KNOB-SWITCH KEY CAP INSTALLATION GUIDE

System Description:

Convert a regular key into a knob switch key that seamlessly becomes a part of your vehicle. Advanced Keys' Knob Switch Key Cap with Smart Keyless Entry System allows you to operate your vehicle securely without the key/remote, just toggle the switch to ACC, ON or Start like you would with a regular metal key. In addition, the Knob Switch Key Cap is also useful as a Steering Lock/Transmission Lock bypass mechanism for the Push Start System or it can be used as a simple and cost effective immobilizer bypass device.

Disclaimer:
This guide serves as a general wiring method and it does not necessarily represent the full extent of the specific wiring of the user's vehicle. This guide is written for properly trained technicians, a certain level of skill and knowledge is therefore assumed. Knob Switch Key Cap is intended to be used in conjunction with Advanced Keys' Smart Key System (AK-103) for vehicle security from unauthorized vehicle operation. Advanced Keys product will provide reasonable security with its intended methods of installation but does not guarantee vehicle security violation or theft. Any OEM vehicle security deviation/modification should be exercised with caution and due diligence on user and installer part. Installation of this product is acceptance of this statement and releases Advanced Keys from any and all liability(ies) that may directly or indirectly result from use of Advanced Keys' products.

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Key Conversion Steps:

Before beginning actual modification, read through this manual first and decide which method the key cap is going to be used for:

Method 1 - <u>Without</u> RF Immobilizer Chip: (Recommended)

OEM key is not required. Use an inexpensive, key blank and have it cut by a local key cutter.

Method 2 - <u>With</u> RF Immobilizer Chip:

Use a spare OEM key if possible, otherwise request vehicle dealer to program a spare key for this installation method as the immobilizer chip inside the key is required.

Note: For older vehicles that do not have immobilizer, please follow method 2 instructions.

1. Mark the metal key when fully inserted and pushed into the key cylinder. This is the minimum length required for the key to turn.

Final Look ▶

2. With care, use pliers to snap apart the plastic handle. Note most OEM keys contain a RF immobilizer chip in the center or on the side of the of the plastic handle. Use caution when taking apart, do not damage the RF immobilizer chip if it is required for immobilizer bypass installation method 2.
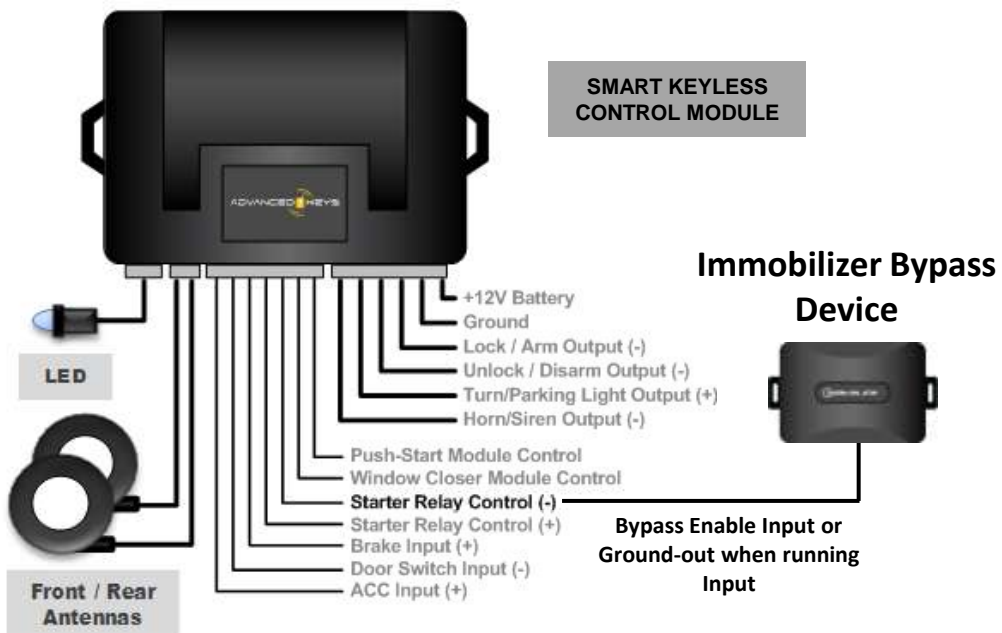
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Method 1: <u>Without</u> RF Immobilizer Chip

This is the recommended method when a third-party immobilizer bypass or data-bypass device is used. The advantage of this method is that it does not require any modification to the key-switch ignition wiring and it allows a regular OEM key to operate the vehicle if necessary.

Directly attach the metal key to the Knob Cap and depending on fit, use hot glue or Loctite to secure the metal key inside the cap. (Make sure minimum length line is visible after securing)

Connect the Smart Keyless Entry module to the Immobilizer Bypass device via "**Starter Relay Control (-)**". This output will enable immobilizer bypass when a valid access key is detected. Once immobilizer is bypassed you may start the vehicle with the knob-switch. No further modification to vehicle is required.

SMART KEYLESS CONTROL MODULE

LED

+12V Battery
Ground
Lock / Arm Output (-)
Unlock / Disarm Output (-)
Turn/Parking Light Output (+)
Horn/Siren Output (-)

Push-Start Module Control
Window Closer Module Control
Starter Relay Control (-)
Starter Relay Control (+)
Brake Input (+)
Door Switch Input (-)
ACC Input (+)

Front / Rear Antennas

Immobilizer Bypass Device

Bypass Enable Input or Ground-out when running Input
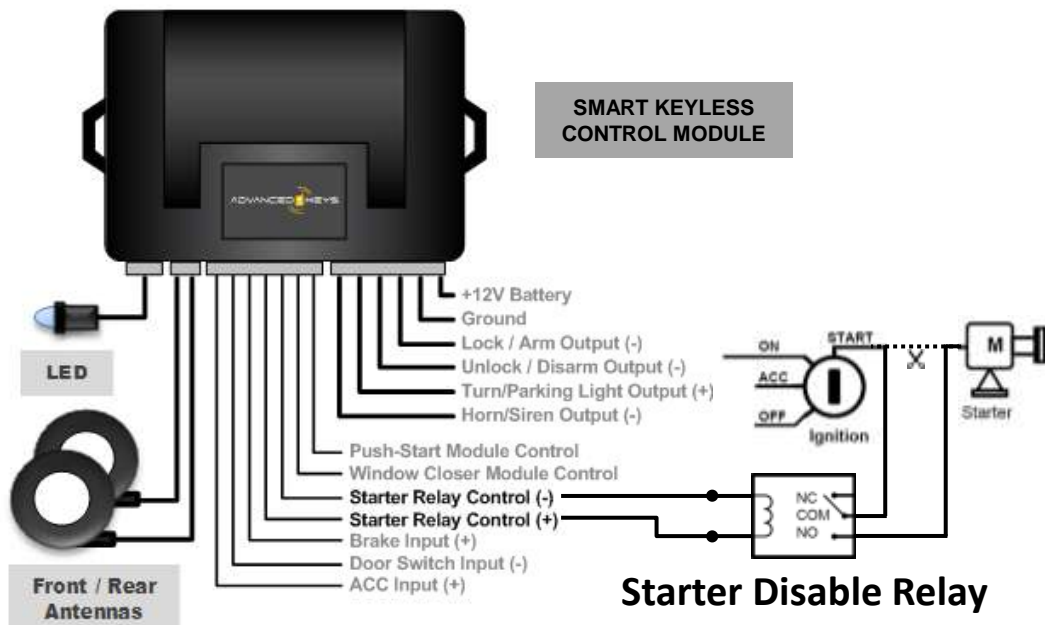
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Method 2: <u>With</u> RF Immobilizer Chip

This method is essentially using the OEM key's immobilizer chip as a means to selectively bypass the immobilizer when starting the vehicle. The advantage of this method is that it does not require the user to purchase and install a separate immobilizer bypass module; however, some modifications to the key switch ignition wiring are required.

Directly attach the metal key to the Knob Cap and depending on fit, use hot glue or Loctite to secure the metal key inside the cap. (Make sure minimum length line is visible after securing) Then place the RF Immobilizer Chip into one of the available slots. Start vehicle to test and verify RF chip position, adjust the chip position as required.
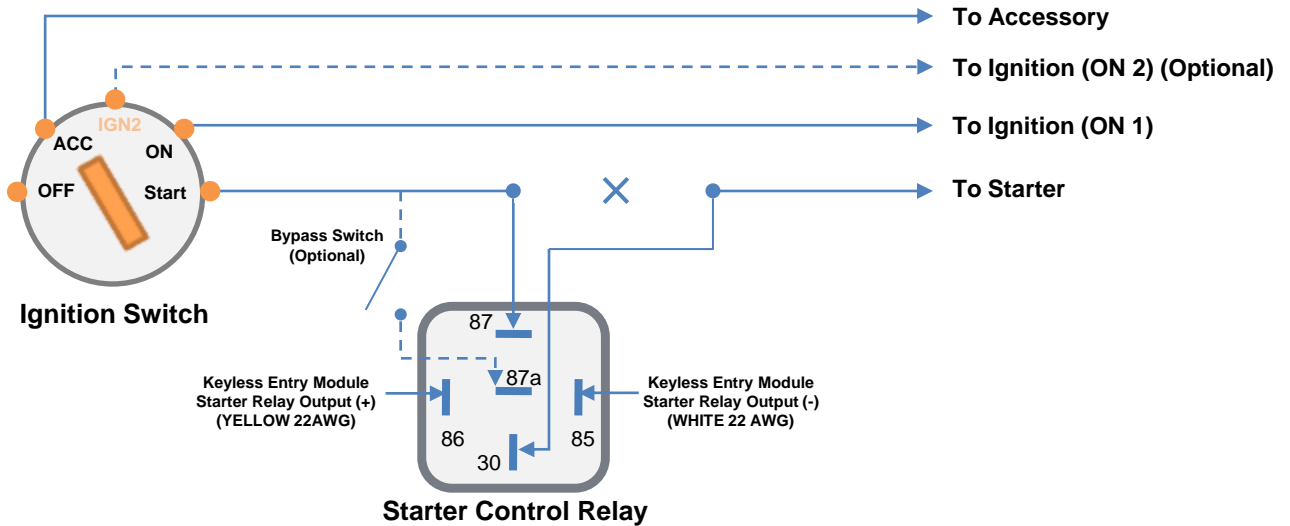

Using the Smart Keyless Entry module's **Starter Disable Relay** (included) connect Starter's 12V side to Normally Closed side of the relay and Starter side to Normally Open side of the relay. Smart Keyless Entry module will enable the Starter Disable Relay for ignition only when a valid access key is present and detected.

SMART KEYLESS CONTROL MODULE

LED

Front / Rear Antennas

+12V Battery
Ground
Lock / Arm Output (-)
Unlock / Disarm Output (-)
Turn/Parking Light Output (+)
Horn/Siren Output (-)
Push-Start Module Control
Window Closer Module Control
Starter Relay Control (-)
Starter Relay Control (+)
Brake Input (+)
Door Switch Input (-)
ACC Input (+)

Starter Disable Relay

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Method 2: <u>With</u> RF Immobilizer Chip

Detailed Ignition Wiring Diagram (Starter Bypass)

To Accessory

To Ignition (ON 2) (Optional)

IGN2

ACC ON

OFF Start

To Ignition (ON 1)

To Starter

Ignition Switch

Bypass Switch
(Optional)

87

87a

Keyless Entry Module
Starter Relay Output (+)
(YELLOW 22AWG)

86   85   Keyless Entry Module
Starter Relay Output (-)
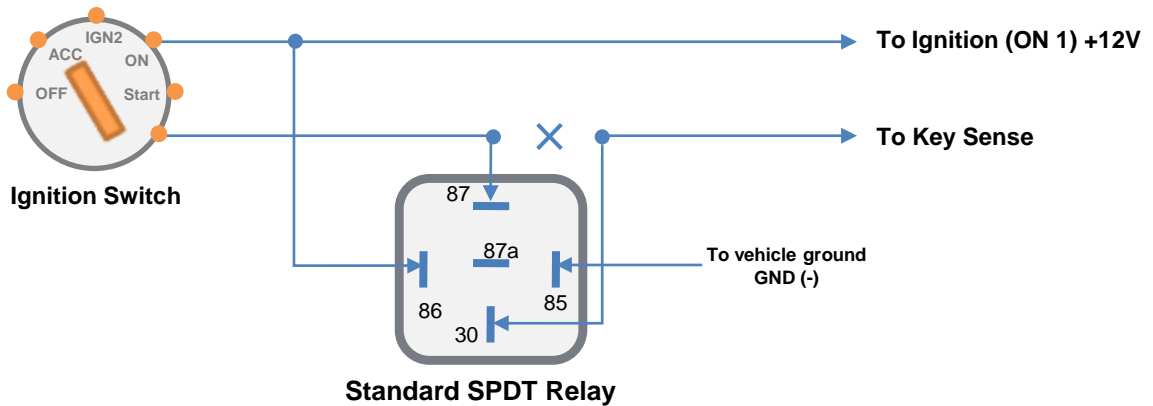(WHITE 22 AWG)

30

Starter Control Relay

Note: Method 2 ignition wiring will maintain key cylinder's ACC and ON functions. However, without a valid smart access key the vehicle's starter function will be disabled by the Starter Control Relay to prevent unauthorized vehicle ignition. (This means you will not be able to start the car without the smart access key even if you use an OEM key). If desired, a switch (not included) can be added in parallel with the Starter Control Relay's normally closed pin (87a) for manual bypass.

Adding this <u>bypass switch</u> to the starter control relay is <u>not recommended</u> as vehicle's security could be easily compromised. Use this bypass switch at your own discretion and risk.

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Key Sense Function Bypass (optional)

Some vehicle will acknowledge when a key is fully inserted into the key cylinder. This usually triggers certain pre-programmed reactions such as (not limited to) disabling the OEM remote's ability to arm/disarm or lock/unlock doors, releasing trunk, dome light and instrument cluster illumination etc. Since this setup require a key to be present in the key cylinder full time, some vehicle may require bypassing this function.

Reference following bypass wiring method by using a standard SPDT relay:

IGN2
ACC   ON
OFF   Start

Ignition Switch

To Ignition (ON 1) +12V

To Key Sense

87
87a
To vehicle ground GND (-)
86   85
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Standard SPDT Relay

Closing and Function Verification

Insert key into the key cylinder and toggle the knob through all power states to confirm proper operation of the vehicle. Verify security feature to ensure vehicle does not start without the smart access key in range.

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