Quick Reference Install Guide

Remote Start with Keyless Entry
4115V

Wiring Connections

Primary Harness, 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	GROUND INPUT
9	WHITE	(+/-) LIGHT FLASH OUTPUT

* With the 1 button remote, the ground when locked feature is not available, however this wire will still function as an anti-grind output during the remote start sequence.

** Option not available on 1- button

Door Lock, 3-pin connector

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

Remote Start harness, 5-pin connector

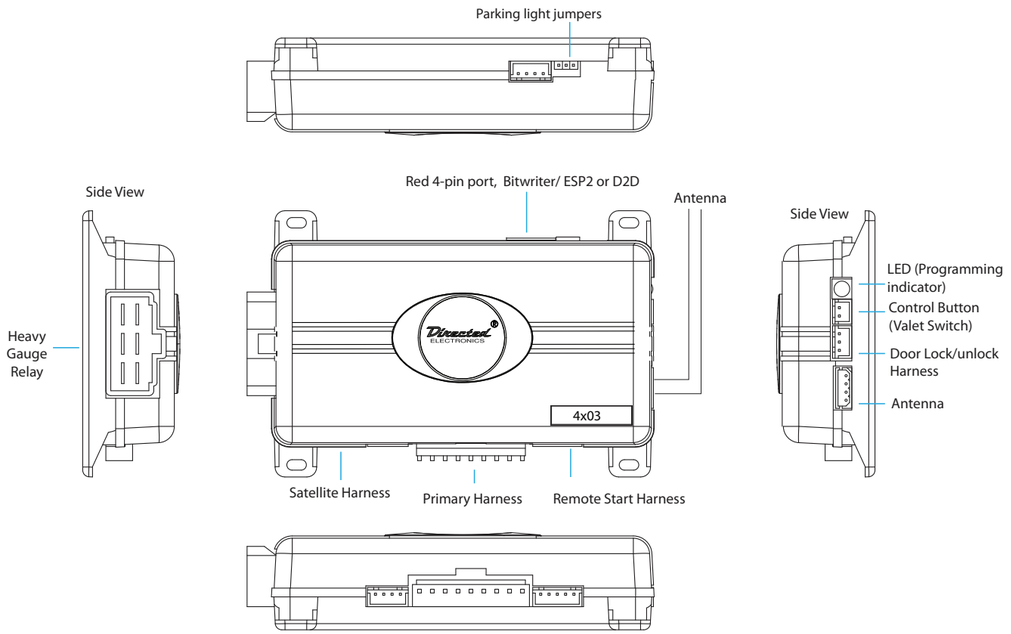
1	BLACK/WHITE	(-) NEUTRAL SAFETY SWITCH INPUT
2	VIOLET/WHITE	TACHOMETER INPUT
3	BROWN	(+) BRAKE SHUTDOWN INPUT
4	GRAY	(-) HOOD PIN SWITCH SHUTDOWN INPUT
5	BLUE/WHITE	(-) 200 mA 2ND STATUS/REAR DEFOGGER OUTPUT

Heavy Gauge Relay, 6-pin connector

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

Satellite harness - 4-pin connector

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



Installation Points

Tach Learning

To learn the tach signal:
1. Start the vehicle with the key.
2. Within 5 seconds, press and hold the Valet (Control) button.
3. After 3 seconds the system LED will light constant when the tach signal is learned.
4. Release the Valet (Control) button.

> **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:
- **Analog**, the parking lights flash **one** time
- **D2D interface module**, the parking lights flash **twice**

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

Virtual Tach

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.
3. Once the car starts, let it run until the parking lights come on.
4. When the parking lights come on, shut off the remote start with the remote - 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. This may involve more installation shop charges than initially quoted.

> **Important:** If the Virtual Tach mode over cranks or doesn't crank the vehicle long enough to start and run the car, use the Bitwriter to add or subtract the starter output time. You can adjust the output time in increments of 50msec of the learned time using the Bitwriter.

Red 4-pin port, Bitwriter/ESP2 or D2D programming

The Red 4-pin plug may be configured as a Bitwriter/ESP2 or D2D port.
The factory default is Bitwriter/ESP2 mode.

To use as D2D mode follow the below steps:
1. Make sure White/Blue activation wire is grounded.
2. Power the unit up. The system LED flashes for 5 seconds to confirm D2D mode change.
3. Remove the White/Blue wire from ground.

To change from D2D to Bitwriter/ESP2 mode:
1. Make sure White/Blue activation wire is grounded.
2. Power the unit up, the system LED turns on solid for 5 seconds to confirm Bitwriter/ESP2 mode change.
3. Remove the White/Blue wire from ground.

The procedure can be repeated to toggle from one mode to the other.

> **Important:** If you power up the system with the White/Blue activation wire ungrounded, the system LED will come on solid for 5 seconds indicating the system is in Bitwriter/ESP2 mode.

Remote Start Shutdown Diagnostics

The remote start module can inform you of what may have caused a remote start failure, if the remote start activates but fails to stay running. Before performing shutdown diagnostics it is important that you let the remote start shut off on its own i.e. let it attempt to start 3 times then shut down. Failure to do so causes the system to report the shutdown you used to shut off the remote start.

Note: Shutdown diagnostics does not report if the vehicles factory immobilizer is causing the problem

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:

LED Flashes	Shutdown Mode
1 flash	Timed out
2 flashes	Over-rev shutdown
3 flashes	Low or no RPM, low battery (voltage and virtual tach modes)
4 flashes	Transmitter shutdown (or optional push button)
5 flashes	(-) Hood Shutdown (5 pin RS harness GRAY)
6 flashes	(+) Shutdown (5 pin RS harness BROWN)
7 flashes	(-) Neutral safety shutdown (5 pin RS harness BLACK/WHITE)
8 flashes	Wait-to-start timed out

Guide Translations

For a Spanish or French version of the Installation Guide, please download it from 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 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 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.

D2D DATA TO DATA™

The Bitwriter® (p/n 998U) requires chip version **2.7** or newer to program this unit.

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. **Select** a Menu. Within 10 seconds, **Press** and **hold** the Valet button. The number of LED flashes and horn honks indicates the menu number. A single LED flash and honk indicates menu 1. Two LED flashes and 2 honks indicates menu 2.
3. When the desired menu LED flashes and honks are heard, **release** the Valet button.
4. **Select** a Feature, within 10 seconds. **Press** and **release** the Valet button the number of times corresponding to the feature you wish to change. Then **press** and **hold** one more time to select the feature. The LED flashes and the horn honks to indicate which feature is selected.
5. **Program** the Feature. While holding the Valet button, you can program the feature using the remote control.

Pressing the button on the remote control advances to each feature option. The LED flashes and the horn honks indicating which option is selected.

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 3 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

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	**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	**Off**	Siren 20 mS	Siren 30 mS	Siren 40 mS	Siren 50 mS
2	Ignition controlled lock	On	**Off**			
3	Ignition controlled unlock	On	**Off**			
4	Doorlock output duration	**0.8 sec.**	3.5 sec.	0.4 sec.		
5	Double pulse unlock	**Off**	On			
6	Double pulse lock	**Off**	On			
7	Factory Alarm Disarm function	**with unlock**	Before unlock	Remote start only		
8	Factory Alarm Disarm Pulses	**Single**	Double			
9	Comfort* Closure	Comfort Closure 1	**Off**	Comfort Closure 2		
10	Panic*	**On**	Off			

*Option not available on 1- button

Menu 2

Feature #	Feature	Opt. 1	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Engine checking	**Virtual tach**	voltage	Off	tachometer	
2	Engine Runtime	**12 min**	24 min	60 min		
3	Park light output	Pulsed	**Constant**			
4	Cranking time	**0.6 sec.**	0.8 sec.	1.0 sec.	1.2 sec.	1.4, 1.6, 1.8, 2.0, 4.0 sec
5	Activation pulse count	**1 pulse**	2 pulses	3 pulses		
6	2nd Ignition behavior	**Ignition**	Accessory			
7	Accessory output	**Off during wait-to-start**	On during wait-to-start			
8	2nd Status behavior	**Normal**	Latch rear defogger	Pulse rear defogger		
9	Anti-grind	**On**	Off			
10	Diesel start delay	**Off**	Timed 15 sec	Timed 30 sec.	Timed 45 sec.	
11	Timer mode-run time *	**12 min**	3 min	6 min	9 min	

*Option not available on 1- button

Remote Programming

1. Turn key to the ON position
2. Within 10 seconds, press and release Valet button one time.
3. Within 10 seconds, press and hold the Valet button. The LED will flash one time and the horn honks (if connected) to confirm entry into remote programming. Do not release the valet button.
4. Press the button on the remote control. The horn honks to confirm the remote has been programmed.
5. Release the Valet button.
6. Turn the key to the Off position. The horn 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

Button Press	Function when remote start is OFF	Function when remote start is ON
Press for less than 1.5 seconds	Start the engine	Unlock doors
Press for more than 1.5 seconds	Car finder	Stop the engine

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 ignition to the ON position (The heavy gauge pink wire must be connected).
2. Within 10 seconds, press and release the Valet button: 2 times if you want to delete remotes, 3 times to reset features or 4 times to reset virtual tach. These features are described next.

   Delete remotes: This feature erases all remotes from the memory of the system. This is useful in cases when a customer's remote is lost or stolen.
   Note: This does not reset the programmed features of the system or reset the Virtual Tach setting.

   Reset Features: This resets all features of the system to the factory default settings.
   Note: This feature does not delete the remotes from the system or reset the Virtual Tach setting

   Virtual Tach Reset: Deletes all previously learned values for Virtual Tach, and on the next remote start sequence the unit begins virtual tach initialization.

   Note: The "Zap" feature on the Bitwriter does not reset the Virtual tach setting.
3. Once you have selected the function step, press the Valet button once more and hold it. The LED flashes and the horn honks to confirm the selected functional step. Do not release the Valet button.
4. While holding the Valet button, press the button on the remote control. The horn honks to confirm that the feature has been successfully reset. You can now release the Valet button.

Additional information can be found at: **www.directechs.com**

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