Quick Reference Install Guide

Security/Keyless Entry and Remote Start for:
5X05 LCD, 2-way and 1-way systems
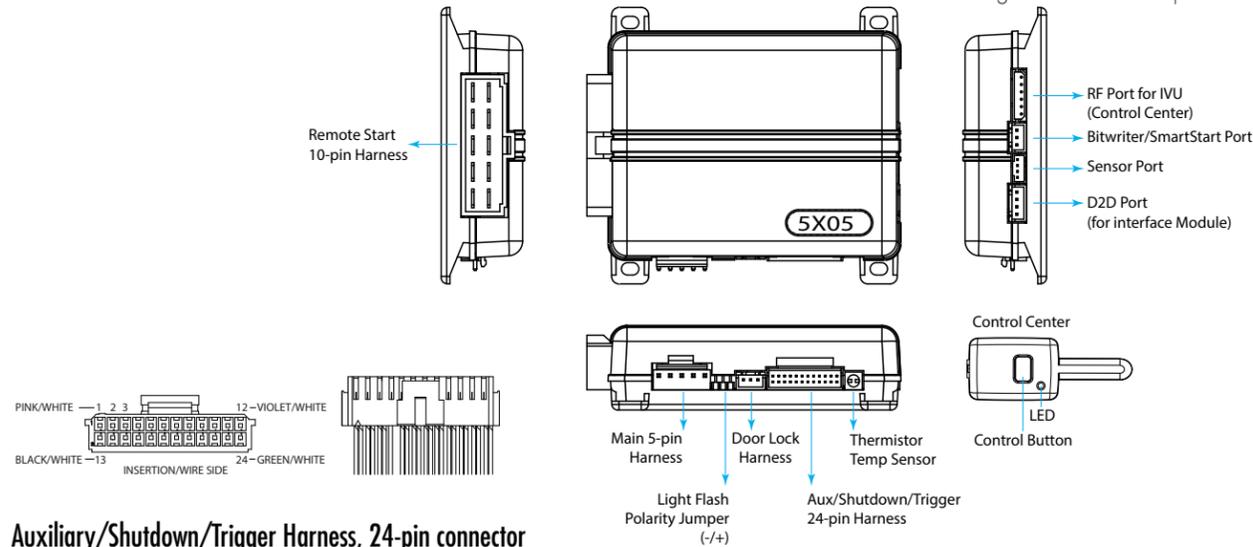
Wiring Connections

Main Harness, 5-pin connector

1	BLACK	(-) CHASSIS GROUND
2	BROWN	(+) SIREN OUTPUT
3	RED	(+) FUSED 12V DC CONSTANT INPUT
4	ORANGE	(-) 500mA GROUND WHEN ARMED OUTPUT
5	WHITE	(+)/(-) SELECTABLE PARKING LIGHT OUTPUT (FUSED)

Door Lock, 3-pin connector

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

Remote Start 10-pin Harness

RF Port for IVU (Control Center)
Bitwriter/SmartStart Port
Sensor Port
D2D Port (for interface Module)

5X05

PINK/WHITE — 1 2 3   12 – VIOLET/WHITE
BLACK/WHITE — 13   24 – GREEN/WHITE
INSERTION/WIRE SIDE

Main 5-pin Harness
Door Lock Harness
Thermistor Temp Sensor
Light Flash Polarity Jumper (-/+)
Aux/Shutdown/Trigger 24-pin Harness

Control Center
LED
Control Button

Auxiliary/Shutdown/Trigger Harness, 24-pin connector

1	PINK/WHITE	(-) 200mA 2nd IGNITION/ACCESSORY OUTPUT
2	BLUE/WHITE	(-) 200mA 2nd STATUS/REAR DEFOGGER OUTPUT
3	RED/WHITE	(-) 200mA TRUNK RELEASE OUTPUT
4	BLACK/YELLOW	(-) 200mA DOME LIGHT SUPERVISION OUTPUT
5	DARK BLUE	(-) 200mA STATUS OUTPUT
6	WHITE/BLACK	(-) 200mA AUX 5 OUTPUT
7	WHITE/VIOLET	(-) 200mA 2nd UNLOCK OUTPUT
8	ORANGE/BLACK	(-) 200mA AUX 6 OUTPUT
9	GRAY	(+) HOOD PIN INPUT
10	BLUE	(-) TRUNK PIN/INSTANT TRIGGER INPUT
11	WHITE/BLUE**	(-) ACTIVATION INPUT
12	VIOLET/WHITE	TACHOMETER INPUT
13	BLACK/WHITE*	(-) PARKING BRAKE INPUT
14	GREEN/BLACK	(-) 200mA FACTORY ALARM DISARM OUTPUT
15	GREEN	(-) DOOR INPUT
16	BROWN/BLACK	(-) 200mA HORN HONK OUTPUT
17	PINK	(-) 200mA IGNITION 1 OUTPUT
18	VIOLET	(+) DOOR INPUT
19	VIOLET/BLACK	(-) 200mA AUX 4 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

* Connect this wire to one of the wires on the provided Remote Start Shutoff Switch. The other wire on the switch connects to the (-) Parking Brake wire in the vehicle. The switch must be in the ON position for the remote start to work.

** This wire not only activates the remote start, it can also be used to change feature options when programming. See Features Programming.

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

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».

Remote Start, 10-pin heavy gauge connector

1	N/C	No Connection
2	RED/BLACK	(+) FUSED 12V ACCESSORY/STARTER RELAY INPUT
3	PINK/BLACK*	2nd IGNITION/ACCESSORY ISOLATION WIRE (87a of onboard relay)
4	PINK/WHITE	(+) 2nd IGNITION/ACCESSORY RELAY OUTPUT (30 of onboard relay)
5	RED	(+) FUSED 12V IGNITION 1 RELAY INPUT
6	GREEN	STARTER INPUT (KEY SIDE OF THE STARTER KILL)
7	VIOLET	(+) STARTER OUTPUT (CAR SIDE OF THE STARTER KILL)
8	ORANGE	(+) ACCESSORY OUTPUT
9	RED/WHITE	(+) FUSED 12V 2nd IGNITION/ACCESSORY RELAY INPUT 87
10	PINK	(+) IGNITION 1 INPUT/OUTPUT

* This wire is only used in applications that require a specific circuit at the ignition switch to be isolated during the remote start sequence.

Installation Points

Adjusting the Sensor

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

Turn the potentiometer clockwise to increase sensitivity and counterclockwise to decrease 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. When testing the sensor: warn away trigger is indicated by a short LED flash and full trigger is indicated by a longer LED flash.

Learning the 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 control button.
3. After three 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.

Initializing Virtual Tach (not needed with hard-wired tach inputs)

To program Virtual Tach:
1. After the install is complete, **remote start** the engine. The programming operation may require three 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 Reset and Delete section of this guide. Virtual Tach **cannot** be reset with the Bitwriter.

Note: Virtual Tach is not recommended for diesel vehicles.

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 fine tune the starter output time in 50 ms increments to compensate for such an occurrence.

Remote Start Shutdown 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 shutoff 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 you used to shut off the remote start.

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 (Tachometer mode), or Low Battery (Voltage mode).
4 flashes	Transmitter shutdown (or optional push button).
5 flashes	Hood shutdown.
6 flashes	(+) Brake shutdown.
7 flashes	Parking Brake input has no ground.
8 flashes	Wait-to-start input timed out.

Basic Remote Functions

Button	Function
🔒	ARM
🔓	DISARM
✳	REMOTE START
AUX	TRUNK RELEASE *
P	PROGRAMMING **

* On some remote controls, the 🔲 icon may exist instead of the AUX icon. Functionality is the same regardless of which one of these icons is used with your system.
** Only applicable to LCD 2-way remote control.

Note: See Owner's guide for more details.

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.

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

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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 button until the LED flashes three times and the siren (if connected) chirps three times.
4. Release the control button.
   Note: If the control 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 next:
   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 next:
- 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 button is pressed too many times.

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 and the door trigger input must be connected.

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. **Open** a door.
2. **Turn** the ignition on, then off.
3. **Select** a Menu. **Press** and **hold** the control button. The number of siren chirps indicates the menu number. One chirp indicates menu 1, Two chirps - menu 2 and three chirps for menu 3.
4. When the desired menu chirps are heard, **release** the control button.
5. **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.
6. **Program** the Feature. While holding the control button, you can program the feature using the remote control or by pulsing a (-) on the 24-pin harness white/blue activation input wire.
   - With remote control: Pressing the 🗝 button on the remote will select the option in the two chirp and up setting. Pressing the 🔒 button on the remote will set the option to the one chirp setting.
   - With White/blue (-) activation input: Each time this input is pulsed with a (-) the next available setting will be picked.

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 three 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 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 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 4* Timed Output	30 sec.	1-90 sec.
3	Aux 5* Timed Output	30 sec.	1-90 sec.
4	Aux 6* Timed Output	30 sec.	1-90 sec.
5	Engine Runtime	12 min.	1-60 min.
6	Diesel Start Delay Time	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 milliseconds 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.

* On the Bitwriter AUX 4 is labeled as "AUX 2", AUX 5 as "AUX 3", and AUX 6 as "AUX 4".

Feature Menus
Default settings are in **bold** type.

Note: The numbers in parenthesis are the amount of times the siren will chirp and the LED flashes when an option in the Two-chirp + setting is chosen.

Menu 1 - Basic

Menu Item	One-chirp setting	Two-chirp + setting
1	System Arming Mode: **Active**	System Arming Mode: Passive
2	Confirmation chirps **On**	Confirmation chirps Off
3	Ignition controlled lock **On**	Ignition controlled lock Off
4	Ignition controlled unlock **On**	Ignition controlled unlock Off
5	Door Locking Mode: **Active locking**	Door Locking Mode: Passive locking
6	Panic with ignition: **On**	Panic with ignition: Off
7	Door lock output duration: **0.8**	Door lock output duration: 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 Mode: **On**	Code Hopping Mode: Off
12	Horn Honk Mode: **Pulsed**	Constant
13	Horn function: **Full Alarm Only**	Siren function - chirp length 20ms (2), 30ms (3), 40ms (4), 50ms (5)
14	Comfort Closure: CC1*	Comfort Closure: **OFF** (2) Comfort Closure: CC2* (3)

* Comfort closure 1: The lock output will provide a single pulse followed by a 20 second pulse when arming the system. Comfort closure 2: The lock output will provide a single 20 second pulse when arming the system.

Menu 2 - Advanced

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

* On the Bitwriter AUX 4 is labeled as "AUX 2", AUX 5 as "AUX 3", and AUX 6 as "AUX 4".

Menu 3 - Remote start

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

Reset and Delete

To reset the features/virtual tach or delete remote controls follow this procedure:
1. Open at least one vehicle door.
2. Turn the key to the ON position.
3. Within five seconds press and release the control button: two times to delete remote controls, three times to reset the features to default or four times to reset virtual tach.

4. Once you have selected the function step, press the control button once more and hold it. The LED will flash and the siren will chirp to confirm the functional step chosen. Do not release the control button yet.
5. Press the 🔒 button of a programmed remote control. The siren will chirp confirming the feature has been reset/deleted.
6. Release the control button and turn off the ignition. The siren chirps 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.
- The open door is closed.
- 60 seconds lapses with no actions.
- The control button is pressed too many times

Remote Programming

1. Open a door.
2. Turn key to the ON position.
3. Within five seconds, press and release the control button one time.
4. Within five seconds, press and hold the control button. The LED will flash one time and the siren chirps to confirm entry into remote programing. Do not release the control button yet.
5. Press the 🔒 button on each remote control to be programmed.
6. The siren will chirp to confirm when each remote has been programmed.
7. Release the control button and turn off the ignition. The siren chirps to confirm exiting.

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 button is pressed too many times.

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 button.
2. **Turn** the ignition On.
3. **Release** the control button.
4. Within five seconds, **press** and **release** the control 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 are not reported.

Table of Zones

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

Zone	Description	Input Description
1	Trunk trigger	24-pin harness, Blue wire
2	Multiplexed Shock Sensor Input	Shock (impact) sensor
3	Door trigger	24-pin harness, Green or Violet wire
4	Instant trigger: For optional sensors	Optional MUX Green Impact sensor port wire
5	Ignition trigger	Heavy gauge 10-pin harness, Pink wire
6	Hood Pin	24-pin harness, Gray wire