

Quick Reference Install Guide

Security and Remote Start

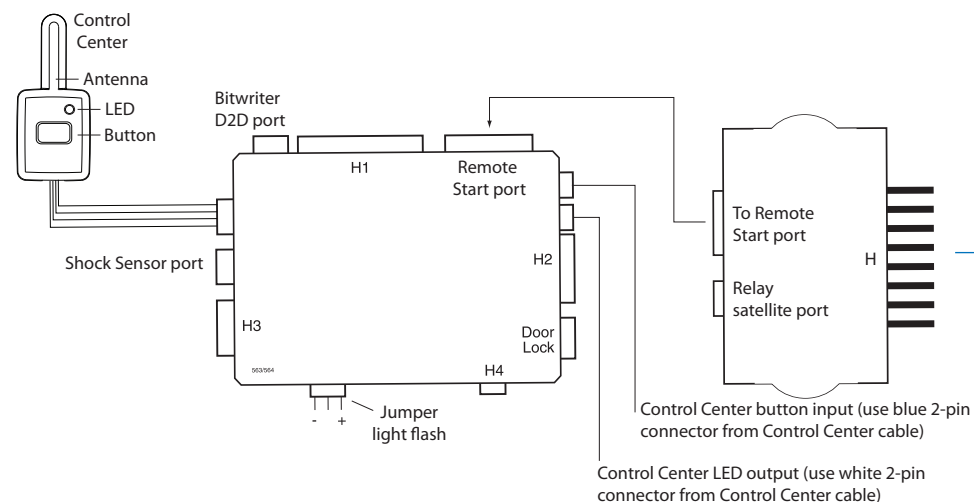
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Wiring Connections

Main Harness (H1), 12-pin connector

H1/1	RED/WHITE	(-) 200mA AUX TRUNK RELEASE OUTPUT
H1/2	RED	(+) CONSTANT POWER INPUT
H1/3	BROWN	(+) SIREN OUTPUT
H1/4		NOT USED
H1/5	BLACK	(-) CHASSIS GROUND INPUT
H1/6	VIOLET*	(+) DOOR TRIGGER INPUT, ZONE 3
H1/7	BLUE	(-) INSTANT TRIGGER INPUT, ZONE 1
H1/8	GREEN*	(-) DOOR TRIGGER INPUT, ZONE 3
H1/9	BLACK/WHITE	(-) 200mA DOMELIGHT SUPERVISION OUTPUT
H1/10	WHITE/BLUE	(-) REMOTE START ACTIVATION INPUT
H1/11	WHITE	(+)/(+) SELECTABLE LIGHT FLASH OUTPUT
H1/12	ORANGE	(-) 500mA GROUND WHEN ARMED OUTPUT

* The door trigger wire will still need to be connected if the system is programmed with security features OFF to allow the system to enter the programming modes.



H4 AUX 4/Horn, 2-pin connector

H4/1	ORANGE/BLACK	(-) 200mA AUX 4 OUTPUT
H4/2	BROWN	(-) 200 mA HORN OUTPUT

Door Lock, 3-pin connector

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

H2 Harness, 6-pin connector

H2/1	BLUE	(-) 200mA SECOND UNLOCK OUTPUT
H2/2	WHITE/BLACK	(-) 200mA AUX 3 OUTPUT
H2/3	VIOLET/BLACK	(-) 200mA AUX 2 OUTPUT
H2/4	GREEN/WHITE	(-) 200mA FACTORY ALARM REARM OUTPUT
H2/5	GRAY/BLACK	(-) WAIT-TO-START INPUT
H2/6	LIGHT GREEN/BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT

Guide Translations

For a Spanish version of the Installation Guide, please download it from www.directechs.com under Resources.

Estimado Cliente:

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

Heavy gauge relay satellite

H/1	PURPLE	STARTER OUTPUT TO STARTER (STARTER SIDE)
H/2	GREEN	STARTER INPUT FROM IGNITION SWITCH (KEY SIDE)
H/3	RED	(+) 30A HIGH CURRENT 12V INPUT
H/4	ORANGE	OUTPUT TO ACCESSORY CIRCUIT
H/5	RED	(+) (30A) HIGH CURRENT 12V INPUT
H/6	PINK	OUTPUT TO PRIMARY IGNITION CIRCUIT
H/7	RED/WHITE	(+) (30A) HIGH CURRENT 12V INPUT
H/8	PINK/WHITE	OUTPUT TO SECOND IGNITION/ACCESSORY CIRCUIT

Relay satellite 4-pin connector

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

H3 Harness Remote Start, 5-pin connector

H3/1	BLACK/WHITE	(-) NEUTRAL SAFETY SWITCH INPUT
H3/2	VIOLET/WHITE	TACHOMETER INPUT WIRE
H3/3	BROWN	(+) BRAKE SHUTDOWN INPUT WIRE
H3/4	GRAY	(-) HOOD PIN SWITCH INPUT, ZONE 6
H3/5	BLUE/WHITE	(-) 200 mA 2ND STATUS/REAR DEFOGGER - Latched Pulsed

Remote Start ribbon harness*

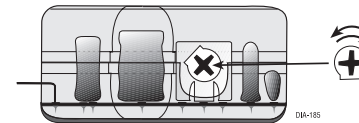
1	PINK/WHITE	(-) 200mA PROGRAMMABLE IGN2/ACC2 RELAY TURN ON
2	YELLOW	(+) IGNITION INPUT TO ALARM
3	PINK	(-) 200mA IGNITION RELAY TURN ON
4	ORANGE	(-) 200mA ACCESSORY RELAY TURN ON
5	PURPLE	(-) 200mA STARTER RELAY TURN ON
6	ORANGE/BLACK	(-) 500mA ANTI GRIND/GROUND WHEN ARMED OUTPUT
7	BLUE	(-) 200 mA STATUS OUTPUT

*The ribbon harness connects to the heavy gauge relay satellite.

Installation Points

Adjusting the Shock Sensor

Important! Make sure the vehicle is disarmed. The shock sensor sensitivity can be adjusted by using a trimmer tool to turn the potentiometer.



Adjusting the sensor:

1. **Disarm** the system, **turn** the ignition Off.
 2. With the sensor mounted in its permanent location, locate the trim pot on the shock sensor module and using a trimmer tool:
 - Turn the potentiometer clockwise for increased sensitivity or
 - Turn it counterclockwise for decreased sensitivity
- Note:** You can test the new setting by cautiously impacting the vehicle with increasing intensity while noting the LED status on the shock sensor. The LED turns on for a short duration for small impacts before turning off (indicating a warn-away trigger). The impact level required to fully trigger the alarm is indicated when the LED remains on for a longer duration before turning off.

Tach Learning

To learn the tach signal:

1. Start the vehicle with the key.
2. Within 5 seconds, press and hold the control center button.
3. After 3 seconds the LED will light constant when the tach signal is learned.
4. Release the control center 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.

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 trucks

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.

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. Open a door. (The GREEN wire, H1/8, or the VIOLET, H1/6 must be connected.)
2. Turn the ignition to the ON position (The heavy gauge pink wire must be connected).
3. Within 10 seconds, press and release the control center 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 security 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 security system or reset the Virtual Tach setting.

Reset Features: This resets all features of the security system to the factory default settings.

Note: This feature does not delete the remotes from the security system or reset the Virtual Tach setting or security features enabled/disabled settings

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.

4. Once you have selected the function step, press the control center button once more and hold it. The LED flashes and the siren chirps to confirm the selected functional step. Do not release the control center button
5. While holding the control center button, press the button on the remote control. The unit chirps to confirm that the feature has been successfully reset.

Once the feature is reset, the control center button can be released.

Remote Start Shutdown Diagnostics

To perform shutdown diagnostics:

1. With the ignition Off, **press** and **hold** the control center button.
2. **Turn** the ignition On and then back Off while **holding** the control center button.
3. **Release** the control center button.
4. **Press** and **release** the control center 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:

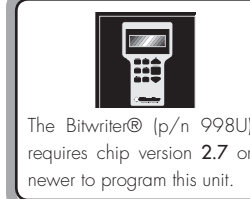
LED Flashes

- 1 flash
- 2 flashes
- 3 flashes
- 4 flashes
- 5 flashes
- 6 flashes
- 7 flashes
- 8 flashes

Shutdown Mode

- Timed out
- Over-rev shutdown
- Low or no RPM, low battery (voltage and virtual tach modes)
- Transmitter shutdown (or optional push button)
- (-) Hood Shutdown (H3/4 GRAY)
- (+) Shutdown (H3/3 BROWN)
- (-) Neutral safety shutdown (H3/1 BLACK/WHITE)
- Wait-to-start timed out

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.



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

www.directechs.com



Programming System Features

Note: When doing any programming with security features off, the horn function (feature menu 1 item 13) must be programmed as Siren function to get an audible confirmation from the unit.

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 center button.

1. **Open** a door.
2. **Turn** the ignition on, then off.
3. **Select** a Menu. **Press** and **hold** the control center button. The number of siren chirps indicates the menu number. 1 chirp indicates menu 1, 2 chirps - menu 2 and 3 chirps for menu 3.
4. When the desired menu chirps are heard, **release** the control center button.
5. **Select** a Feature. **Press** and **release** the control center button the number of times corresponding to the feature you wish to change. Then **press** and **hold** one more time to select the features.
6. **Program** the Feature. While holding the Control center 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.

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 center 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 center button once more and **hold** it.

To select another menu:

1. **Press** and **hold** the control center button.
2. After 3 seconds, the unit advances to the next menu and the siren chirps, indicating which menu has been accessed.



The learn routine exits if any of the following occurs:

- The open door is closed
- The ignition is turned On
- There is no activity for 30 seconds
- The control center button is pressed too many times

Security Features Disable/Enable

The system has the ability to function as a security/remote start system or keyless/remote start system by enabling or disabling security. The default setting is Enabled.

To program the feature.

1. Open a door.
2. Turn the ignition on, then off.
3. Press and hold the control center button until the LED flashes 3 times and the siren (if connected) chirps 3 times.
4. Release the control center button.
Note: If the control center button is released and then pressed again, the system will enter the features programming menus.
5. Within 15 seconds, simultaneously press the  and  buttons of a programmed remote control.
6. The siren (if connected) will chirp and the parking lights will flash as listed below
 - 1 flash/chirp: Security features disabled
 - 2 flashes/chirps: Security features enabled

Security Features Disabled will disable all security operations of the system, including but not limited to those listed below:


- Multi Level Arming
- Sensor Warn-away
- Full Trigger Operation
- Armed While Driving
- Automatic Engine Disable


Note: Disabled features with programmable options can still be programmed manually or with the Bitwriter but will not operate until the Security Features have been enabled.

The Security Features Disable/enable routine exits if the following occurs:

- The open door is closed
- The ignition is turned on
- There is no activity for 15 seconds
- The control center 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 control center 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.

Menu Item	Feature	Default	Options
1	Siren Duration	30 sec.	1-180 sec.
2	Aux 2 Timed Output	30 sec.	1-90 sec.
3	Aux 3 Timed Output	30 sec.	1-90 sec.
4	Aux 4 Timed Output	30 sec.	1-90 sec.
5	Engine Runtime	12 min.	1-60 min.
6	Diesel Start Delay	15 sec.	1-90 sec.
7	Timer Mode Runtime	12 min.	1-16 min.
8	Virtual Tach Fine Tune	Not initialized	0-1000 in 50 millisecond increments
9	Transmitter Programming	Unlocked	Locked
10	Feature Programming	Unlocked	Locked

Note: The “Zap” feature on the Bitwriter does not reset the Virtual tach or security features enabled/disabled settings

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 the 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.

Feature Menus

Default settings are in **bold** type.

Menu 1 - Basic

Menu Item	One-chirp setting	Two-chirp setting
1	Active Arming	Passive arming
2	Arm/disarm chirps on	Arm/disarm chirps Off
3	Ignition lock On	Ignition lock Off
4	Ignition unlock On	Ignition unlock Off
5	Active locking only	Passive locking

6	Panic with ignition On	No panic with ignition On
7	0.8 second door lock pulses (1)	3.5 (2), 0.4 (3) seconds
8	Forced passive arming on	Forced passive arming off
9	Automatic engine disable on	Automatic engine disable off
10	Armed When Driving (AWD) On	AWD Off
11	Code Hopping On	Code Hopping off
12	Horn Output Pulsed	Constant
13	Horn function Full Alarm Only (1)	Siren function - chirp length 20ms (2), 30ms (3), 40ms (4), 50ms (5)
14	Comfort Closure ON (1)	Comfort Closure OFF (2) Comfort Closure 2 (3)


Menu 2 - Advanced

Menu Item	One-chirp setting	Two-chirp setting
1	30 second siren duration	60 second siren duration
2	Nuisance Prevention Circuitry On	Nuisance Prevention Circuitry OFF
3	Progressive door trigger	Instant door trigger
4	Disarm from Valet, 1 pulse	Disarm from Valet, 2-5 pulses
5	Door trigger error chirp ON	Door trigger error chirp OFF
6	Ignition controlled domelight On	Ignition controlled domelight OFF
7	Unlock output 1 pulse	Unlock output 2 pulses
8	Lock output 1 pulse	Lock output 2 pulses
9	Factory disarm with trunk release ON	Factory disarm with trunk release OFF
10	FAD function with Unlock (1)	Before Unlock (2), Remote Start only (3)
11	FAD 1 pulse	2 pulses
12	AUX 2 validity (1)	Latched (2), Latch reset with ignition (3), 30-secs timed (4), 60-secs (5), 90-secs (6)
13	AUX 2 Linking None (1)	Arm (2), Disarm (3), Remote Start (4)
14	AUX 3 validity (1)	Latched (2), Latch reset with ignition (3), 30-sec. timed (4)60sec(5)90sec(6)
15	AUX 3 linking None (1)	Arm (2), Disarm (3), Remote Start (4)
16	AUX 4 validity (1)	Latched (2), Latch reset with ignition (3), 30-sec. timed (4) 60sec (5) 90 (6)
17	AUX 4 linking None (1)	Arm (2),Disarm (3), Remote Start (4)

Menu 3 - Remote start

Menu Item	One-chirp setting	Two-chirp setting
1	Engine checking: Virtual Tach	Voltage(2), OFF(3), Tachometer(4)
2	Remote start runtime: 12 min	24 min, 60 min
3	Parking light output: Flashing	Constant
4	Cranking time: 0.6 sec	0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 4.0 second
5	Activation pulse 1	2
6	2nd Ignition/Acc output: Ignition	Accessory
7	Acc state during wait-to-start Off	On
8	2nd status output: Normal	Rear defogger: latch 10 min. rear defogger pulse
9	Anti grind: On	Off
10	Diesel timer: Wait-to-Start input	Timed 15 , 30 ,45 seconds
11	Timer mode run time: 12 min	3, 6, 9, min
12	Timer mode: Timed starts	Temp starts
13	Short run (turbo): 1 min	3,5, 10 min

Remote Programming

1. Open a door
2. Turn key to the ON position
3. Within 5 seconds, press and release the control center button one time.
4. Within 5 seconds, press and hold the control center button. The LED will flash one time and the siren chirps to confirm entry into remote programming.
5. Press the  button on the remote control.
6. The siren will chirp to confirm the remote has been programmed.
7. Release the control center button.
8. The siren will emit one long chirp confirming that remote programming has been exited.

The programming routine exits if any of the following occurs:




The open door is closed

The ignition is turned off

There is no activity for 30 seconds

The control center button is pressed too many times

Basic Remote Functions

Button	Function
	ARM
	DISARM
	REMOTE START
AUX	TRUNK RELEASE

Note: See Owner's guide for more details

Long Term Event History

The system stores the last two full triggers in memory. These are not erasable. Each time the unit sees a full trigger, the older of the two triggers in memory is replaced by the new trigger. To access long term event history:

1. With the ignition Off, **press** and **hold** the control center button.
2. **Turn** the ignition On.
3. **Release** the control center button.
4. Within 5 seconds, **press** and **release** the control center button. The LED flashes in groups indicating the last two zones that triggered the unit for 1 minute or until the ignition is turned off. Refer to table of zones.

Note: The Warn Away triggers are not stored to memory and is not reported.

Table of Zones

A zone is represented by the number of LED flashes used by the system to identify a particular type of input.

Zone	Trigger Type	Input Description
1	Instant Trigger	BLUE (H1/7)
2	Multiplexed Shock Sensor Input	Mux BLUE sensor port wire.
3	Door Trigger	GREEN (H1/8) and VIOLET (H1/6).
4	Multiplexed Shock Sensor Input	Mux GREEN wire
5	Ignition	Yellow ribbon harness wire
6	Hood Trigger	GRAY on the 6-pin shutdown harness