

Quick Reference Install Guide

Remote Start Keyless Entry Responder LE 2-Way

Wiring Connections

Main Harness, 6-pin connector

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

Estimado Cliente:

Si buscas los guías de instalación, por favor de bajar lo del Resources en el sitio www.directechs.com

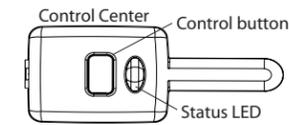
Cher consommateur:

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 en appuyant sur l'icône <<Resources>>.

Remote Start, 8-pin connector

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

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.

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.

To reset Virtual Tach, go into the Remote Pairing section of this guide and **press/release** the Control button 4 times for step #4, then **press and hold** the Control button to reset Virtual Tach. Virtual Tach **cannot** be reset with the Bitwriter.

Note: Virtual Tach cannot be used in MTS 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 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 50mS increments to compensate for such an occurrence.

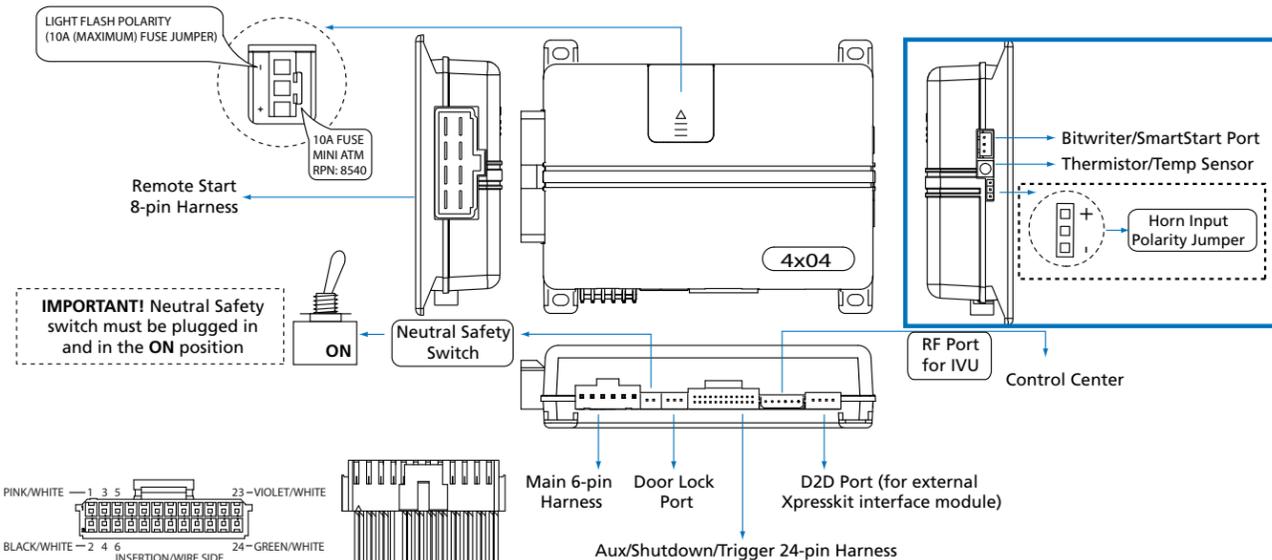
Remote Start Shutdown/Startup Diagnostics

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

* This optional input can be connected to the horn circuit (+ or -). When this wire receives input for a minimum of .5 seconds, the system reports a trigger on the 2-way remote. This is useful on vehicles that have a factory security system that can be armed/disarmed with the Directed system. This system will not report that a zone has been triggered when unlocking with the 2-way remote. This feature is not available on the 1-way remote.



Auxiliary/Shutdown Harness 24-pin connector

1	PNK/WHITE	(-) 200mA FLEX RELAY CONTROL OUTPUT
2	BLACK/WHITE	(-) NEUTRAL SAFETY INPUT
3	BLUE/WHITE	(-) 200mA 2ND STATUS /REAR DEFOGGER OUTPUT
4	LT. GREEN/BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT
5	RED/WHITE	(-) 200mA TRUNK RELEASE OUTPUT
6	GREEN	(-) DOOR INPUT
7	BLACK/YELLOW	(-) 200mA DOME LIGHT OUTPUT
8	EMPTY	-----
9	DARK BLUE	(-) 200mA STATUS OUTPUT
10	PINK	(-) 200mA IGNITION 1 OUTPUT
11	WHITE/BLACK	(-) 200mA AUX 3 OUTPUT
12	VIOLET	(+) DOOR INPUT
13	WHITE/VIOLET	(-) 200mA AUX 1 OUTPUT
14	VIOLET/BLACK	(-) 200mA AUX 2 OUTPUT
15	ORANGE/BLACK	(-) 200mA AUX 4 OUTPUT

16	BROWN	(+) BRAKE SHUTDOWN INPUT
17	GRAY	(-) HOOD PIN INPUT (NC OR NO)
18	VIOLET/YELLOW	(-) 200mA STARTER OUTPUT
19	BLUE*	FATORY HORN INPUT (Use jumper to set polarity)
20	GRAY/BLACK	(-) DIESEL WAIT TO START INPUT
21	WHITE/BLUE	ACTIVATION INPUT
22	ORANGE	(-) 200mA ACCESSORY OUTPUT
23	VIOLET/WHITE	TACHOMETER INPUT
24	GREEN/WHITE	(-) 200mA FACTORY ALARM ARM OUTPUT

- * 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.

Remote Pairing

Prepare the vehicle 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 system's Control Center one time.
3. Within 5 seconds, **press and hold** the Control button on the Control Center. The status LED will flash one time and the horn honks to confirm the vehicle is ready for remote pairing.
4. **Release** the Control button and proceed below.

Note: If no remote pairing results, the system will exit after 60 seconds.

Prepare the new remote to be Paired with the system

Remote Pair matches your remote to the system. Make sure the remote is set for the desired Car 1 (Default) or Car 2 operation for the system it will be paired with.

1. **Press and hold** the **f** button for 8 seconds.
2. Wait for the Transmit LED to light solid. **Release** the **f** button.
3. **Press** the **⏸** for 1 second. The transmit LED will blink 3 times.
4. Within 5 seconds, **press** the **🔒** button.
5. The vehicle horn will honk. You have now successfully learned the remote to the vehicle remote start system.
6. **Press** the **f** button two times to exit learn routine on the remote. The transmit LED will turn off and exit.

Basic Remote Functions

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
f	FUNCTION SHIFT	CABIN TEMPERATURE REQUEST (2-WAY ONLY)	LOCK STATUS (2-WAY ONLY)	RUNTIME CHECK (2-WAY ONLY)	

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.

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. New features are **bold** in solid grey rows.

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	
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			
10	Door Switch Type	Normally open	Normally closed			
11	Ignition Off msg (remote button unlock)	On	Off			

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		

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 1.5 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			

* not applicable to 1-way remote

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 in the table below. Default settings are in **bold**.

Menu Item	Feature	Default	Opt. 2	Opt. 3	Opt.4	Opt. 5+
3	Aux 1 Icon Type*	Pulsed	Trunk	Window	Sunroof	Audio/Lights/Left dr/Right dr/Rear Hatch/Timed/Latched
4	Aux 2 Timed Output	30 sec.	Options: 1 to 90 sec.			
5	Aux 2 Icon Type*	Pulsed	Trunk	Window	Sunroof	Audio/Lights/Left dr/Right dr/Rear Hatch/Timed/Latched
6	Aux 3 Timed Output	30 sec.	Options: 1 to 90 sec.			
7	Aux 3 Icon Type *	Pulsed	Trunk	Window	Sunroof	Audio/Lights/Left dr/Right dr/Rear Hatch/Timed/Latched
8	Aux 4 Timed Output	30 sec.	Options: 1 to 90 sec.			
9	Diesel Start Delay type (seconds)	15 sec.	Options: 1 to 90 sec.			

Menu Item	Feature	Default	Opt. 2	Opt. 3	Opt.4	Opt. 5+
1	Aux/Trunk Icon Type*	Trunk	Window	Sunroof	Audio	Lights/Left dr/Right dr/Rear Hatch
2	Aux 1 Timed Output	30 sec.	Options: 1 to 90 sec.			

Menu Item	Feature	Default	Opt. 2	Opt. 3	Opt.4	Opt. 5+
10	Timer Mode Runtime (minutes)	12 min.	Options: 1 to 16 min.			
11	Timer Mode Starts	6 starts	Options: 1/2/3/4 to 24 (Starts) in increments of 2			
12	Timer mode intervals (hours)	3 hr.	Options: 1/2/ 3 /4 to 24 in 2 hour increments			
13	Smart start low temp	0° (F)	Options: OFF, -20° to 70° in 10° increments			
14	Smart start high temp	100° (F)	Options: OFF, 40° to 130° in 10° increments			
15	Smart start low battery (volts)	10.5V	Options: OFF, 9V to 12.5V in 0.5V increments			
16	Starter Release Fine Tune	6 (normal)	Options: 0 to 20 in increments of 1			
17	Feature Programming	Unlocked	Locked			

Menu Item	Feature	Default	Opt. 2	Opt. 3	Opt.4	Opt. 5+
18	Transmitter Programming	Unlocked	Locked			
19	Remote Start Runtime	12 min.	Options: 1 to 60 min.			
20	Virtual Tach Fine Tune	Not Initialized	Options: Not initialized, 0 to 1000 in 50 millisecond increments			

* available only on remotes with display screens

See full Installation Guide for more detailed information on this system. Such information and more can be found online at:
www.directechs.com

