

# Quick Reference Install Guide

Remote Start with Keyless Entry 4X05 series  
4115 1-button and 4105 4-button systems

## Wiring Connections

### Primary Harness, White 9-pin connector

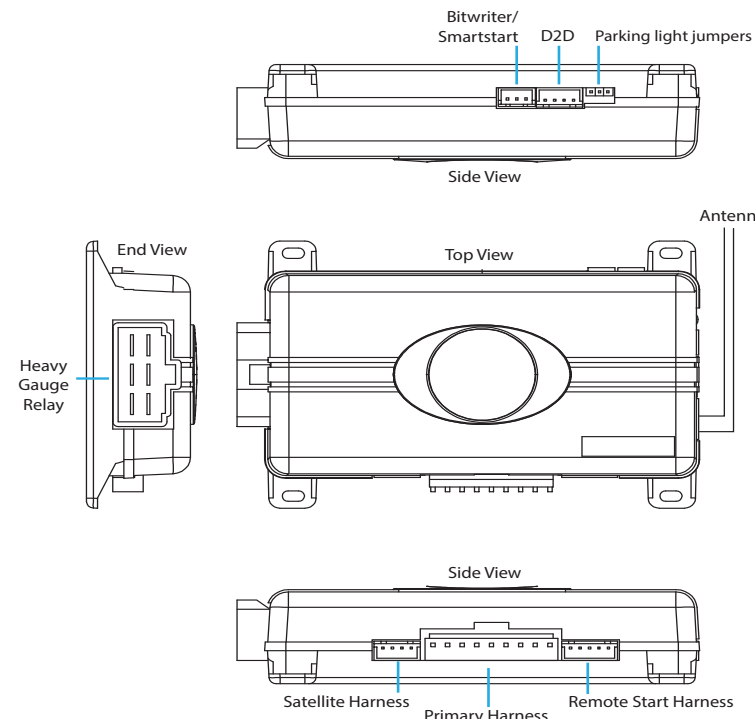
1	LIGHT GREEN BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT
2	GREEN/WHITE	(-) 200mA FACTORY ALARM REARM OUTPUT
3	YELLOW	(+) IGNITION OUT (TO ALARM)
4	WHITE/BLUE	(-) ACTIVATION INPUT
5	ORANGE	(-) 500mA GROUND WHEN LOCKED/ANTI-GRIND OUTPUT
6	BROWN	(-) 200mA HORN OUTPUT
7	RED/WHITE	(-) 200mA TRUNK RELEASE OUTPUT*
8	BLACK	(-) CHASSIS GROUND
9	WHITE	(+/-) LIGHT FLASH OUTPUT

\*Option not applicable to 1-button remote control

### Remote Start harness, White 5-pin connector

1	BLACK/WHITE	(-) PARKING BRAKE INPUT*
2	VIOLET/WHITE	TACHOMETER INPUT
3	BROWN	(+) BRAKE SHUTDOWN INPUT
4	GRAY	(-) HOOD PIN SWITCH SHUTDOWN INPUT
5	BLUE/WHITE	(-) 200 mA 2ND STATUS/REAR DEFROGGER OUTPUT

\* Connect this wire to the (-) Parking Brake wire in the vehicle. The parking brake must be applied for the remote start to work.



**Notice to Installer**

A Remote Start Safety Check must be performed before returning the vehicle to the owner. This Safety Checklist document (TB101) can be found online by going to [www.directechs.com](http://www.directechs.com) and can also be found in the full online installation guide (N4X05).

The Valet Button **must** be installed as it is required for disabling the Remote Start System/Garage Mode.

### Heavy Gauge Relay, White 6-pin connector

1	RED	(+) (30A) HIGH CURRENT 12V INPUT
2	PINK/WHITE	(+) SECOND IGNITION/ACCESSORY CIRCUIT OUTPUT
3	RED	(+) (30A) HIGH CURRENT 12V INPUT
4	ORANGE	(+) ACCESSORY OUTPUT
5	PURPLE	(+) STARTER OUTPUT
6	PINK	(+) IGNITION 1 INPUT/OUTPUT

### Satellite harness - White 4-pin connector

1	BLUE	(-) 200mA STATUS OUTPUT
2	ORANGE	(-) 200mA ACCESSORY OUTPUT
3	PURPLE	(-) 200mA STARTER OUTPUT
4	PINK	(-) 200mA IGNITION OUTPUT

### Door Lock, White 3-pin connector

1	LIGHT BLUE	(-) 200mA UNLOCK OUTPUT
2	EMPTY	NOT USED
3	GREEN	(-) 200mA LOCK OUTPUT

**Important:** NEVER connect 200mA low current outputs directly to a motor or high current device WITHOUT a relay.

### D2D Harness, Red 4-pin connector

1	BLUE	D2D - TX
2	BLACK	(-) GROUND
3	GREEN	D2D - RX
4	RED	(+) 12V

### Bitwriter/Directed SmartStart Harness, Black 3-pin connector

1	RED	(+) 12V
2	ORANGE	ESP2 - RX/TX
3	BLACK	(-) GROUND

## Installation Points

### Learning Hardwired or Data Tach (not needed with Virtual Tach)

To learn the tach signal:

1. Start the vehicle with the key.
2. Within five seconds, **press** and **hold** the Valet button.
3. After three seconds the LED will light constant when the tach signal is learned.
4. **Release** the Valet button and **turn OFF** the vehicle.

**Important:** This unit can learn the tachometer with the analog input or through D2D using an interface module. The unit confirms which source is used by flashing the parking lights.

When programming tach learning with:

- The analog Violet/White Tachometer input, the parking lights flash **one** time.
- A D2D interface module, the parking lights flash **twice**.

If the analog tachometer input on the system is connected to the vehicle, the D2D tachometer input will be ignored.

### Initializing Virtual Tach (not needed w/hardwire and data tach inputs)

**Note:** Virtual Tach is not recommended for diesel vehicles.

To program Virtual Tach:

1. After the install is complete, remote start the car.
2. If the car does not start on the first attempt, let the remote start attempt again (three cranks may be required to start and run the engine).
3. Once the car starts, let the engine run for 30 seconds.
4. Use the remote control to shut OFF the remote start- that's it! Virtual Tach is programmed.

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 must be connected.

**Important:** If the Virtual Tach mode over or under cranks, use the Bitwriter to add or subtract the starter output time. You can adjust the output time in increments of 50 milliseconds.

## Reset and Deletion

If a feature/Virtual Tach needs to be reset or the remote controls need to be deleted, use the following procedure.

1. **Turn** the vehicle ignition to the ON position.
2. Within five seconds **press** and release the Valet button: two times to delete remote controls, three times to reset the features to default or four times to reset Virtual Tach.
3. Once you have selected the function step, **press** the Valet button once more and **hold** it. The LED will flash and the horn (if connected) will honk to confirm the functional step chosen. **Do not** release the Valet button.
4. **Press** the button of a programmed remote control. The horn (if connected) will honk confirming the feature has been reset/deleted.
5. Release the Valet button and **turn OFF** the the ignition. The horn (if connected) honks to confirm exiting.

NOTE: Deleting a remote control does not reset the features or virtual tach, resetting the features does not delete remote controls or reset virtual tach. The "Zap" feature on the Bitwriter will not reset the virtual tach setting.

Reset/Delete will exit if:

- The ignition is turned OFF.
- There is no activity for 30 seconds.
- The Valet button is pressed too many times.

## Remote Start Shutdown/Startup Diagnostics

If the remote start activates but fails to stay running, the remote start module has the ability to inform you of what may have caused the remote start failure. Before performing the shutdown diagnostics it is important that you let the remote start shut off on its own i.e., let it attempt to start three times then shut down, if this is not done and you press on the brake or use the remote, the unit will report the shutdown last used to shut off the remote start.

To perform shutdown diagnostics:

1. With the ignition OFF, **press** and **hold** the Valet button.
2. **Turn** the ignition ON and then back OFF while **holding** the Valet button.
3. **Release** the Valet button.
4. **Press** and release the Valet button. The LED flashes to report the last shutdown for one minute or until the ignition is turned on, as shown in the following table:

Status LED Flashes	Shutdown Mode
1 flash	Runtime expired
2 flashes	Over-rev shutdown
3 flashes	Low or no RPM
4 flashes	Transmitter shutdown (or optional push button)
5 flashes	(+) Brake shutdown
6 flashes	Hood shutdown
8 flashes	(-) Parking brake (Remote Start harness BLACK/WHITE wire)
9 flashes	Low battery (voltage mode)

**Startup Diagnostics:** If the vehicle fails to activate the remote start, the remote start module will notify you via parking light flashes on the vehicle to identify the no-start situation.

**Parking Light Flashes**

5 flashes	Brake wire is active
6 flashes	Hood pin wire is active
8 flashes	(-) Parking brake (Remote Start harness BLACK/WHITE wire)
9 flashes	Remote Start is disabled by Garage Mode. (see "Disabling the Remote Start System" section for more detail).

### Disabling the Remote Start System/Garage Mode

Garage Mode is a safety feature that disables the remote start system if the vehicle is parked in a garage, being serviced, or used by someone unfamiliar with remote start systems.

When Garage Mode is ON, any attempt to start the engine, activate Timer Mode, or enter Pit Stop mode is denied and remote start diagnostics flashes the parking lights nine times.

**Turn Garage Mode on or off:**




1. **Turn** the ignition on then off.
2. Within 10 seconds, **press** and release the Valet button once.
3. The LED turns on.
4. The parking lights flash:
  - Nine times quickly when turning on.
  - Nine times slowly when turning off.

More detailed information about this system can be found online at: [www.directechs.com](http://www.directechs.com)

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## Programming System Features

The System Features Learn Routine™ dictates how the unit operates. It is possible to access and change most of the feature settings using the Valet button.

1. Turn the ignition ON, then OFF.
2. Within five seconds, **press** and **hold** the Valet button. The number of LED flashes and horn honks (if connected) indicates the menu number. A single LED flash and honk (if connected) indicates Menu 1. Two LED flashes and 2 honks (if connected) indicates Menu 2.
3. When the desired Menu LED flashes and honks (if connected) are heard, **release** the Valet button.
4. Within five seconds, **press** and release the Valet button the number of times corresponding to the feature you want to change. Then **press** and **hold** one more time to select the feature. The LED flashes and the horn (if connected) honks to indicate which feature is selected.
5. While **holding** the Valet button, you can program the feature using the remote control.
  - Using a 4-button remote control: For features with only two options, **pressing**  = option 1, while **pressing**  = option 2. For features with more than two options;  selects the options in ascending order. The LED flashes and the horn (if connected) honks indicating which option is selected.
  - Using a 1-button remote control: **Pressing** the button on the remote control advances to each feature option. The LED flashes and the horn (if connected) honks indicating which option is selected.
6. **Release** the Valet button to exit the Learn Routine.

### Once a feature is programmed:

- Other features can be programmed within the same menu.
- Another menu can be selected.
- The Learn Routine can be exited if programming is complete.

### To access another feature in the same menu:

1. **Press** and release the Valet button the number of times necessary to advance from the feature you just programmed to the next one you want to program.
2. Then **press** the Valet button once more and **hold** it.

### To select another menu:

1. **Press** and **hold** the Valet button.
2. After three seconds, the unit advances to the next menu, the horn honks and LED flashes indicating which menu has been accessed.

### The Learn Routine exits if any of the following occurs:


- The ignition is turned ON.
- There is no activity for 30 seconds.
- The Valet button is pressed too many times.

When exiting Feature Programming, the horn (if connected) sounds one long honk to confirm.

## Bitwriter® - Only Options



If programming with the Bitwriter®, the Learn Routine™ can be locked or unlocked. If the Learn Routine has previously been locked, it must be unlocked with Bitwriter - this cannot be done manually with the Valet button.

The Bitwriter  gives you access to a wider range of system options. These additional features and the adjustments that may be programmed are described in the table below.

Menu Item	Feature	Default	Options
1	Engine Runtime (minutes)	12 min.	1-60 min.
2	Diesel Start Type	Off	Timed
3	Diesel Start Delay Time (seconds)	15 sec	1-90 sec.
4	Virtual Tach Fine Tune	Not initialized	0 to 1 second in 50 millisecond increments
5	Remote Control Programming	Unlocked	Locked
6	Feature Programming	Unlocked	Locked

## Feature Menus

Default settings are in **bold** type.

### Menu 1

Feature #	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Horn Function (milliseconds)	<b>Off</b>	Siren 20 ms.	Siren 30 ms.	Siren 40 ms.	Siren 50 ms.
2	Ignition Controlled Lock	On	<b>Off</b>			
3	Ignition Controlled Unlock	On	<b>Off</b>			
4	Doorlock Output Duration (seconds)	<b>0.8 sec.</b>	3.5 sec.	0.4 sec.		
5	Double Pulse Unlock	<b>Off</b>	On			
6	Double Pulse Lock	<b>Off</b>	On			
7	Factory Alarm Disarm Function	<b>With Unlock</b>	Before Unlock	Remote Start only		
8	Factory Alarm Disarm Pulses	<b>Single</b>	Double			
9	Comfort Closure*	Comfort Closure 1	<b>Off</b>	Comfort Closure 2		
10	Panic*	<b>On</b>	Off			


\* Option not applicable to the 1- button remote control.

### Menu 2

Feature #	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Engine Checking	<b>Virtual Tach</b>	Voltage	Off	Tachometer	
2	Engine Runtime	<b>12 min.</b>	24 min.	60 min.		
3	Park Light Output	Pulsed	<b>Constant</b>			
4	Cranking Time (seconds)	<b>0.6 sec.</b>	0.8 sec.	1.0 sec.	1.2 sec.	1.4, 1.6, 1.8, 2.0, 4.0 sec.
5	Activation Pulse Count	<b>1 pulse</b>	2 pulses	3 pulses		
6	2nd Ignition Behavior	<b>Ignition</b>	Accessory			
7	Accessory Output	<b>Off during Wait-to-Start</b>	On during Wait-to-Start			
8	2nd Status Behavior	<b>Normal</b>	Latch rear defogger	Pulse rear defogger		
9	Anti-grind	<b>On</b>	Off			
10	Diesel Start Delay (seconds)	<b>Off</b>	Timed 15 sec.	Timed 30 sec.	Timed 45 sec.	
11	Timer Mode Runtime* (minutes)	<b>12 min.</b>	3 min.	6 min.	9 min.	

\* Option not applicable to the 1- button remote control.

## Pairing a Remote Control




1. Turn key to the ON position.
2. Within five seconds, **press** and release Valet button one time.
3. Within five seconds, **press** and **hold** the Valet button. The LED will flash one time and the horn (if connected) honks to confirm entry into remote programming.
4. **Press** the  button if using a 4-button remote control (or the single button if using the 1-button remote control). The horn (if connected) honks to confirm the remote has been programmed.
5. **Release** the Valet button, and **turn** the key to the OFF position. The horn (if connected) sounds one long honk to confirm that remote programming has been exited.

### The programming routine exits if any of the following occurs:

- The ignition is turned OFF.
- There is no activity for 30 seconds.
- The Valet button is pressed too many times.

## Basic Remote Functions

### 4-button Remote Control

ICON	BASIC COMMANDS	DESCRIPTION
	LOCK	Pressing for one second locks the system (if the door locks are connected)
	UNLOCK	Pressing for one second unlocks the doors (if connected)
	REMOTE START	Press to remotely start and run the vehicle for a programmable period of time or press to turn off if vehicle is already remote started
AUX	SILENT MODE/AUXILIARY FUNCTION	Silent Mode works by pressing this button for less than one second before locking or unlocking. This button can also be used for an optional auxiliary function such as trunk release

Note: See Owner's guide for more details.

### 1-button Remote Control

System State	Press/Release	Press/Hold for 3 sec.
ENGINE OFF	START ENGINE	CAR FINDER
ENGINE ON	UNLOCK DOORS	STOP ENGINE

Note: See Owner's guide for more details.

## Guide Translations

For a Spanish or French version of the Installation Guide, please download it from [www.directechs.com](http://www.directechs.com) under "Resources".

Traducción de los manuales:  
Para obtener una versión en Español o Francés del Manual de Instalación, descárguela de [www.directechs.com](http://www.directechs.com) bajo el título "Recursos" ("Resources").

Traduction du guide:  
Pour une version française ou espagnole du guide d'installation, veuillez le télécharger à [www.directechs.com](http://www.directechs.com) sous «Resources».

Bitwriters with a date code of 6A or older require an IC upgrade (p/n 998M). Some bitwriters with a date code of 6B do not require the IC upgrade, refer to **Tech Tip # 1112** for more information.



The Bitwriter® (p/n 998U) requires chip version 2.9 or newer to program this unit.