaistech.app to create your own custom SEER flow.

15 Programming Mode Button

Use the 'Programming Mode Button' located on the main harness to put SEER into the various modes listed below.

IF BROKEN OR LOST REPLACE WITH NORMALLY CLOSED (NC/NO) BUTTON ONLY

Install in a place that is easily accessible.



HOW TO ENTER PROGRAMMING MODE (VEHICLE OFF)

1. Press Engine Start button twice to turn on Ignition
2. 2s — Start pressing within 2 seconds
3. Press Rapidly
4. Internal Buzzer will sound each time button is pressed. (Short)
5. Press button (x) times (shown below) for the mode to be entered
6. Buzzer will sound, programming mode has been entered. (Long Beep)

x3	**UPLOAD NEW FLOW UPDATE FIRMWARE**	END SESSION (LOCATED ON APP) **OR**	**2 MINUTE TIMEOUT**
x5	**REGISTER SEER TO YOUR ACCOUNT**	END SESSION (LOCATED ON APP) **OR**	**2 MINUTE TIMEOUT**
x7	**PAIR A REPLACEMENT KEYTAG** * CONTACT US FOR MORE DETAILS	ON/OFF **OR**	**2 MINUTE TIMEOUT**
x15	**ERASE PAIRING OF ALL KEYTAGS** * IF ALL TAGS ARE ERASED YOU WILL NOT BE ABLE TO START THE ENGINE UNTIL A NEW TAG IS PAIRED!		**AUTO EXIT**

Modes with "2 Minute Timeout" will autosave and exit after 2 minutes of inactivity. For modes with ON/OFF, turn off Ignition for 10 seconds, turn Ignition back on, immediately press button (x) times to exit. To cancel programming and start over turn off Ignition for 15 seconds.

HOW TO EXIT PROGRAMMING MODE (TAG PAIRING ONLY)

1. Press Engine Start button once to turn OFF Ignition
2. 10s — Wait 10 seconds
3. Turn Ignition ON
4. Press button 7 times to exit pairing mode
5. Turn Ignition OFF
6. Buzzer will sound if Tag pairing mode is being exited (Long)

Keytag is equipped with an accelerometer and will go into power saving mode if inactive for over 90 seconds.

IF TAG GOES TO SLEEP OUTSIDE THE VEHICLE + 90s = **KEYTAG GOES INTO POWER SAVE MODE**
DOORS WILL LOCK

IF TAG GOES TO SLEEP INSIDE THE VEHICLE + 90s = **KEYTAG GOES INTO POWER SAVE MODE**
DOORS WILL NOT LOCK

If the Control Module does not see activity from the Keytag or Ignition for 36 hours it will go into a power saving mode and eventually deep sleep.

NORMAL OPERATION — Control Module will check for Keytag often for fast operation

36h **SLEEP STAGE - 1** — The interval the Control Module checks for Keytag is reduced

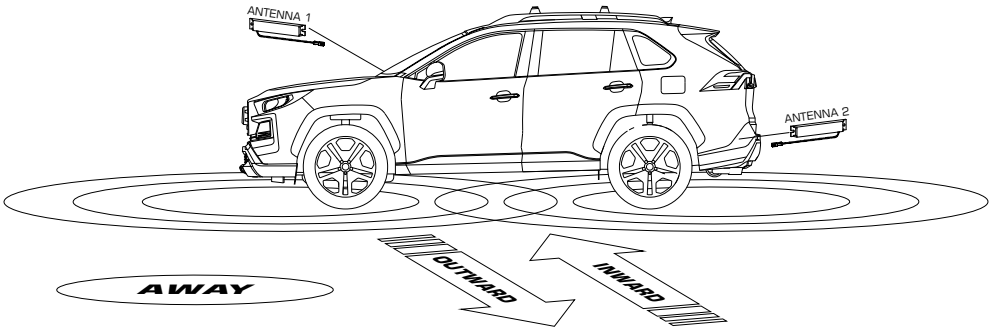
36h x2 **SLEEP STAGE - 2** — The interval the Control Module checks for Keytag is reduced drastically to further save power

During Sleep Stages 1-2 user experience may be delayed. Once the Control Module recognizes the Keytag, normal operation will be resumed.

36h x3 **SLEEP STAGE - 3 (DEEP SLEEP)** — Control Module will no longer check for Keytag. Once SEER reaches Deep Sleep, the user will need to press the engine start button to wake up the system.

PRESS ENGINE START BUTTON = WIRELESS COMMUNICATION RESUMED

SEER will respond to user position and activate different features depending on which direction they are moving (Inward/Outward).



APPROACH

Inward movement will trigger the following:

When the Keytag is first recognized on approach SEER will activate:

- Headlights (on for 30 seconds)

When the Keytag gets closer to the vehicle SEER will activate:

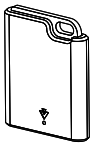
- Unlock
- Hazard / Parking Lights (Double Flash)
- Siren (Double Chirp)

DEPARTURE

Outward movement will trigger the following:

When the Keytag is no longer recognized SEER will activate:

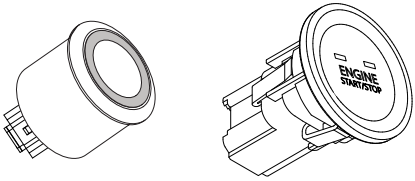
- Lock
- Siren (Single Chirp)
- Hazard / Parking Lights (Single Flash)
- Headlights will shut off 2 seconds after exiting the zone



KEYTAG MUST BE PRESENT FOR PTS BUTTON TO OPERATE

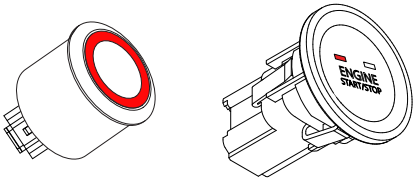
ENGINE START BUTTON STAGES

When the Keytag is present but brake pedal not pressed and car is in Park.



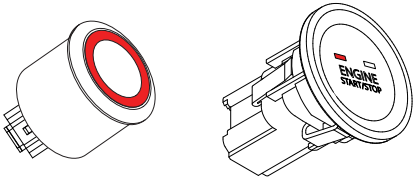
Vehicle Off

Button light will also turn off when car is running.



Accessory - 1st Button Press

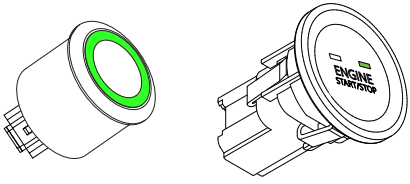
Only basic accessories will be activated such as Radio.



Ignition / ON - 2nd Button Press

Accessory + all primary circuits will be activated.

PRESS FOOT BRAKE WITH KEYTAG PRESENT AND CAR IN PARK
Button will turn Green indicating engine can be started.



Engine Start - Button Press with Keytag present and foot on the brake

All circuits + engine will be activated.

EMERGENCY SHUT-OFF

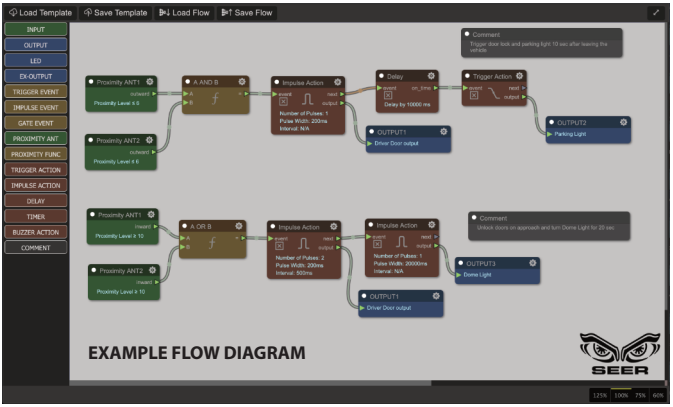
Press and hold Engine Start button for 10 seconds for Emergency Shut-Off

ATTENTION

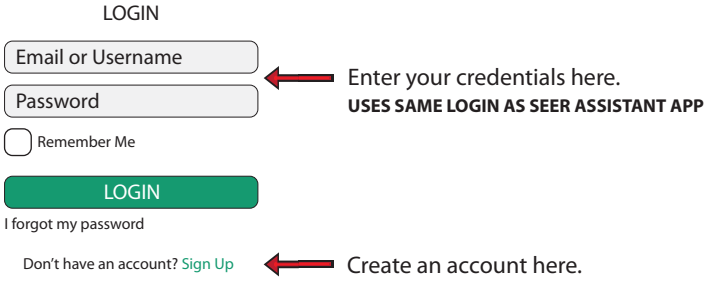
SEER Control Module ships with a standard profile template that will fit most basic vehicle applications.

SEER FLOW EDITOR

SEER Flow Editor is used to customize and configure the module to fit your custom vehicle application needs. (See Example Below) Refer to the SEER Flow Editor training modules for further details.



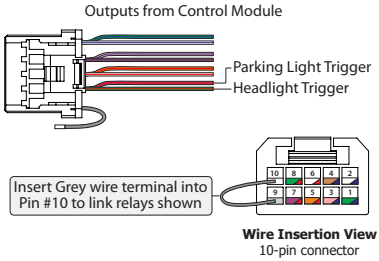
Go to www.vaistech.app to create an account.

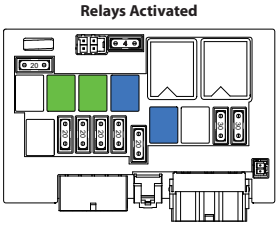


Parking Light Relay Activation Jumper

The Relay Module harness comes with a Grey jumper wire inserted into Pin #9. When the Jumper is also inserted into Pin #10 both pairs of relays (Green & Blue) will be activated with the either output from the Control Module (Parking Light or Headlight).

Deactivate one of the outputs via the Flow Editor if the jumper is used.

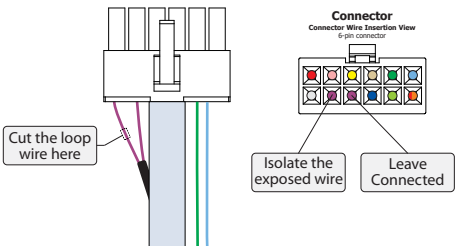


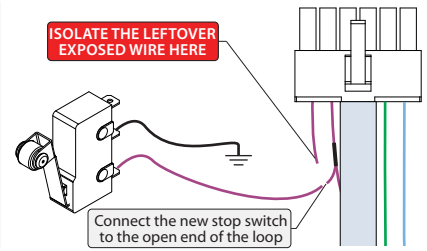


Neutral Safety Bypass Loop

In most classic cars when the gear shift is put into the park position the neutral safety switch will be activated so you can start the vehicle. If the factory neutral safety switch is broken or you are working with a newer vehicle that has a separate parking position signal you can cut the loop shown below and install your own contact switch.

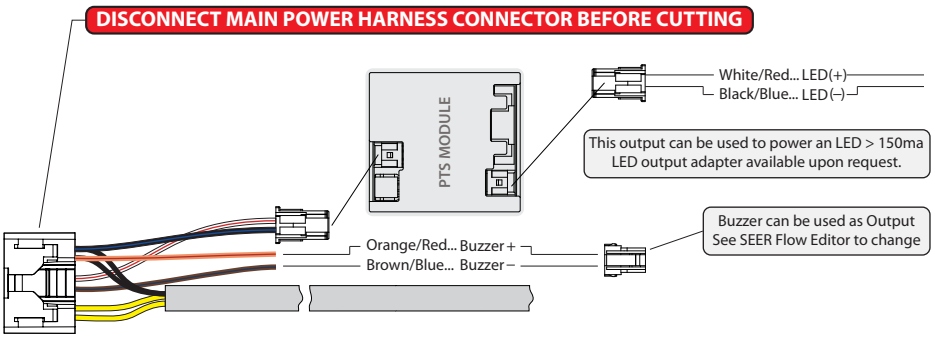
VAIS TECHNOLOGY IS NOT RESPONSIBLE FOR ANY MODIFICATIONS MADE TO VEHICLE SAFETY EQUIPMENT.





Buzzer & LED

Buzzer and LED are not included. If your application calls for either option, you may order the mating connectors or cut off the existing connectors and use the diagram below to make your connections.



Warranty is available for download: https://www.vaistech.com/download/15244

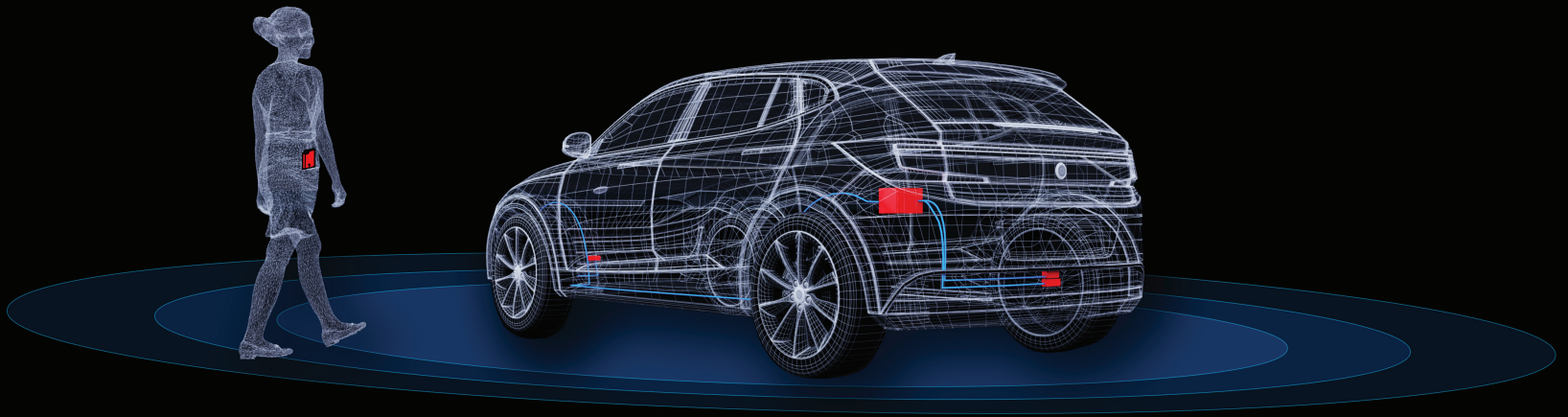
To request a paper warranty copy please contact us:

VAIS Technology
Warranty Department
8811 American Way
Unit 125
Englewood, CO 80112
720-733-2348
sales@vaistech.com

VAIS Technology is not responsible for or liable for any installation cost, property loss, damages whatsoever, including but not limited to, any consequential damages, incidental damages, loss of time, loss of earnings, commercial loss, loss of economic opportunity and the like that may or may not be resulted from the operation of the SEER product(s). Manufacturer does offer a limited warranty to replace or repair the control module. See Warranty for more information.

VAIS
TECHNOLOGY

User Guide



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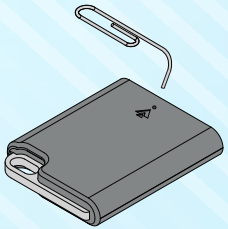
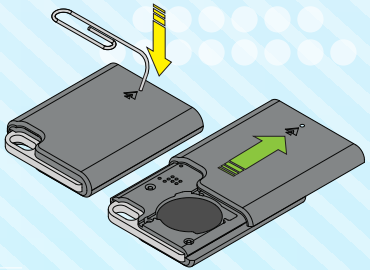
Replacing the Battery

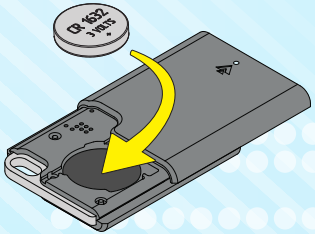
1 Insert a pin or paperclip into front cover opening



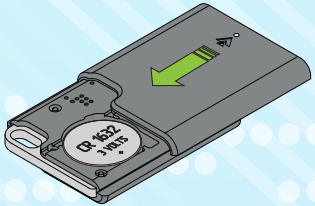
2 Push down on pin opening and slide front cover down



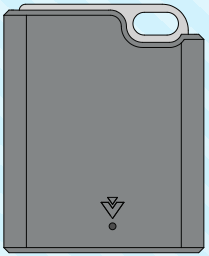
3 Replace battery (CR 1632)



4 Slide front cover up until it clicks



If your Key Tag was damaged or lost please contact VAIS Technology



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SEER
SMART ENTRY EXIT RECOGNITION

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