

# Quick Reference Install Guide

Remote Start w/ Keyless Entry for:  
Responder LCD, LED & 1-way systems

## Wiring Connections

### Main Harness, 6-pin connector

H/1	RED	(+) 12VDC CONSTANT INPUT
H/2	BLACK	(-) CHASSIS GROUND
H/3	BROWN	(-) 200mA HORN HONK OUTPUT
H/4	WHITE/BROWN	LIGHT FLASH ISOLATION WIRE - PIN 87a light flash relay
H/5	WHITE	PIN 30 of LIGHT FLASH RELAY
H/6	ORANGE	500 mA GROUND WHEN ARMED OUTPUT

### Door Lock, 3-pin connector

1	BLUE	500mA (-) UNLOCK OUTPUT
2	EMPTY	NOT USED
3	GREEN	500mA (-) LOCK OUTPUT

### 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.

#### Estimado Cliente:

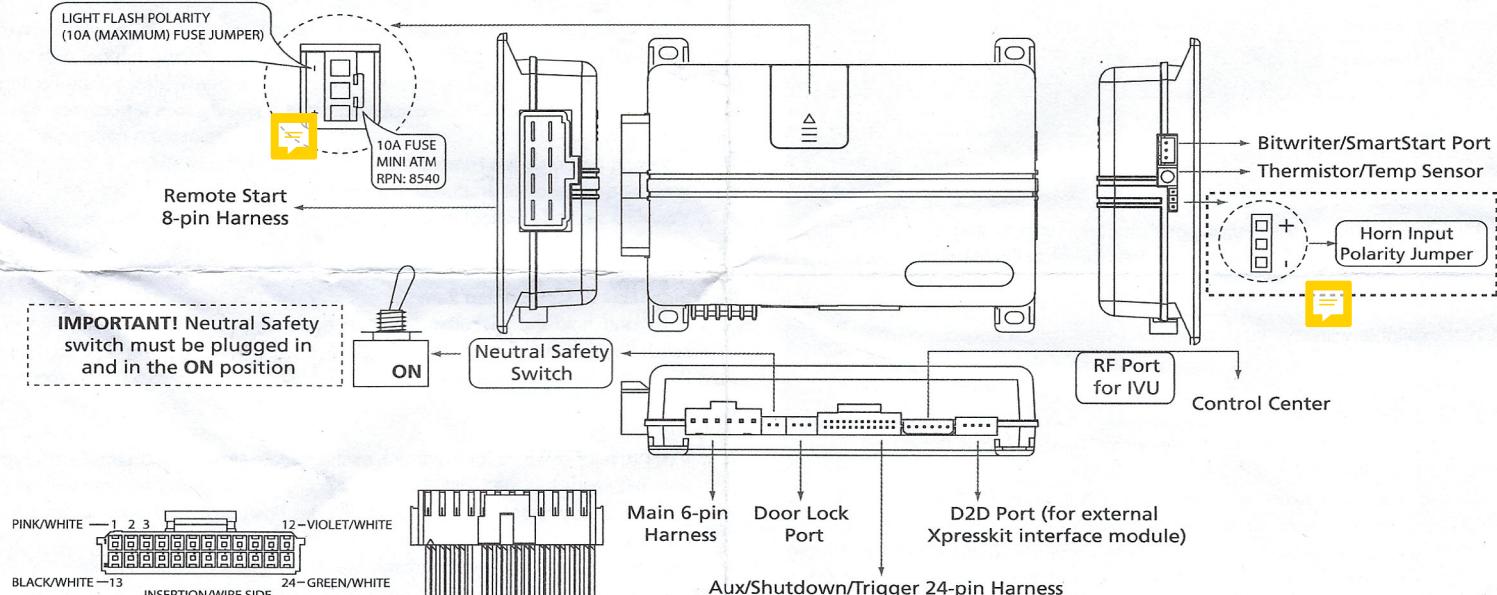
Si buscas los guías de instalación, por favor de bajar lo del Resources en el sitio [www.directechs.com](http://www.directechs.com)

#### Cher consommateur:

Si vous désirez une version française ou espagnole du guide d'installation, veuillez s.v.p. le télécharger à l'adresse suivante: [www.directechs.com](http://www.directechs.com) en appuyant sur l'icône <>Resources>>.

### Remote Start, 8-pin connector

1	RED/BLACK	(+) 12VDC CONSTANT INPUT for ACC and starter relays
2	PINK/BLACK	(+) FLEX RELAY INPUT 87A key side (if required) of FLEX RELAY
3	PINK/WHITE	(+) IGNITION 2 / FLEX RELAY OUTPUT <i>on long memory</i>
4	RED	(+) 12VDC CONSTANT INPUT for ignition 1 relay
5	VIOLET	(+) STARTER OUTPUT
6	ORANGE	(+) ACCESSORY OUTPUT
7	RED/WHITE	(+) 12VDC CONSTANT INPUT for ignition 2 and flex relays
8	PINK	(+) IGNITION 1 INPUT/OUTPUT <i>on short run</i>



### Auxiliary/Shutdown Harness 24-pin connector

1	PNK/WHITE	(-) 200mA Ignition 2/Flex OUTPUT
2	BLUE/WHITE	(-) 200mA 2ND STATUS /REAR DEFOGGER OUTPUT
3	RED/WHITE	(-) 200mA TRUNK RELEASE OUTPUT
4	BLACK/YELLOW	(-) 200mA DOME LIGHT OUTPUT
5	DARK BLUE	(-) 200mA STATUS OUTPUT
6	WHITE/BLACK	(-) 200mA AUX 3 OUTPUT
7	WHITE/VIOLET	(-) 200mA AUX 1 OUTPUT
8	ORANGE/BLACK	(-) 200mA AUX 4 OUTPUT
9	GRAY	(-) HOOD PIN INPUT (NC OR NO)
10	BLUE*	FACTORY HORN INPUT (Use Jumper to set polarity)
11	WHITE/BLUE	ACTIVATION INPUT
12	VIOLET/WHITE**	TACHOMETER INPUT
13	BLACK/WHITE***	(-) NEUTRAL SAFETY /PARKING BRAKE INPUT
14	GREEN/BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT
15	GREEN**	(-) DOOR INPUT

16	EMPTY	-----
17	PINK	(-) 200mA IGNITION 1 OUTPUT
18	VIOLET**	(+) DOOR INPUT
19	VIOLET/BLACK	(-) 200mA AUX 2 OUTPUT
20	BROWN	(+) BRAKE SHUTDOWN INPUT
21	VIOLET/YELLOW	(-) 200mA STARTER OUTPUT
22	GRAY/BLACK	(-) DIESEL WAIT TO START INPUT
23	ORANGE	(-) 200mA ACCESSORY OUTPUT
24	GREEN/WHITE	(-) 200mA FACTORY ALARM ARM OUTPUT

\* This optional input can be connected to the horn circuit (+ or -) in vehicles with factory alarm. When this wire receives input for a minimum of 5 seconds, the system reports a trigger on the 2-way remote. This input is for 2-way 5-button systems only.

\*\* Required connection for manual transmission vehicles.

\*\*\* Ground this wire for automatic transmission vehicles or connect to the parking brake wire for manual transmission vehicles (see owners guide for manual transmission procedure).

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

# Installation Points

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

To learn the tach signal:

1. Start the vehicle with the key.
2. Within 5 seconds, **press and hold** the Control button.
3. After 3 seconds the status LED on your Control Center lights constant when the tach signal is learned.
4. **Release** the 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 is ignored.

## Learning Virtual Tach (not needed with hardwire tach inputs)

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.

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

Virtual Tach handles disengaging the starter motor during remote starting – it does not address overrev. If the customer wants to have the overrev protection capability, the tach wire must be connected.

**Important:** After successfully learning Virtual Tach, a small minority of vehicle starters may over crank or under crank during remote start. The Bitwriter can be used to fine tune the starter output time in 50 ms increments to compensate for such an occurrence.

## Remote Start Shutdown/Startup Diagnostics

To perform shutdown diagnostics:

1. With the ignition Off, **press and hold** the Control button.
2. Turn the ignition On and then back Off while **holding** the Control button.
3. **Release** the Control button.
4. **Press and release** the Control button. The status 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
7 flashes	Timer mode/Turbo mode/Manual mode error *
8 flashes	Neutral safety shutdown
9 flashes	Low battery (voltage mode)
11 flashes	Wait-to-start input timed out

\* Timer mode error: Ignition is on or shutdown input is active when activating timer mode.

Turbo mode error: Turbo mode is programmed off, engine is not on or shutdown input is active.

Manual mode error: MTS mode not enabled.

**Startup Diagnostics:** If the vehicle fails to activate the remote start, the remote start module will flash the parking lights on the vehicle to notify you of what caused the no-start situation.

### Parking Light Flashes

- 5 flashes Brake wire is active
- 6 flashes Hood pin wire is active
- 7 flashes Manual transmission mode is enabled and not initialized.
- 8 flashes Neutral safety wire has no ground or the neutral safety switch is Off.

## Basic Remote Functions

### 5-Button Remote Control

Level Button	DIRECT ACCESS	f X 1	f X 2	f X 3	f X 4
	LOCK	SILENT LOCK			
	UNLOCK	SILENT UNLOCK	REMOTE VALET	CAR FINDER	
	REMOTE START	RUNTIME RESET	TIMER MODE	SMART START	REAR DEFOGGER
AUX	TRUNK RELEASE	AUX 1	AUX 2	AUX 3	AUX 4
	FUNCTION SHIFT	TEMPERATURE CHECK (2-WAY ONLY)	RUNTIME REMAINING (2-WAY ONLY)		

**Note:** The above table (LCD model) is also applicable to LED and companion remote controls. However, some feature locations may differ or may not be available. See owner's guide for your specific model 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

**Important:** If the IVU (control center) has been replaced, all remote controls must be re-paired with the system. See Remote Pairing for details.

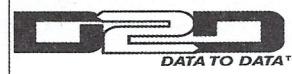
## Bitwriter - only Options



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 Control button.

The Bitwriter® gives you access to a wider range of system options. These features and the adjustments that may be programmed are described under the Bitwriter section in the full online guide.

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 2.7 or newer to program this unit.

## Menu 3 - Remote start

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	Transmission Mode	Manual	Automatic			
2	Engine Checking Mode	Virtual Tach	Voltage	Off	Tachometer	
3	Cranking Time	0.6 sec.	0.8 sec.	1.0 sec.	1.2 sec.	1.4 [5]/1.6 [6]/1.8 [7]/2.0 [8]/4.0[9]
4	Remote Start Runtime	12 min.	24 min.	60 min.		
5	Activation Pulse Count	1	2			
6	Turbo Mode	No Turbo Mode	On-1 min.	On-3 min.	On-5 min.	On-10 min.
7	Timer Mode Runtime**	12 min.	3 min.	6 min.	9 min.	
8	Flex Relay Function	Ignition 2	Accessory 2	Starter 2		
9	Diesel Start Delay	Wait-to Start input	Timed 15 sec.	Timed 30 sec.	Timed 45 sec.	
10	Accessory during Diesel Start Delay	On	Off			
11	Status 2 Output	Status	Latch Rear Defogger	Pulse Rear Defogger		
12	Parking Light Output	Constant	Pulsed	Off		
13	Anti-grind Output	On	Off			
14	Tach Mode Starter Release	Normal	Increase	Decrease		
15	Vehicle temp*** auto report	Off	On			
16	Remote Start Safelock	Off	On			

\* With the 1-button remote; turbo timer can only be activated by adding a push button to the white/blue (-) activation input wire on the 24 pin harness.

\*\* Not available with the 1-button remote control.

\*\*\* Not available with the 1-button or 1-way remote control.

## Reset and Delete

To reset the features/virtual tach or delete remote controls follow this procedure:

1. Turn the key to the ON position.
2. Within 5 seconds press and release the control button: 2 times to delete remotes, 3 times to reset the features to default or 4 times to reset virtual tach.
3. Once you have selected the function step, press the control button once more and hold it. The LED will flash and the horn honks to confirm the functional step chosen. Release the control button.
4. Press the **Lock** button of a programmed remote control. The horn honks confirming the feature has been reset/deleted.

**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.
- 60 seconds lapses with no actions.

## Remote Pairing

Prepare the system to be paired with a new remote:

1. Turn the key to the on position.
2. Within 5 seconds press and release the control button on the control center one time.
3. Within 5 seconds, press and hold the control button on the control center. The status led will begin flashing in sequence of one flash and the siren will chirp to confirm the vehicle is ready for remote pairing.
4. Follow the below instructions to setup the remote type to be paired to the system.

System Pairing will exit if:

- The ignition is turned off.
- 60 seconds lapses with no actions.

**Note:** Make sure the remote to be paired with the system is set for the desired Car 1 or Car 2 operation.

### LCD Remote:

1. Press and hold the **f** button for 8 seconds, the remote will beep once, **Main Menu** is displayed. Release the **f** button.
2. Press the **or** buttons until **Pair** is displayed.
3. Press and hold the **f** button until the remote beeps 3 times then release the **f** button. The remote is now ready to pair with the system.
4. Press the **Lock** button.
5. Wait several seconds for feedback as the remote generates a security encryption and sends it to the Control Center. If pairing is successful the siren will chirp and the remote will emit several tones. The screen displays if the Pairing is successful or failed with corresponding text. If pairing fails repeat step 4.

### To exit pairing mode on the remote:

- Press and release the **Lock** button.
- Wait 30 seconds without pressing a command button on the remote

### Responder LED or Companion Remote:

1. Press and hold the **f** button for 8 seconds. The transmit LED will come on solid. Release the **f** button.
  2. Press and hold the **f** until the transmit LED flashes 3 times then comes on solid.
  3. Press the **Lock** button.
  4. Wait several seconds for feedback as the remote generates a security encryption and sends it to the Control Center. If pairing is successful the siren will chirp and the 2-way remote will emit several tones (the companion remote does not generate tones).
- If pairing is not successful press and release the **f** button once and then repeat steps 2 and 3.

### To exit pairing mode on the remote:

- Press and release the **f** button once, then press and hold until the transmit LED shuts off.
- Wait 30 seconds without pressing a command button on the remote.

### 1 Button 1-way and 2-way Remote:

1. Press and hold the remote button until the transmit LED comes on solid.
- Note:** The transmit LED pattern will change while holding.

2. If pairing is successful the horn will sound.
- If pairing is not successful repeat step 1.

See full Installation Guide for more detailed information. Such information and more 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 Control button.

1. Turn the ignition on, then off.
2. Select a Menu. Press and hold the Control button. The number of horn honks and LED flashes indicates the menu number. 1 horn honk and LED flash indicates menu 1, 2 horn honks and LED flashes - menu 2 and 3 horn honks and LED flashes for menu 3.
3. When the desired menu horn honks are heard with LED flashes, release the Control button.
4. Select a Feature. Press and release the Control button the number of times corresponding to the feature you wish to change. Then press and hold one more time to select the features.
5. Program the Feature. While holding the Control button, you can program the feature using the remote control.

For features with only two options; = option 1 while = option 2.

For features with more than two options; selects the options in ascending order, while selects them in descending order.

Note: Pressing button resets the feature to the factory default.

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 Control 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 Control button once more and hold it.

To select another menu:

1. Press and hold the Control button.
2. After 3 seconds, the unit advances to the next menu and the horn honks and the 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 Control button is pressed too many times

## Feature Menus

Default settings are in bold type.

### Menu 1 - Vehicle Integration

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	System Locking Mode	Active Locking	Passive Locking	Auto Re-locking		
2	Panic Mode*	On	Ign Off only	Off		
3	Horn Function	Confirmation Chirp (20 ms) & Panic	Confirmation Chirp (30 ms) & Panic	Confirmation Chirp (40 ms) & Panic	Confirmation Chirp (50 ms) & Panic	Confirmation Chirp Off - Panic Only (Pulsed)
4	Ign-controlled locks	No Ign-locking	Lock & Unlock	Lock Only	Unlock Only	

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
5	Door Lock Pulses	Single	Double Unlock Only	Double Lock Only	Double Lock & Unlock	
6	Door Lock output duration	0.8 sec.	3.5 sec.	0.4 sec.		
7	2nd Unlock	2nd unlock on/ Ign-control after first unlock	2nd unlock on/ Ign-control with first unlock			
8	Comfort Closure *	No Comfort Closure	Comfort Closure 1	Comfort Closure 2		
9	Hood Trigger Type	Normally Open	Normally closed	Normally closed		
10	Door Switch Type	Normally open	Normally closed	Normally closed		
11	Ignition Off msg (remote button unlock) **	On	Off			

\* Not available on the 1-button remote control.

\*\* Not available on the 1-way remote control.

### Menu 2 - Convenience

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	One-time Bypass	No Bypass	Bypass			
2	Valet Switch Pulse Count	1	2	3	4	5
3	Door Ajar Error msg*	On	Off			
4	Ign-controlled Dome light	On	Off			
5	OEM Alarm Disarm w/Aux/trunk *	On	Off			
6	OEM Alarm Disarm Output	With Unlock	Before Unlock	Remote Start Only		
7	OEM Alarm Disarm Pulses	1	2			
8	Aux 1 Output type**	Validity	Latch	Latch/reset/ign	Timed	Off (5)/2nd Unlock (6)
9	Aux 1 Linking	No Linking	Link to Lock	Link to Unlock	Link to Lock/Unlock	Link to Remote Start only
10	Aux 2 Output type**	Validity	Latch	Latch/reset/ign	Timed	Off (5)/2nd unlock (6)
11	Aux 2 Linking	No Linking	Link to Lock	Link to Unlock	Link to Lock/Unlock	Link to Remote Start only
12	Aux 3 Output type**	Validity	Latch	Latch/reset/ign	Timed	Off (5)/2nd unlock (6)
13	Aux 3 Linking	No Linking	Link to Lock	Link to Unlock	Link to Lock/Unlock	Smart Key Control [Link to Remote Start Off]
14	Aux 4 Output Type**	Validity	Latch	Latch/reset/ign	Timed	Off (5)/2nd Unlock (6)
15	Aux 4 Linking	No linking	Link to Lock	Link to Unlock	Link to Lock/Unlock	Link to Remote Start Only
16	Aux/Trunk Output type	Validity	Off	2nd unlock		

\* Not available with the 1 button remote

\*\* Aux channels with the 1button remote can only be accessed with channel linking to unlock or remote start.