

# INSTALLATION GUIDE

# DS4+

HK2



This product is intended for installation by a professional installer only! Attempts to install this product by a person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

2016-10-20

# DIRECTED®

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## Warning! Safety first

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 The following safety warnings must be observed at all times:

- Due to the complexity of this system, installation of this product must only be performed by an authorized Directed dealer.
- When properly installed, this system can start the vehicle via a command signal from the remote control. Therefore, never operate the system in an area that does not have adequate ventilation.

The following precautions are the sole responsibility of the user; however, authorized Directed dealers should:

- Never use a test light or logic probe when installing this unit. Always use a multimeter.
- Never operate the system in an enclosed or partially enclosed area without ventilation (such as a garage).
- When parking in an enclosed or partially enclosed area or when having the vehicle serviced, the remote start system must be disabled using the installed toggle switch. It is the user's sole responsibility to properly handle and keep out of reach from children all remote controls to assure that the system does not unintentionally remote start the vehicle.
- **USER MUST INSTALL A CARBON MONOXIDE DETECTOR IN OR ABOUT THE LIVING AREA ADJACENT TO THE VEHICLE. ALL DOORS LEADING FROM ADJACENT LIVING AREAS TO THE ENCLOSED OR PARTIALLY ENCLOSED VEHICLE STORAGE AREA MUST REMAIN CLOSED AT ALL TIMES.**

Use of this product in a manner contrary to its intended mode of operation may result in property damage, personal injury, or death. Except when performing the Safety Check outlined in this installation guide, (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the keys in the ignition. The user is responsible for having the neutral safety feature of the vehicle periodically checked, wherein the vehicle must not remotely start while the car is in gear. This testing should be performed by an authorized Directed dealer in accordance with the Safety Check outlined in this product installation guide. If the vehicle starts in gear, cease remote start operation immediately and consult with the user to fix the problem immediately.

OPERATION OF THE REMOTE START MODULE IF THE VEHICLE STARTS IN GEAR IS CONTRARY TO ITS INTENDED MODE OF OPERATION. OPERATING THE REMOTE START SYSTEM UNDER THESE CONDITIONS MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. IMMEDIATELY CEASE THE USE OF THE UNIT AND REPAIR OR DISCONNECT THE INSTALLED REMOTE START MODULE. DIRECTED WILL NOT BE HELD RESPONSIBLE OR PAY FOR INSTALLATION OR REINSTALLATION COSTS.

Remote starters for manual transmission pose significant risks if not properly installed and operated. When testing to ensure the installation is working properly, only remote start the vehicle in neutral gear, on a flat surface and with a functional, fully engaged parking brake. Do not allow anyone to stand in front of or behind the vehicle.

This product should not be installed in any convertible vehicles, soft or hard top with a manual transmission. Installation in such vehicles may pose certain risk.

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.

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

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.  
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.  
Consult the dealer or an experienced radio/TV technician for help.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device contains the FCC ID: EZSDEIBLE1 / IC: 1513A-DEIBLE1

Ce dispositif contient de la FCC ID: EZSDEIBLE1 / IC: 1513A-DEIBLE1

# Introduction

The HK2 firmware for DS4+ is a complete solution for remote start, security (if applicable), bypass interface, and convenience needs compatible with specific Hyundai vehicles.



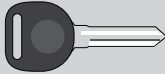


**Warning!** This module can only be programmed via the web tool, which can be found on [www.directechs.com](http://www.directechs.com) or using the Directechs Mobile application for smartphones. Features and functions will become accessible when you connect the module using the XKLoader.

## Pre-installation and application warnings

**Start here**

**Firmware notes:** This section highlights important information for this specific firmware and will assist in pricing accordingly, as well as bringing awareness to any operational or vehicle limitations.

<b>T-Harness compatible</b> 	<b>No</b> 		<b>Keys required for programming</b> <b>1</b>	<b>Keys required for operation</b> <b>0</b>
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- Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.
- It is important to check that the fuses are positioned correctly in the module. Refer to the "Fuse selection" section following each installation type for more information.
- Refer to the "Vehicle wiring reference chart" following each installation type.

**General notes:** This section highlights important information for this specific firmware.

- [1] The installation of an aftermarket hood pin is only required on vehicles that are not equipped with a factory hood pin.
- [2] The siren is only compatible with the Directed Digital remote start and security system.
- [3] The Green wire is only required for starter disable and antigrid connections.

### Additional parts required (maximum required):

 0 x 1A Diodes	 0 x Relay	 0 x Resistor	 0 x Fuse
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# Vehicle application guide

The table below lists the vehicles and features which are compatible with this product. Refer to the following pages for more information on installation wiring, programming and troubleshooting for these vehicles.

Vehicles				PK-Immobilizer Bypass-Data No Key Req'd	AV-Auto Headlamp Shutoff	AV-Panic Mode Activation	DL-Arm Factory Security	DL-Disarm Factory Security	DL-Door Lock Control	DL-Door Unlock	DL-Driver Priority Unlock	DL-Trunk / Hatch Release	FOB Control	RS-RAP Shut Down (Retained ACC Power)	RS-SmartStart 3.0 Compatible	RS-Tach / RPM Output	SS-Entry Monitoring ALL Door Pins	SS-Entry Monitoring Driver Door Pin	SS-Entry Monitoring Hood Pin	SS-Entry Monitoring Trunk/Hatch Pin	SS-Factory Alarm Trigger Monitoring	ST-Brake Status (foot brake)	ST-Door Locks Status	ST-E-Brake Status	ST-Ignition Status
	2015	2014	2013																						
	<b>Hyundai</b>																								
	Elantra GT	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

**Legend:**

- AV: Horn & Light Controls
- DL: OE Door Lock & Alarm Controls
- FOB: Sync CAN Interface w/ FOB Remote
- PK: Transponder & Immobilizer Override
- RS: Remote Start & Engine Controls
- SS: Integrated Security & Monitoring
- ST: Function/Feature Status

# Wiring connections

The wiring connections listed below are specific to this firmware.

## Main harness (H1), 12-pin black connector

Conn./Pin	Color	Description
H1/1	Blue/White	Relay 1 N.C. – EMS COM Data (Connector Side) <sup>1</sup>
H1/2	Blue/Red	Relay 1 N.O. – No Connection <sup>1</sup>
H1/3	Blue	Relay 1 COM – EMS COM Data (Vehicle Side) <sup>1</sup>
H1/4	White/Brown	Relay 3 N.C. – Parking Light Output <sup>1</sup>
H1/5	White	Relay 3 COM – Parking Light Output <sup>1</sup>
H1/6	Red	(+) 12 Volt (Battery)
H1/7	Lt. Green/Red	Relay 2 N.O. – No Connection <sup>1</sup>
H1/8	Lt. Green	Relay 2 COM – No Connection <sup>1</sup>
H1/9	Lt. Green/White	Relay 2 N.C. – No Connection <sup>1</sup>
H1/10	Black	(-) Ground
H1/11	White	Relay 3 COM – Parking Light Output <sup>1</sup>
H1/12	Red	(+) 12 Volt (Battery)

## Relay harness (H2), 10-pin white connector

Conn./Pin	Color	Description
H2/1	N/A	No Connection
H2/2	Red/Black	(+) 12 Volt (Battery) Input
H2/3	Pink/Black	Relay N.C. – Flex <sup>1</sup>
H2/4	Pink/White	Relay COM – (+) Ignition 2/Flex Relay Output <sup>1</sup>
H2/5	Red	(+) 12V Input
H2/6	Green	Relay COM – Starter Input (From Key Switch) <sup>1</sup>
H2/7	Violet	Relay N.C. – (+) Starter Output (To Starter) <sup>1</sup>
H2/8	Orange	Relay COM – (+) Accessory <sup>1</sup>
H2/9	Red/White	(+) Fused (30A) Ignition 2/Flex Relay Input
H2/10	Pink	Relay COM – (+) Ignition Output

## Data harness (H3), 8-pin white connector

Conn./Pin	Color	Description
H3/1	Tan	HS CAN Low
H3/2	Tan/Black	HS CAN High
H3/3	Orange/Brown	FT CAN Low
H3/4	Orange/Green	FT CAN High
H3/5	Lt. Green	No Connection
H3/6	Violet/Brown	No Connection
H3/7	Orange/Black	EMS COM Data (Connector Side)
H3/8	Yellow/Black	EMS COM Data (Connector Side)

1. If these outputs are not used by the firmware, they can be configured by the installer when the module is flashed.

## Analog input/output harness (H4), 22-pin white connector

Conn./Pin	Color	Description
H4/1	Lt. Green/Black	No Connection <sup>1</sup>
H4/2	Blue/White	No Connection <sup>1</sup>
H4/3	Dk. Green/Black	No Connection <sup>1</sup>
H4/4	Red/White	No Connection <sup>1</sup>
H4/5	Brown/Black	No Connection <sup>1</sup>
H4/6	Brown/White	N/A
H4/7	White	No Connection <sup>1</sup>
H4/8	Violet/Black	No Connection <sup>1</sup>
H4/9	Dk. Blue/Black	No Connection <sup>1</sup>
H4/10	Lt. Blue/Black	No Connection <sup>1</sup>
<b>H4/11</b>	<b>Brown/Red</b>	<b>(+) Siren Output <sup>1</sup></b>
H4/12	Pink	(+) Ignition Sense Input
H4/13	Violet	(+) Door Input <sup>2</sup>
H4/14	Brown	(+) Brake Input <sup>2</sup>
H4/15	White/Blue	(-) Activation Input <sup>2</sup>
H4/16	Blue/Red	(-) Valet Switch <sup>2</sup>
H4/17	Black/White	(-) E-Brake Input <sup>2</sup>
H4/18	Orange/Black	(-) Instant Alarm Trigger Input <sup>2</sup>
H4/19	Blue	(-) Trunk Input <sup>2</sup>
H4/20	Green	(-) Door Input <sup>2</sup>
<b>H4/21</b>	<b>Gray</b>	<b>(-) Hood Pin Input <sup>2</sup></b>
H4/22	Violet/White	(AC) Tach Input

## RF Port harness (H5), 2-pin white connector

Conn./Pin	Color	Description
H5/1	N/A	RF Loop
H5/2	N/A	RF Loop

## D2D harness (H6), 4-pin white (1) and black (2) connectors

Conn./Pin	Color	Description
H6/1	Blue	(Data) TX
H6/2	Black	(-) Ground
H6/3	Green	(Data) RX
H6/4	Red	(+) 12 Volt

## Temperature sensor harness (H7), 2-pin black connector

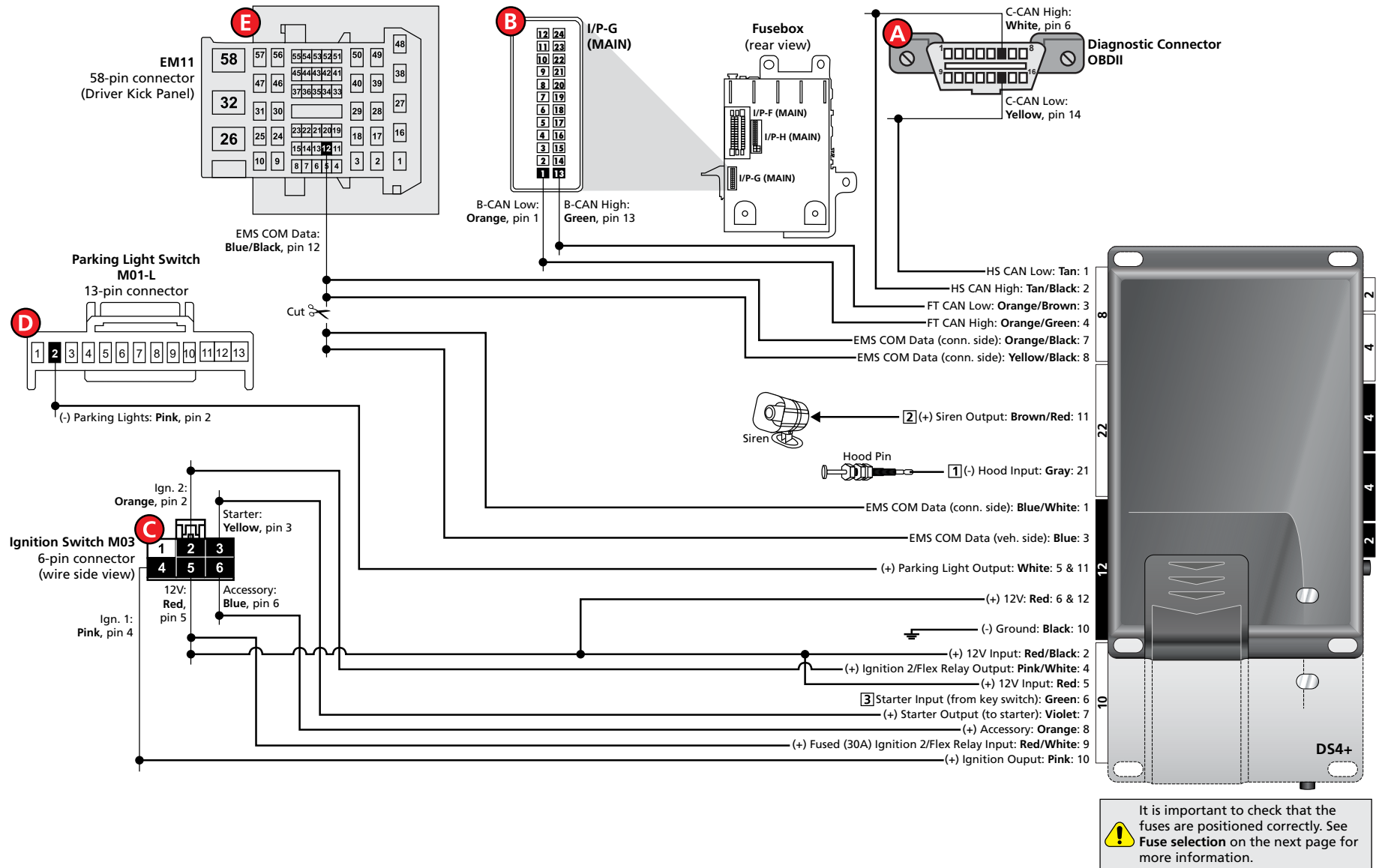
Conn./Pin	Color	Description
H7/1	Black	Temperature Sensor
H7/2	Black	Temperature Sensor

1. If these outputs are not used by the firmware, they can be configured by the installer when the module is flashed. Note that they are low current and a relay may be necessary.
2. These connections are only required if the corresponding statuses are not supported by the firmware. See "Vehicle application guide" on page 5 for a list of compatible features. If these outputs are not used by the firmware, they can be configured by the installer when the module is flashed. Note that they are low current and a relay may be necessary.



# Installation (wiring diagram, fuse selection & vehicle wiring reference chart)

⚠ Refer to "Pre-installation and application warnings" on page 4 and "Vehicle wiring reference chart" on page 9 for important information on this installation.

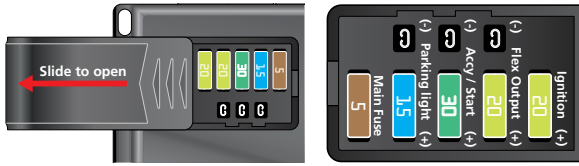


⚠ It is important to check that the fuses are positioned correctly. See **Fuse selection** on the next page for more information.

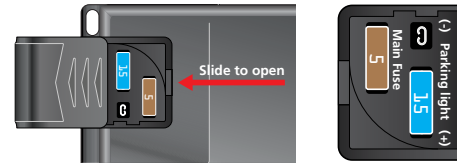
## Fuse selection

To ensure correct functionality of your system, please configure the fuses on your system as follows:

### DS4+



### DS4



## Vehicle wiring reference chart

This section provides vehicle wiring information to guide you through the various stages of your installation. Refer to [www.directechs.com](http://www.directechs.com) for additional information.



Wire Information				Connector Information			
Function	Color	Pin	Polarity	Location	Color	Pins	Ref.
<b>Hyundai Elantra GT 2013-2015</b>							
C-CAN High	White	6	Data	OBDII diagnostic connector.		16	A
C-CAN Low	Yellow	14	Data	OBDII diagnostic connector.		16	A
B-CAN High	Green	13	Data	I/P-G at fusebox.		24	B
B-CAN Low	Orange	1	Data	I/P-G at fusebox.		24	B
Ignition 1	Pink	4	(+)	Ignition switch.		6	C
Ignition 2	Orange	2	(+)	Ignition switch.		6	C
Starter	Yellow	3	(+)	Ignition switch.		6	C
12V	Red	5	(+)	Ignition switch.		6	C
Accessory	Blue	6	(+)	Ignition switch.		6	C
Parking Lights	Pink	2	(-)	Parking light switch M01-L.		13	D
EMS COM Data	Blue/Black	12	Data	EM1 1, at driver kick panel.		58	E

# Connecting the module

## Important!

Before connecting the DS4+, it is important to ensure that the proper feature and function programming is selected using the configuration wizard. Visit [www.directechs.com](http://www.directechs.com) to use the latest version of the online tool.

Flashing a module using your computer:

1. **Disconnect** the main module from any (+) 12V power source, then **connect** it to your computer using the **XKLoader2**.
2. Go to **www.directechs.com** using Internet Explorer; the configuration wizard will be displayed automatically.
3. Follow the instructions in the pop up window that will be displayed when the module is detected.

Flashing a module using your smartphone or tablet:

1. **Disconnect** the main module from any (+) 12V power source, then **connect** it to the **XKLoader3**.
2. Launch the **Directechs Mobile** app on your smartphone or tablet.
3. Select **FLASH YOUR MODULE** and follow the on-screen instructions.

When the flashing operation is successful, you can proceed with the instructions below.

### *Additional connections required for vehicles equipped with a manual transmission (if not supported by firmware)*

Connection	Description
(-) E-Brake Status Input (Black/White, pin 17)	Must be connected to a working emergency brake in the vehicle. Although most vehicles have simple (-) trigger emergency brake circuits note some vehicles do not and may require unique integration methodologies.
(-) Door Trigger Input (Green, pin 20) OR (+) Door Input (Violet, pin 13)	Must be connected to a working door trigger in the vehicle, which monitors all doors. The unit must monitor the door pins to allow the Ready Mode process to be enabled. <b>Note:</b> Some vehicles may require unique integration methodologies for this circuit.
(AC) Tachometer Input (Violet/White, pin 22)	Must be connected to a working tachometer signal in the vehicle (fuel injector, ignition coil, true tach, etc.) and learned successfully to the DS4+.

**Note:** Refer to [www.directechs.com](http://www.directechs.com) for more information.

## Adjusting the 8504D Shock Sensor

The Shock Sensor can be adjusted using the LED or LCD remote.

### *Adjusting the Shock Sensor using a paired LED remote*

1. **Hold** the Function button 8-10 seconds until it emits a long beep and its LED turns ON solid. **Release** the Function button.
2. **Press** the Lock button to enter the Shock Sensor configuration mode and wait for feedback.
3. **Press** the Lock or Unlock button to increase or decrease sensitivity. The 4 side LEDs will blink to show the current level (0 to 15).

**Note:** The Remote Start button can be used to reset the configuration to mid-level sensitivity. If no buttons are pressed for 30 seconds, the remote times out and exits the Shock Sensor configuration mode.

### *Adjusting the Shock Sensor using a paired LCD remote*

1. **Hold** the Function button 8-10 seconds until REMOTE SETUP is displayed.
2. **Press** the Start button to reach SENSOR ADJUST.
3. **Press** the Function button to enter the Shock Sensor configuration mode and wait for feedback. It will display the current sensitivity level from the Shock Sensor.
4. **Press** the Lock or Unlock to increase or decrease sensitivity. The number displayed shows the current level (0 to 15)..
5. **Press** the Function button to set the selected sensitivity level to the Shock Sensor.

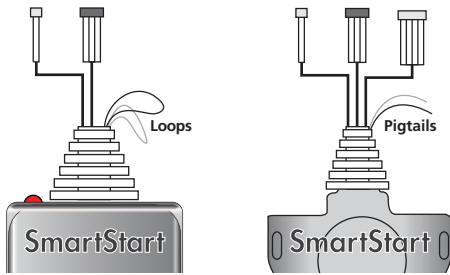
**Note:** If no buttons are pressed for 30 seconds, the remote times out and exits the Shock Sensor configuration mode.

## When used in conjunction with SmartStart

**DO** not disconnect power from the DS4+ before connecting the SmartStart module. Failing to do so could damage main module. To DS4+ HK2  
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enable D2D communication between the DS4+ and the SmartStart one of the following actions must be executed:

- SmartStart with **Loops** – The brown loop must be cut.
- SmartStart with **Pigtails** – The gray wire must be connected to a ground source.



**⚠ DO NOT** connect the SmartStart 2-pin power harness when using the DS4+. Power and ground will be provided by the D2D connector on main module. Refer to the SmartStart documentation for further details.

### D2D 1.0/2.0 port configuration


- The 3 D2D ports should be configured as follows:
- The 2 black D2D ports are internally protected and connected in parallel. Devices connected to both ports need to be configured with the same communication protocol, which in this case is D2D 2.0. This is where the Control Center (antenna) and 8504D Shock Sensor should be connected.
- The single white D2D port should be used for SmartStart and will require to be configured for D2D 1.0 functionality.
- All ports can be configured for D2D 1.0 and 2.0; however, if the device is not configured accordingly as well, it will not be recognized.
- All ports need to be configured via the web, but the above is the recommended installation configuration.

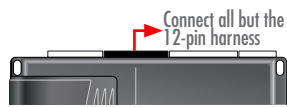
## Module programming

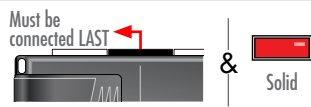
 Refer to "LED diagnostics and troubleshooting" on page 13 for more information and for troubleshooting purposes.

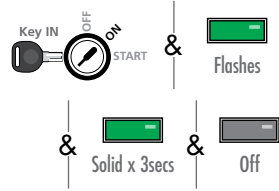
To connect the module:

- 1** Please **ensure** that the vehicle is in a safe location and cannot move forward during programming. For vehicles equipped with a manual transmission, make sure the gearshift lever is in the neutral position.

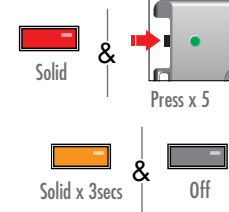

- 2** **Connect** all the harnesses to the DS4+, **EXCEPT** the 12-pin main power harness.

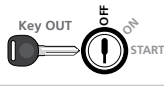

- 3** **Connect** the 12-pin main power harness, and wait until the LED turns ON solid red.



- 4** **Turn** the key to the ON position. The LED will flash green then solid green for 3 seconds, and then turns OFF.



- 5** **If the vehicle does not have a transponder**, the LED will remain solid red. Press the programming button 5 times to skip the transponder programming.

The LED turns ON solid orange for 3 seconds then shuts off when programming is done.


- 6** **Turn** vehicle ignition OFF once the module is successfully programmed.


- 7** **Pair** remotes (if applicable). For information on how to pair a specific remote, please refer to its corresponding owner documentation, which can be found inside the product packaging of the complete system or on [www.directechs.com](http://www.directechs.com).\*


- 8** By default, the tachometer is preprogrammed for the vehicle. For instructions on how to program tach, see page 16.












\* Your aftermarket remote may differ from the model shown in the illustrations.

You have successfully completed the module programming sequence.









## LED diagnostics and troubleshooting

This section provides LED diagnostics and troubleshooting information to guide you through the various stages of your installation.


### Module programming

LED	Description	Troubleshooting
 Off	Module has no power.	Make sure the D2D harness is connected and that 12 Volt is present between the red and black wires. If 12 Volt is present, the module may be defective.
 Solid red	Waiting to begin the programming sequence.	Ensure the correct programming procedure is being followed.
 Flashes red & green	Initialization failed.	Reset the module and complete the programming again. If the issue persists, please contact Technical Support.
 Solid orange	Transponder functions were skipped.	(If compatible) when the RXT mode is not desired or convenience features are needed, please reset and reprogram the module.
 Flashes green	All required CAN networks has been detected.	Normal operation.
 Flashes orange	1 of 2 CAN networks has been detected.	Normal operation.
 Flashes orange slowly	Key2GO initiated.	Please follow the steps indicated in "Module programming" on page 12 to complete the Key2GO programming.
 Solid green x 3 secs	Module was successfully programmed with all functions.	Normal operation.
 Solid orange x 3 secs	Module was successfully programmed without transponder functions.	Normal operation.






### Module programming – Error codes

LED	Description	Troubleshooting
 Flashes red x 1	CAN2 not detected.	Check the CAN2 Orange/Green and Orange/Brown wire connections. Wake up the data bus by turning the ignition on and try again. If your installation does not require this connection, skip this step by pressing the programming button 5 times.
 Flashes red x 1	J1850 not detected.	Check the J1850 wire connection. Wake up the data bus by turning the ignition on and try again.
 Flashes red x 2	CAN1 not detected.	Check the CAN1 Tan and Tan/Black wire connections. Wake up the data bus by turning the ignition on and try again. If your installation does not require this connection, skip this step by pressing the programming button 5 times.
 Flashes red x 3	Bypass data not detected.	Check the bypass line connection. If more than one wire is used, make sure they are not inverted. Ensure the vehicle still operates correctly using the factory key.
 Flashes red x 4	Bypass processing error.	The bypass calculation failed. Reset the module and try again. If the condition persists, please contact Technical Support.
 Flashes red x 5	ISO 1 not detected.	The Yellow/Black wire did not detect the expected signal. Refer to "Installation (wiring diagrams, fuse selection & vehicle wiring reference charts)" on page 8 to check the connections.
 Flashes red x 6	ISO 2 not detected.	The Orange/Black wire did not detect the expected signal. Refer to "Installation (wiring diagrams, fuse selection & vehicle wiring reference charts)" on page 8 to check the connections.
 Flashes red x 7	MUX not detected.	The Violet/Green or Violet/Brown wire did not detect the expected voltage value. Refer to "Installation (wiring diagrams, fuse selection & vehicle wiring reference charts)" on page 8 to check the connections.







### External module synchronization

LED	Description	Troubleshooting
 (Flashes red, red, then orange) x 10	OBDII feature not supported.	The diagnostic data bus was not detected, therefore the SmartStart features will be limited.






## Active Ground When Running (Status)

LED	Description	Troubleshooting
 Flashes green	Ground When Running (Status) command received.	The module has initialized the remote start sequence.
 Flashes red & orange	Ignition ON command received.	The module has received the Ignition ON command and is processing the remote start sequence.
 Flashes green quickly	Start ON command received.	The module has received the Start ON command and is processing the remote start sequence.
 Flashes red x 10	PTS shutdown error.	The PTS output from the module was not activated due to safety protection.
 Flashes red x 21	CAN bus incorrectly detected.	Verify the CAN1 and CAN2 connections. Refer to "Installation (wiring diagrams, fuse selection & vehicle wiring reference charts)" on page 8 to check the connections.


## Commands

LED	Description	Troubleshooting
 Flashes orange x 1	LOCK command received.	If the bypass module fails to flash, it did not receive the signal. Commands can come from RF or D2D.
 Flashes orange x 2	UNLOCK command received.	
 Flashes orange x 3	TRUNK command received.	
 Flashes orange x 4	AUX1 command received.	
 Flashes orange x 5	AUX2 command received.	
 Flashes orange x 6	AUX3 command received.	

## Shutdown codes

LED	Description	Troubleshooting
 Flashes green x 1	Takeover successful.	Normal operation.
 Flashes red x 1	Runsafe was not disabled.	No UNLOCK command was received prior to opening the door, or the 45 second timer expired in takeover mode.
 Flashes red x 2	Brake was not detected.	The brakes were not detected, which prevents the system from shutting down the vehicle.
 Flashes red x 3	Smart key was not detected.	The smart key was not detected, which prevents the system from shutting down the vehicle.
 Flashes red x 4	Speed was detected.	The vehicle was detected as moving, which prevents the system from shutting it down.

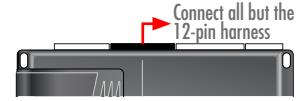
## Analog error codes

LED	Description	Troubleshooting
 Flashes red, green & orange	DEI feature error.	A feature config file mismatch was detected. Please contact Technical Support.

## Soft reset

A module reset will only erase the steps performed in "Module programming" on page 12. The firmware and settings flashed to the module will not be affected.

- 1 If required for your installation, **connect** all the harnesses to the DS4+, **EXCEPT** the 12-pin main power harness. **Press** and **hold** the programming button, then **connect** the 12-pin harness to the module.



- 2 **Wait** 3 seconds until the LED turns ON solid orange then **release** the programming button. The LED turns ON solid red.

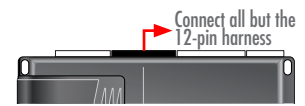


## Hard reset

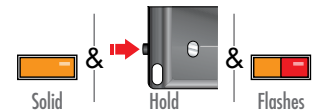
### Warning Against Executing a Hard Reset!

A hard reset will revert the flashed firmware back to its default settings. Depending on the installation, some settings may need to be reconfigured. Connect your module to a computer and use the web configuration tool to edit its programmable features.

- 1 If required for your installation, **connect** all the harnesses to the DS4+, **EXCEPT** the 12-pin main power harness. **Press** and **hold** the programming button, then **connect** the 12-pin harness to the module.



- 2 After 3 seconds the LED turns ON solid orange. **Keep holding** the programming button until the LED flashes red, then orange slowly.



- 3 **Release** the programming button. The LED turns ON solid red.





## Learning the Tach (not needed with Virtual Tach)

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Tach comes preprogrammed, therefore learning is not required; however, it can be readjusted with the following operations:

1. Start the vehicle using the key.
2. Within 5 seconds, press and hold the Control Center\* (antenna) or the main module programming button, until the LED on the Control Center (antenna) or the main module turns ON solid.
3. Release the button. Tachometer value is now stored in memory.

If the LED does not turn ON solid, find an alternate tach source.

\* If the Control Center (antenna) was not included in your kit, the tach can be programmed using the programming button directly on the main module.

**Note:** When the tachometer is programmed, the main module automatically enters the Tachometer engine checking mode.

## Initializing Virtual Tach (not needed with hardwired or data tach applications)

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To program Virtual Tach:

1. After the install is complete, remote start the engine. The programming operation may require 3 cranks of the starter before the engine starts and runs. Do not turn off the remote start if this happens, it is a normal programming operation.
2. Once the engine begins running, let it run for at least 30 seconds.
3. Using the Remote, send the Remote start command to turn remote start off. Virtual Tach is programmed. To reset Virtual Tach, a module reset must be done.

**Note:** Virtual Tach cannot be used in Manual Transmission Mode. It is also not recommended for diesel trucks.

Virtual Tach handles disengaging the starter motor during remote starting – it does not address over-rev. If the customer wants to have the over-rev protection capability, the tach wire or data tach must be used.

**Important!** After successfully learning Virtual Tach, a small minority of vehicle starters may over crank or under crank during remote start. Use the VirtualTach Fine tune feature in the configuration wizard to adjust the starter output time in 50mS increments to compensate for such an occurrence.

## Limited lifetime consumer warranty

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Directed Electronics. ("Directed") promises to the original purchaser to repair or replace (at Directed's election) with a comparable reconditioned model any Directed unit (hereafter the "unit"), excluding without limitation the siren, the remote transmitters, the associated sensors and accessories, which proves to be defective in workmanship or material under reasonable use during the lifetime of the vehicle provided the following conditions are met: the unit was purchased from an authorized Directed dealer, the unit was professionally installed and serviced by an authorized Directed dealer; the unit will be professionally reinstalled in the vehicle in which it was originally installed by an authorized Directed dealer; and the unit is returned to Directed, shipping prepaid with a legible copy of the bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number and address; the authorized dealers name, telephone number and address; complete product description, including accessories; the year, make and model of the vehicle; vehicle license number and vehicle identification number. All components other than the unit, including without limitation the siren, the remote transmitters and the associated sensors and accessories, carry a one-year warranty from the date of purchase of the same. ALL PRODUCTS RECEIVED BY DIRECTED FOR WARRANTY REPAIR WITHOUT PROOF OF PURCHASE FROM AN AUTHORIZED DEALER WILL BE DENIED. This warranty is non-transferable and is automatically void if: the unit's date code or serial number is defaced, missing or altered; the unit has been modified or used in a manner contrary to its intended purpose; the unit has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defects in materials or construction. The warranty does not cover damage to the unit caused by installation or removal of the unit. Directed, in its sole discretion, will determine what constitutes excessive damage and may refuse the return of any unit with excessive damage.

TO THE MAXIMUM EXTENT ALLOWED BY LAW, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. DIRECTED DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING ITS AUTHORIZED DEALERS OR INSTALLERS. DIRECTED SECURITY SYSTEMS, INCLUDING THIS UNIT, ARE DETERRENTS AGAINST POSSIBLE THEFT. DIRECTED IS NOT OFFERING A GUARANTEE OR INSURANCE AGAINST VANDALISM, DAMAGE OR THEFT OF THE AUTOMOBILE, ITS PARTS OR CONTENTS; AND HEREBY EXPRESSLY DISCLAIMS ANY LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, LIABILITY FOR THEFT, DAMAGE AND/OR VANDALISM. THIS WARRANTY DOES NOT COVER LABOR COSTS FOR MAINTENANCE, REMOVAL OR REINSTALLATION OF THE UNIT OR ANY CONSEQUENTIAL DAMAGES OF ANY KIND. IN THE EVENT OF A CLAIM OR A DISPUTE INVOLVING DIRECTED OR ITS SUBSIDIARY, THE VENUE SHALL BE SAN DIEGO COUNTY IN THE STATE OF CALIFORNIA. CALIFORNIA STATE LAWS AND APPLICABLE FEDERAL LAWS SHALL APPLY AND GOVERN THE DISPUTE. THE MAXIMUM RECOVERY UNDER ANY CLAIM AGAINST DIRECTED SHALL BE STRICTLY LIMITED TO THE AUTHORIZED DIRECTED DEALER'S PURCHASE PRICE OF THE UNIT. DIRECTED SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, DAMAGE TO VEHICLE, DAMAGES FOR THE LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, THE MANUFACTURER DOES OFFER A LIMITED WARRANTY TO REPLACE OR REPAIR THE CONTROL MODULE SUBJECT TO THE CONDITIONS AS DESCRIBED HEREIN. THIS WARRANTY IS VOID IF THE UNIT HAS NOT BEEN PURCHASED FROM DIRECTED, OR AN AUTHORIZED DIRECTED DEALER, OR IF THE UNIT HAS BEEN DAMAGED BY ACCIDENT, UNREASONABLE USE, NEGLIGENCE, ACTS OF GOD, NEGLIGENCE, IMPROPER SERVICE, OR OTHER CAUSES NOT ARISING OUT OF DEFECT IN MATERIALS OR CONSTRUCTION.

Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights and you may also have other rights that vary from State to State.

This warranty is only valid for sale of product(s) within the United States of America and in Canada. Product(s) sold outside of the United States of America or Canada are sold "AS-IS" and shall have NO WARRANTY, express or implied.

For further details relating to warranty information of Directed products, please visit the support section of Directed's website at: [www.directed.com](http://www.directed.com).

This product may be covered by a Guaranteed Protection Plan ("GPP"). See your authorized Directed dealer for details of the plan or call Directed Customer Service at 1-800-876-0800.

(920-10011-01 2011-06)

# Quick Reference Guide



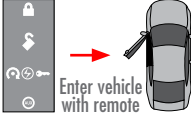


## Sending commands to your vehicle

Whether you want to remote start the engine, lock/unlock the doors or pop the trunk, there are 3 possible ways you can send commands to your vehicle, using the:

- Factory remote.
- Aftermarket remote.
- Directed SmartStart application via your smartphone.

If applicable, you can also start the engine remotely by pressing the Lock button 3 times quickly on your factory remote.


## Vehicle takeover with regular key




- 1** **Close** the vehicle doors, hood and trunk, then **send** the Remote Start command to start the vehicle.\* 
- 2** **Send** the Unlock command on the factory or aftermarket remote.\* 
- 3** **Enter** the vehicle, while making sure the factory remote is inside with you. 
- 4** **Insert** your key in the ignition barrel and **turn** it to the ON position. 
- 5** **Depress** the brake pedal, **put** the car in gear and **drive** off. 

\* Icon and remote appearance may differ depending on the model purchased.

## List of available commands

Note that the information below is for many Viper, Clifford, Python, Autostart and AstroStart models. Icons and commands may differ depending on the model and options purchased. Refer to your authorized installation center for more specific information.

Button(s)	Actions
	<b>Press &amp; hold</b> for 1 second to lock.

	<b>Press &amp; hold</b> for 1 second to unlock.
	<b>Press &amp; hold</b> for 1 second to remote start.
	<b>Press &amp; hold</b> for 5 seconds to activate the trunk release (optional).

\* Icon and remote appearance may differ depending on the model purchased.

## SmartStart compatible

This system is compatible with Directed SmartStart. For a complete list of supported features, please visit [www.mysmartstart.com](http://www.mysmartstart.com).

### What is SmartStart?

Now you can remote start, lock and unlock your car just by pushing a button on your smartphone; using the SmartStart App from Directed, the leader in vehicle security and remote start. The simple graphical interface gives you control over the following features of your installed remote start or security with remote start system:

- Lock/Arm
- Unlock/Disarm
- Remote Car Starter
- Trunk Release
- Panic
- Aux Channels

You can also control multiple vehicles – great for families – and assign more than one user to control a vehicle. It's easy with SmartStart! But, this is only the beginning! SmartStart is loaded with additional features including GPS tracking, SmartSchedule, vehicle status, roadside assistance, parked car finder and more.

The application enables a "Cloud-Connected Car" like never before, providing 2-way interaction with your vehicle. Connectivity is managed through the Directed Cloud Services (DCS) network linking car, app, end user, and the Internet.

For more information, visit [www.mysmartstart.com](http://www.mysmartstart.com).

**Notes**

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