XPRESS**START** |ONE
4x10/5x10

Analog Mode

(Non Digital Install Type)

Installation Guide

This product is intended for installation by a professional installer only! Attempts to install this product by a person other than a trained professional may result in severe damage to a vehicle's electrical system and components.

DIRECTED®

Contents

Warning! Safety first

⚠️ The following safety warnings must be observed at all times:

- Due to the complexity of this system, installation of this product must only be performed by an authorized Directed dealer.
- When properly installed, this system can start the vehicle via a command signal from the remote control. Therefore, never operate the system in an area that does not have adequate ventilation.

The following precautions are the sole responsibility of the user; however, authorized Directed dealers should:

- Never use a test light or logic probe when installing this unit. Always use a multimeter.
- Never operate the system in an enclosed or partially enclosed area without ventilation (such as a garage).
- When parking in an enclosed or partially enclosed area or when having the vehicle serviced, the remote start system must be disabled using the installed toggle switch. It is the user's sole responsibility to properly handle and keep out of reach from children all remote controls to assure that the system does not unintentionally remote start the vehicle.
- USER MUST INSTALL A CARBON MONOXIDE DETECTOR IN OR ABOUT THE LIVING AREA ADJACENT TO THE VEHICLE. ALL DOORS LEADING FROM ADJACENT LIVING AREAS TO THE ENCLOSED OR PARTIALLY ENCLOSED VEHICLE STORAGE AREA MUST REMAIN CLOSED AT ALL TIMES.

Use of this product in a manner contrary to its intended mode of operation may result in property damage, personal injury, or death. Except when performing the Safety Check outlined in this installation guide, (1) Never remotely start the vehicle with the vehicle in gear, and (2) Never remotely start the vehicle with the keys in the ignition. The user is responsible for having the neutral safety feature of the vehicle periodically checked, wherein the vehicle must not remotely start while the car is in gear. This testing should be performed by an authorized Directed dealer in accordance with the Safety Check outlined in this product installation guide. If the vehicle starts in gear, cease remote start operation immediately and consult with the user to fix the problem immediately.

After the remote start module has been installed, test the remote start module in accordance with the Safety Check outlined in this installation guide. If the vehicle starts when performing the Neutral Safety Shutdown Circuit test, the remote start unit has not been properly installed. The remote start module must be removed or properly reinstalled so that the vehicle does not start in gear. All installations must be performed by an authorized Directed dealer.

OPERATION OF THE REMOTE START MODULE IF THE VEHICLE STARTS IN GEAR IS CONTRARY TO ITS INTENDED MODE OF OPERATION. OPERATING THE REMOTE START SYSTEM UNDER THESE CONDITIONS MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY. IMMEDIATELY CEASE THE USE OF THE UNIT AND REPAIR OR DISCONNECT THE INSTALLED REMOTE START MODULE. DIRECTED WILL NOT BE HELD RESPONSIBLE OR PAY FOR INSTALLATION OR REINSTALLATION COSTS.

Remote starters for manual transmission pose significant risks if not properly installed and operated. When testing to ensure the installation is working properly, only remote start the vehicle in neutral gear, on a flat surface and with a functional, fully engaged parking brake. Do not allow anyone to stand in front of or behind the vehicle.

This product should not be installed in any convertible vehicles, soft or hard top with a manual transmission. Installation in such vehicles may pose certain risk.

Introduction

4x10/5x10 Analog is a complete solution for remote start and/or security, bypass and digital interface. This guide provides information on the installation of the 4x10/5x10 module as an analog unit. If you would prefer using 4x10/5x10 as a digital solution, go to www.xpresskit. com, and search for the make, model and year of the vehicle.

⚠️ **Warning!** This module must be connected to the internet and configured prior to installation using an XKLoader2, as well as the web-based Config Wizard found at www.xpresskit.com.

Note: When used in digital mode, use the firmware-specific guide, which can be found online.

XpressStart ONE 4x10/5x10 compatibilities

For further information on the products listed below, refer to the corresponding documentation.

Product	Description
SmartStart	Remote start, lock and unlock your car by only pushing a button on your smartphone; using the simple graphical interface of the Directed SmartStart App.
SmartStart BLUETOOTH®	Access and remote start your vehicle using the Bluetooth® technology from your smartphone, with the simple graphical interface of the Directed SmartStart App.
Passive Keyless Entry (PKE)	Unlock your vehicle doors simply by walking up to the vehicle, or walking away to lock. It can be installed in combination with any Directed or Autostart remote start by connecting to the D2D port – with no additional wires to connect.

What you get

Welcome to the best generation of security with remote start. Your system contains everything you need.

4x10 remote start system content

- XpressStart ONE KA4x10 Module.
- M501 Remote Start Relay Module.
- KA4x10 Series Control Module (IVU).
- Wiring cables.
- 2x remote controls (model and technology depend on the kit you have purchased).
- Owner's Guide and Security Registration Card.
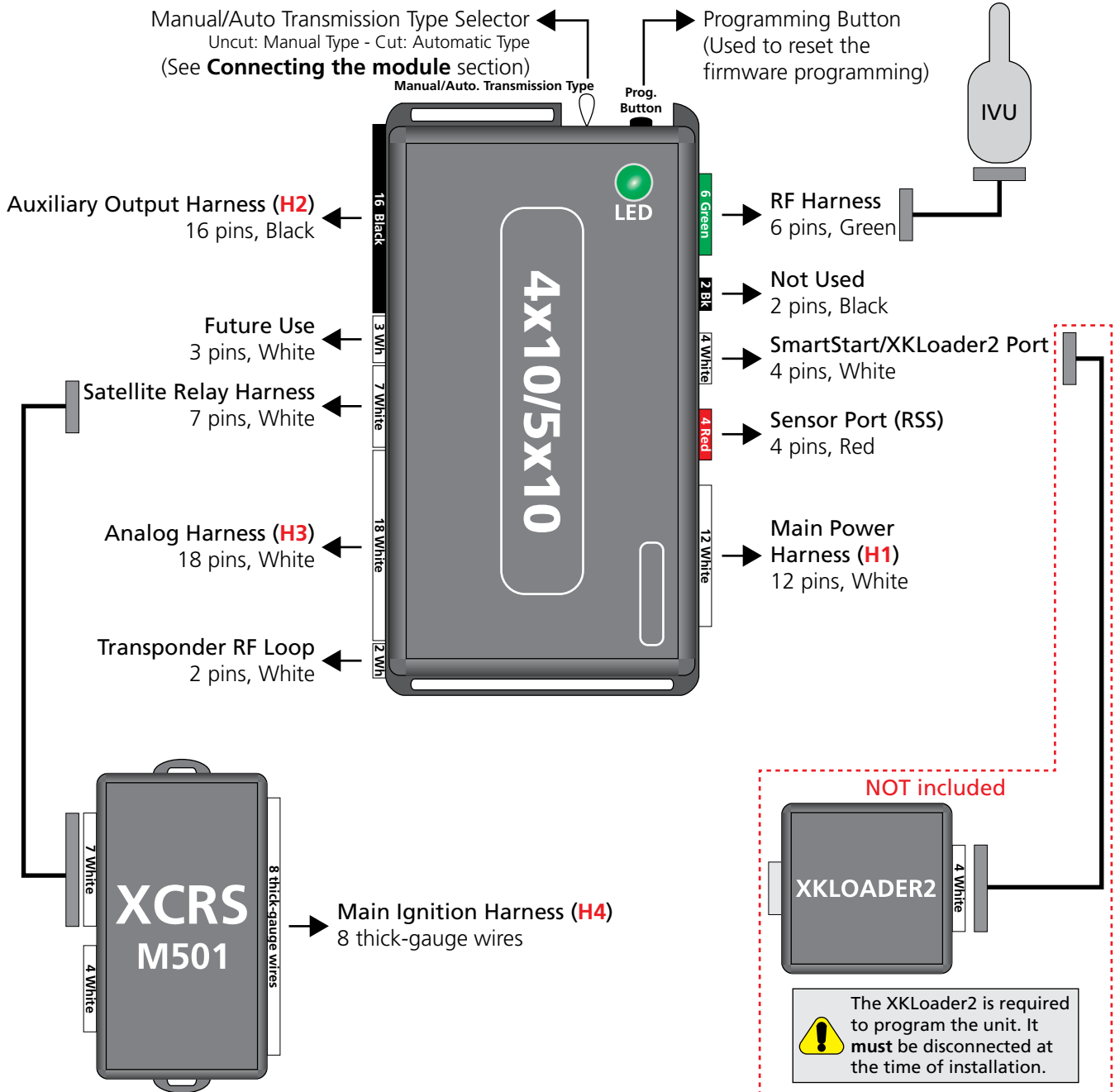
5x10 remote start and security system content

- XpressStart ONE KA5x10 Module.
- M501 Remote Start Relay Module.
- KA5x10 Series Control Module (IVU).
- 514LN Revenger Soft Chirp 6-Tone Siren.
- 504D Double Guard Stinger Shock Sensor.
- Wiring cables.
- 2x remote controls (model and technology depend on the kit you have purchased).
- Owner's Guide and Security Registration Card.

Main module connections

Manual/Auto Transmission Type Selector
Uncut: Manual Type - Cut: Automatic Type
(See **Connecting the module** section)

Manual/Auto. Transmission Type

Prog.
Button

Programming Button
(Used to reset the
firmware programming)

IVU

Auxiliary Output Harness (**H2**)
16 pins, Black

16 Black

LED

6 Green

4x10/5x10

RF Harness
6 pins, Green

2 Bk

Not Used
2 pins, Black

Future Use
3 pins, White

3 Wh

4 White

SmartStart/XKLoader2 Port
4 pins, White

Satellite Relay Harness
7 pins, White

7 White

4 Red

Sensor Port (RSS)
4 pins, Red

Analog Harness (**H3**)
18 pins, White

18 White

12 White

Main Power
Harness (**H1**)
12 pins, White

Transponder RF Loop
2 pins, White

2 Wh

NOT included

XCRS
M501

7 White

4 White

8 thick-gauge wires

Main Ignition Harness (**H4**)
8 thick-gauge wires

XKLOADER2

4 White

The XKLoader2 is required
to program the unit. It
must be disconnected at
the time of installation.

Wiring connections

⚠️ The wiring connections listed below are generic to this firwmare. Refer to each installation type to see whether they are required for your vehicle.

Main power harness (H1), 12-pin thick gauge connector

* These outputs are configurable by the installer when the module is flashed.

Conn./Pin	Color	Description
H1/1	WHITE	COMMON RELAY 3 – PARKING LIGHT OUTPUT
H1/2	WHITE/BROWN	N.O. RELAY 3 – PARKING LIGHT INPUT
H1/3	BROWN/RED	N.O. RELAY 2*
H1/4	YELLOW/RED	COMMON RELAY 2*
H1/5	ORANGE/RED	N.C. RELAY 2*
H1/6	YELLOW	COMMON RELAY 1*
H1/7	WHITE	COMMON RELAY 3 – PARKING LIGHT OUTPUT
H1/8	WHITE/BROWN	N.O. RELAY 3 – PARKING LIGHT INPUT
H1/9	BLACK	(-) GROUND
H1/10	RED	(+) POWER 12V
H1/11	ORANGE/YELLOW	N.C. RELAY 1*
H1/12	BROWN	N.O. RELAY 1*

Auxiliary output harness (H2), 16-pin black connector

* These outputs are configurable by the installer when the module is flashed, and are low current. Use a relay if necessary.

Conn./Pin	Color	Description
H2/1	VIOLET/BROWN	No connection
H2/2	YELLOW/BLACK	No connection
H2/3	ORANGE/BLACK	No connection
H2/4	TAN	No connection
H2/5	TAN/BLACK	No connection
H2/6	LIGHT GREEN	No connection
H2/7	ORANGE/GREEN	No connection
H2/8	ORANGE/BROWN	No connection
H2/9	VIOLET/GREEN	No connection
H2/10	LT. GREEN/WHITE	(-) FACTORY ALARM ARM OUTPUT
H2/11	WHITE/VIOLET	(-) AUX 1 OUTPUT*
H2/12	WHITE/RED	(+) AUX 1 OUTPUT*
H2/13	LT. GREEN/BLACK	(-) FACTORY ALARM DISARM OUTPUT
H2/14	GREEN/RED	(+) AUX 4 OUTPUT*
H2/15	VIOLET/RED	No connection
H2/16	VIOLET/YELLOW	No connection

Analog harness (H3), 18-pin white connector

* These outputs are configurable by the installer when the module is flashed, and are low current. Use a relay if necessary.

Conn./Pin	Color	Description
H3/1	LT. BLUE/RED	No connection
H3/2	WHITE/BLACK	(-) PARKING BRAKE INPUT (Manual transmission)
H3/3	GRAY	(-) HOOD INPUT
H3/4	BLACK/WHITE	(-) NEUTRAL SAFETY SWITCH INPUT (Automatic transmission)
H3/5	GRAY/BLACK	(+) GLOW PLUG INPUT
H3/6	VIOLET/WHITE	AC TACH INPUT
H3/7	DARK BLUE	(-) UNLOCK OUTPUT*
H3/8	BROWN/BLACK	(-) HORN*
H3/9	RED/WHITE	(-) TRUNK OUTPUT*
H3/10	GREEN/GRAY	(-) DOOR INPUT
H3/11	VIOLET/GRAY	(+) DOOR INPUT
H3/12	BLUE/RED	No connection
H3/13	LIGHT BLUE	(-) TRUNK INPUT
H3/14	BLUE/BLACK	No connection
H3/15	DARK GREEN	(-) LOCK OUTPUT*
H3/16	LIGHT BROWN	(+) BRAKE INPUT
H3/17	BROWN	(+) SIREN OUTPUT
H3/18	BLUE/WHITE	(-) ACTIVE WHILE RUNNING (STATUS) OUTPUT*

XCRS harness (H4), 8 thick-gauge wires (relay pack)

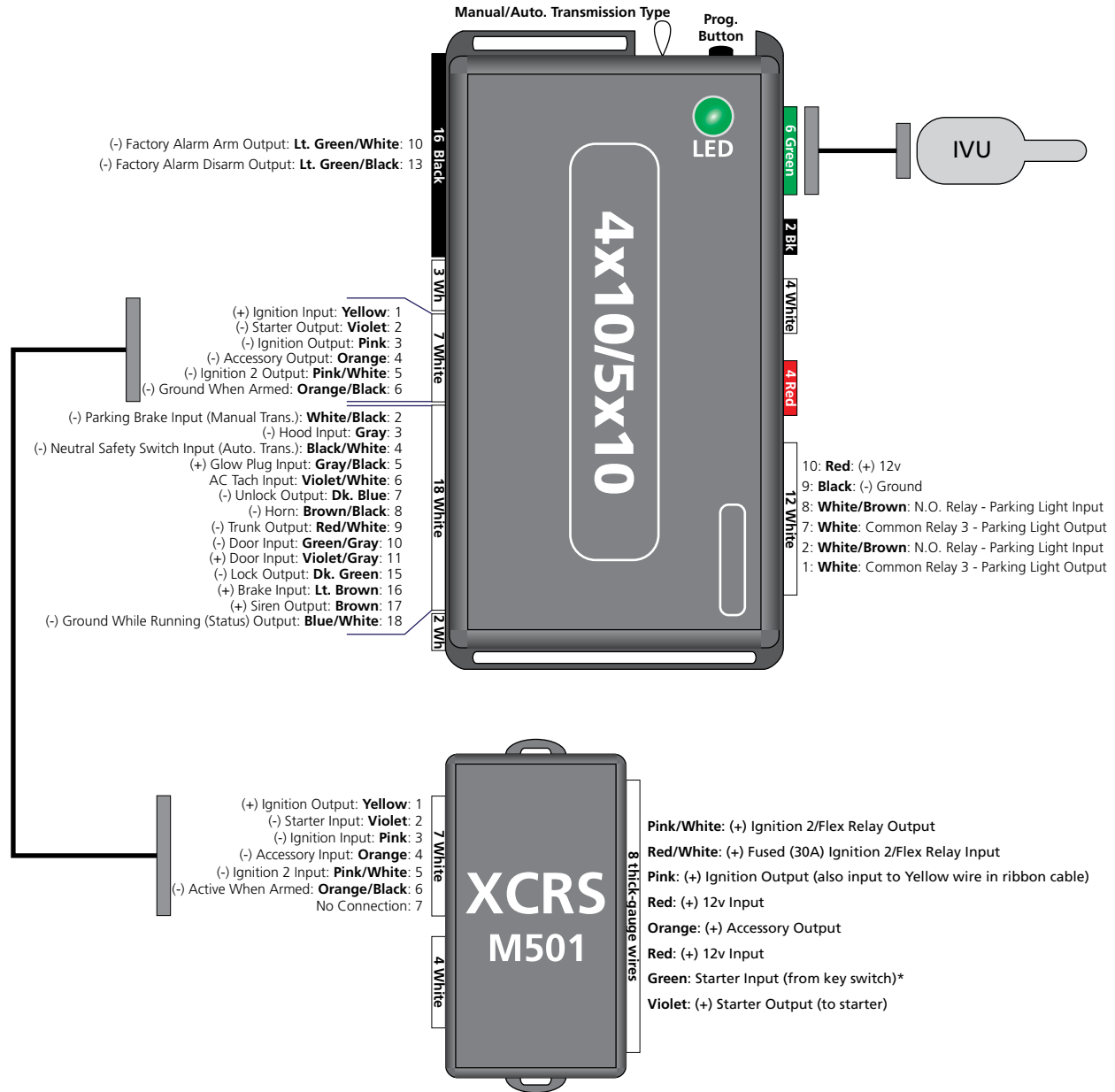* These outputs are configurable by the installer when the module is flashed.
** The Green wire is only required for starter kill and antigrind connections.

Conn./Pin	Color	Description
H4/1	PINK/WHITE	(+) IGNITION 2 / FLEX RELAY OUTPUT*
H4/2	RED/WHITE	(+) FUSED (30A) IGNITION 2 / FLEX RELAY INPUT
H4/3	PINK	(+) IGNITION OUTPUT (also input to Yellow in ribbon cable)
H4/4	RED	(+) 12 VOLT INPUT
H4/5	ORANGE	(+) ACCESSORY OUTPUT
H4/6	RED	(+) 12 VOLT INPUT
H4/7	GREEN	STARTER INPUT (from key switch)**
H4/8	VIOLET	(+) STARTER OUTPUT (to starter)

Wiring diagram

The diagram below lists the wires that are common to most of the vehicle installations.

Manual/Auto. Transmission Type

Prog. Button

LED

6 Green — IVU

2 Bk

4 White

4 Red

16 Black

(-) Factory Alarm Arm Output: **Lt. Green/White**: 10
(-) Factory Alarm Disarm Output: **Lt. Green/Black**: 13

3 Wh

7 White

(+) Ignition Input: **Yellow**: 1
(-) Starter Output: **Violet**: 2
(-) Ignition Output: **Pink**: 3
(-) Accessory Output: **Orange**: 4
(-) Ignition 2 Output: **Pink/White**: 5
(-) Ground When Armed: **Orange/Black**: 6

18 White

(-) Parking Brake Input (Manual Trans.): **White/Black**: 2
(-) Hood Input: **Gray**: 3
(-) Neutral Safety Switch Input (Auto. Trans.): **Black/White**: 4
(+) Glow Plug Input: **Gray/Black**: 5
AC Tach Input: **Violet/White**: 6
(-) Unlock Output: **Dk. Blue**: 7
(-) Horn: **Brown/Black**: 8
(-) Trunk Output: **Red/White**: 9
(-) Door Input: **Green/Gray**: 10
(+) Door Input: **Violet/Gray**: 11
(-) Lock Output: **Dk. Green**: 15
(+) Brake Input: **Lt. Brown**: 16
(+) Siren Output: **Brown**: 17
(-) Ground While Running (Status) Output: **Blue/White**: 18

2 Wh

12 White

10: **Red**: (+) 12v
9: **Black**: (-) Ground
8: **White/Brown**: N.O. Relay - Parking Light Input
7: **White**: Common Relay 3 - Parking Light Output
2: **White/Brown**: N.O. Relay - Parking Light Input
1: **White**: Common Relay 3 - Parking Light Output

4x10/5x10

XCRS M501

7 White

(+) Ignition Output: **Yellow**: 1
(-) Starter Input: **Violet**: 2
(-) Ignition Input: **Pink**: 3
(-) Accessory Input: **Orange**: 4
(-) Ignition 2 Input: **Pink/White**: 5
(-) Active When Armed: **Orange/Black**: 6
No Connection: 7

4 White

8 thick-gauge wires

Pink/White: (+) Ignition 2/Flex Relay Output
Red/White: (+) Fused (30A) Ignition 2/Flex Relay Input
Pink: (+) Ignition Output (also input to Yellow wire in ribbon cable)
Red: (+) 12v Input
Orange: (+) Accessory Output
Red: (+) 12v Input
Green: Starter Input (from key switch)*
Violet: (+) Starter Output (to starter)

* The Green wire is only required for starter kill and antigrind connections.

⚠ With the exception of the OBDII diagnostic connector, all adapters are displayed from the wire side (unless specified otherwise).

Connecting the module

⚠️ Important!

Before connecting the 4x10/5x10 module, it is important to ensure that the proper feature and function programming is selected using XpressVIP (version 4.5 or higher). Visit www.xpresskit.com to download the latest version of the application.

To make this selection:
1. Disconnect the 4x10/5x10 module from any (+)12v power source, then connect it to your computer using the **XKLoader2**.
2. Open an Internet browser and go to **www.xpresskit.com**; the programming window will be displayed automatically.
3. Follow the instructions in the pop up window that will be displayed when the module is detected.
   Note: If the latest firmware is already loaded, only the feature options will be flashed. Check the **Yes** box if you wish to flash the firmware as well.

Once the module is programmed, you can proceed with the instructions below.

Manual/Automatic transmission type

Before connecting the main power harness, the state of the yellow loop (cut/uncut) will set the modules transmission type operation:
- Uncut: Manual transmission
- Cut: Automatic transmission

By default, all modules are shipped out with the yellow loop uncut (manual transmission). It is important to disconnect and reconnect the white12-pin main power harness on the module once the loop is cut, in order to complete the transmission type switch.

When used in conjunction with SmartStart

The 4x10/5x10 module must be disconnected from any power source before SmartStart can be connected to it. Failing to do so could damage the 4x10/5x10.

To ensure that the D2D communication between 4x10/5x10 and SmartStart works properly, one of the following actions must be executed, depending on the hardware you are using:
- Rev **A** SmartStart – The brown or blue loop must be cut.
- Rev **B** SmartStart – The gray wire must be connected to a ground source.

Do **NOT** connect the 2-pin harness (on SmartStart). Power and ground will be provided by the 4x10/5x10 D2D connector.

Instructions

⚠️ Refer to "LED diagnostics and troubleshooting" on page 11 for more information and for troubleshooting purposes.

To connect the module:

1. Please ensure that the vehicle is in a safe location an cannot move forward during programming. For vehicles equipped with a manual transmission, make sure the gearshift lever is in the neutral position.

2. Connect all the harnesses to the 4x10/5x10 system, **EXCEPT** the white12-pin main power harness.

Connect all but the white 12-pin harness

4x10/5x10
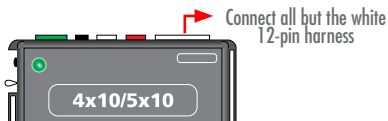
3. **Press** and **hold** the programming button, then connect the white 12-pin main power harness.

Press & Hold

&

Must be connected LAST

4x10/5x10

4. Wait until the LED turns ON solid orange and release the programming button. The LED turns ON solid green for 3 seconds, then OFF. If the LED does not turn ON, verify the power connections.

Solid orange   &   Release   &   Solid green   &   Off

5. Pair remotes. For proper instructions, see "Remote pairing" on page 24.*

Pair remotes*

6. Initialize the tachometer. For more information, see "Initializing Virtual Tach (not needed with hardwired Tach input)" and "Learning the Tach (not needed with Virtual Tach)" on page 23.

Initialize tachometer

* Your aftermarket remote may differ from the model shown in the illustrations.

LED diagnostics and troubleshooting

This section provides LED diagnostics and troubleshooting instructions for:

- "Module programming - Error codes"
- "External module synchronization"
- "Shutdown codes"
- "Active ground while running (status)"
- "D2D and W2W commands"

Module programming - Error codes

LED	Description	Troubleshooting	Comment
Flashes red x 1	CAN/J1850 not detected.	Check the Orange/Green - Orange/Brown wire connections. Wake up the data bus by turning the ignition on and try again.	Some installation types do not need this connection. Skip by pressing the programming button 5 times.
Flashes red x 2	CAN2 not detected.	Check the Tan - Tan/Black wire connections. Wake up the data bus by turning the ignition on and try again.	Some installation types do not need this connection. Skip by pressing the programming button 5 times.
Flashes red x 3	Bypass data not detected.	Check the bypass line connection. If more than one wire is used, make sure they are not inverted.	Start vehicle using the key to confirm the OEM equipment is still operational.
Flashes red x 4	Bypass processing error.	Bypass calculation failed. Reset the module and try again.	Might be caused by a bad reading in the first programming attempt or by an unknown bypass value. If a second attempt fails, connect the module to XPRESS**KIT** and call Tech Support with the module ID in hand.
Flashes red x 5	ISO 1 not detected.	Yellow/Black wire did not detect the expected signal.	Refer to the wiring installation section to check the connections.
Flashes red x 6	ISO 2 not detected.	Orange/Black wire did not detect the expected signal.	Refer to the wiring installation section to check the connections.
Flashes red x 7	MUX not detected.	Violet/Green - Violet/Brown did not detect expected voltage value.	Refer to the wiring installation section to check the connections. Use a Multimeter to check the voltage value on the wire.
Flashes red x 8	Incorrect programming sequence.	All functions and features have been skipped. Module will not perform any operation.	Too many programming sequences have been skipped by pressing the programming button 5 times. Reset module and reprogram.
Flashes red x 9	Ignition not detected.	Check the ignition input connection.	Ignition can be detected from CAN or wire input.
Flashes red x 10	VIN not supported.	Check the firmware against vehicle year and model coverage. Possible causes are that a vehicle build date or a country code has yet to be supported.	Connect module to XPRESS**KIT** and call Tech Support with the module ID in hand. If applicable, the new VIN will be added to the solution.
Flashes red x 11	BCM not supported.	Vehicle platform is not supported by the firmware.	Connect module to XPRESS**KIT** and call Tech Support with the module ID in hand. If applicable, the new VIN will be added to the solution.

External module synchronization

LED	Description	Troubleshooting	Comment
(Flashes red, red, then orange) x 10	OBDII feature not supported.	Diagnostic data bus not detected.	Some features are not supported by SmartStart. This can be caused by missing wire connections or module hardware limitation. Refer to the wiring installation section to check the connections.

11

Shutdown codes

LED	Description	Troubleshooting	Comment
Flashes red x 1	Run safe shutdown.	Used to check the installation and for trouble-shooting purposes.	Used to check for internal safety operation. Does not represent an error.
Flashes red x 2	Brake shutdown.		
Flashes red x 3	No key detected shutdown.		
Flashes red x 4	Speed detected.		

Active ground while running (status)

LED	Description	Troubleshooting	Comment
Flashes green	GROUND OUT ON (GWR) command received.	Otherwise, the Ground While Running (status) signal was lost or was never received by the module.	Commands can come from RF, D2D or W2W.
Solid red, then flashes orange	IGNITION ON command received.	Otherwise, the ignition signal was not received by the module.	In a W2W install, it will show only if the ignition input wire is used.
Flashes green quickly	START ON command received.	Otherwise, the start signal was not received by the module.	

D2D and W2W commands

LED	Description	Troubleshooting	Comment
Flashes orange x 1	LOCK command received.	If the bypass module fails to flash, it means the module did not receive the signal.	Commands can come from RF, D2D or W2W.
Flashes orange x 2	UNLOCK command received.		
Flashes orange x 3	TRUNK command received.		
Flashes orange x 4	AUX1 command received.		
Flashes orange x 5	AUX2 command received.		

Adjusting the shock sensor (5x10 only)

The shock sensor sensitivity can be adjusted by using a screwdriver to turn the potentiometer.

Note: It is important to choose an appropriate location to mount the sensor. Attaching the sensor to an existing vehicle wiring harness may result in poor shock detection.

Adjusting the sensor

DIA-185
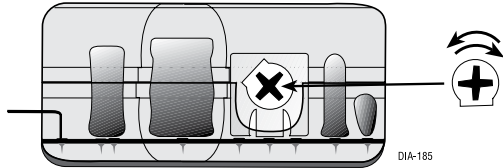
1. Disarm the system, turn the ignition Off.
2. With the sensor mounted in its permanent location, locate the potentiometer on the shock sensor module and using a screwdriver:
   - Turn the potentiometer clockwise for increased sensitivity or
   - Turn it counterclockwise for decreased sensitivity

   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.

Note: This adjustment cannot be performed using the remote control.

Testing the sensor

If testing while the system is armed:
1. Wait at least 15 seconds after arming before impacting the vehicle.
2. Cycle the ignition On/Off regularly to reset the Nuisance Prevention Circuitry® (NPC) feature.

Programmable features

⚠ The following requirements are mandatory for the successful configuration of the programmable features: an XKLoader2 module, the XpressVIP application (version 4.3 or higher), and a web connection.

Programmable outputs

The programmable outputs can be programmed to provide the following types of functions:

- Factory Alarm Arm
- Active When Armed
- Factory Alarm Disarm
- Lock
- Active When Locked
- Unlock
- 2nd Unlock
- Active When Unlocked by User 2
- Trunk Release
- Aux 1
- Aux 2
- Aux 3
- Aux 4
- Ground While Running

- Ground While Running (5 seconds)
- Pulse Before Starting
- Smart Key Control (for PTS)
- Pulse After Startup
- Pulse After Ignition Off (pulse duration = 1 min.)
- Accessory
- Ignition
- Starter
- Parking Lights
- Rear Defroster
- Dome Light
- Horn
- Active When Alarm Triggered
- Anti-grind (H3/6 - Orange/Black only)

Output descriptions

Output	Description
Factory Alarm Arm	Sends a pulse every time the remote starter shuts down or the doors are locked using the remote.
Active When Armed	Supplies an output as long as the system is armed. This output ceases as soon as the system is disarmed.
Factory Alarm Disarm	Sends a pulse every time the remote starter is activated or the doors are unlocked.
Lock	Provides a lock pulse (see the Feature Programming for Lock).
Active When Locked	Supplies an output as long as the module is locked.
Unlock	Provides an unlock pulse (see the Feature Programming for Unlock).
2nd Unlock	Provides a pulse on 2nd Unlock press from remote (useful for progressive locks).
Active When Unlocked by User 2	Supplies an output as long as the module is unlocked by remote 2 until the module is locked again.
Trunk Release	When the system receives the AUX/Trunk command for longer than 1.5 seconds, the wire will supply an output for a minimum of 0.8 seconds and will continue until the AUX/Trunk command ceases.
Aux 1	Provides an output each time the AUX1 button is pressed (see the Feature Programming for AUX1).
Aux 2	Provides an output each time the AUX2 button is pressed (see the Feature Programming for AUX2).
Aux 3	Provides an output each time the AUX3 button is pressed (see the Feature Programming for AUX3).
Aux 4	Provides an output each time the AUX4 button is pressed (see the Feature Programming for AUX4).
Ground While Running	Supplies an output as soon as the module begins the remote start process. The output will be activated before the ignition output is turned on, and deactivated after the ignition is turned off.
Ground While Running (5 sec)	Supplies an output for 5 seconds as soon as the module begins the remote start process.
Smart Key Control (for PTS)	Supplies one pulse after the module ends the remote start process when it turns off. This function is very useful for cars equipped with a Push-to-Start system.
Pulse After Startup	Supplies a 1-second output immediately following the end of the starter output during remote start.

Output	Description
Pulse After Ignition Off (pulse duration = 1 min.)	Supplies a 1-minute output every time the ignition is turned off using the key.
Accessory	Controls an additional Accessory wire on the vehicle.
Ignition	Controls an additional Ignition wire on the vehicle.
Starter	Controls a second Starter wire on the vehicle.
Parking Lights	Provides an output for a connection to the vehicle lighting system.
Rear Defroster	Provides an output each time a Defroster request is received or the Defroster button is pressed (depending on the remote control model). See the Feature Programming for Defroster).
Dome Light	Supplies a 30-second output after a Disarm command is received (see the Feature Programming for Dome Light). Additionally, this wire will pulse periodically during an alarm trigger.
Horn	Provides an output for the Horn (see the Feature Programming for Horn).
Active When Alarm Triggered	Supplies an output as long as the module security is triggered.
Anti-Grind	Supplies an output as long as the system is armed and/or remote started.

Important!

All outputs (except Relay 1, Relay 2 and Flex Relay) can only supply 200 mA. Connecting directly to a solenoid, motor, or other high-current device will cause it to fail. If you use it with a high-current device, the output must be set to an internal relay (Relay 1, Relay 2, Flex Relay) or connected to an additional external relay.

Programmable outputs – Default values

Harness/Pin	Wire Color	Default Function	Notes
H2/12	(+) White/Red	Aux 1	Allows for positive and/or negative control to low-current devices from a single function
H2/11	(-) White/Violet	Aux 1	
H4/1	(+) Pink/White	Ignition 2	Flex relay output. The default value is Ignition 2. Can be configured as Accessory 2 or Start 2
H3/8	(-) Brown/Black	Horn	
H3/18	(-) Blue/White	Active when running	
H1/Relay 1	See H1 table on page 6	N/A	
H1/Relay 2	See H1 table on page 6	N/A	

Feature menus

Features can only be programmed via the web tool. See "Connecting the module" on page 9 for more information.

Menu 1 - Main module config

The first menu is divided into three (3) sections:
- Security features
- Remote start features
- System features

Security features

⚠ Note that the availability of features and their predetermined default values is in direct relation to the firmware you are using.

Default settings are in bolder type.

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	System Arming mode	**Active**	Passive Arm - No Lock	Passive Arm & Lock	Auto Re-arm - No Lock	Auto Re-arm & Lock
2	Panic Mode	**On**	Ignition Off only	Off		
3	Confirmation Chirps	**On - Warn Chirps On**	On - Warn Chirps Off	Off - Warn Chirps On	Off - Warn Chirps Off	
4	Horn Function	**Trigger & Panic Only**	Chirp 20 mS	Chirp 30 mS	Chirp 40 mS	Chirp 50 mS
5	Override Pulse Count	**1**	2	3	4	5
6	Sensor Icon Type	None	**Shock**	Field Disturbance	Tilt Sensor	Glass Break (5)/ Ultrasonic (6)
7	Trigger/Panic Duration (seconds)	Options: 1 to 180 seconds. The default value is **30 seconds**.				
8	One-time Bypass	On	**Off**			
9	NPC - Nuisance Prevention Circuitry	**On**	Off			
10	Door Trigger Error Chirp	Off	**On**			

Note: Features can only be programmed via the web tool. See "Connecting the module" on page 9 for more information.

1	System Arming mode	1.	**Active: the transmitter must be used to arm the system.**
		2.	Passive Arm - No Lock: after exiting the vehicle the system will automatically arm and the doors will NOT lock.
		3.	Passive Arm & Lock: after exiting the vehicle the system will automatically arm and lock the doors.
		4.	Auto Re-arm - No Lock: if the vehicle is not entered after receiving a disarm command, the system will automatically rearm and the doors will NOT lock.
		5.	Auto Re-arm & Lock: if the vehicle is not entered after receiving a disarm command, the system will automatically rearm and lock the doors.
2	Panic Mode	1.	**On: panic output can be activated at any time.**
		2.	Ignition Off only: output can be activated only when the ignition is off.
		3.	Off: output is disabled.

3	Confirmation Chirps	1. **On - Warn Chirps On: arm, disarm, and sensor warn-away chirps are active.** 2. On - Warn Chirps Off: arm and disarm chirps are active; warn-away chirps are disabled. 3. Off - Warn Chirps On: arm and disarm chirps are disabled; warn-away chirps are active. 4. Off - Warn Chirps Off: arm, disarm, and sensor warn-away chirps are disabled.
4	Horn Function	1. **Trigger & Panic Only: horn output will pulse only during full trigger events.** 2. Siren Function 20/30/40/50ms: output will emulate the siren output with the predefined output timing to compensate for OEM horn inefficiency.
5	Override Pulse Count	1-5: sets the number of times the Control button should be pressed (1-5) to override the alarm system. *The default value is 1.
6	Sensor Icon Type	Sets the Zone 2 text or icon to be displayed for Warn-Away and Full Trigger activations: 1. None 2. **Shock** 3. Field Disturbance 4. Tilt Sensor 5. Glass Break 6. Ultrasonic
7	Trigger/Panic Duration (seconds)	1 to 180 seconds: sets the Full Trigger and Panic mode output duration seconds, with a maximum of 120 seconds. The default value is **30 seconds**.
8	One-time Bypass	1. On: this feature will disable Passive Arming once and, if armed by remote control it will disable the Comfort Closure and Aux outputs linked to arming. 2. **Off: feature NOT available.**
9	NPC - Nuisance Prevention Circuitry	1. **On: sensors that trigger excessively will be disabled until they have been stable for more than one hour.** 2. Off: sensors will NOT be disabled if triggered excessively.
10	Door Trigger Error Chirp	1. Off: an active door trigger when arming will NOT create an alert output. 2. **On: if the door trigger is active when arming, the siren will emit a chirp and a message will be sent to the 2-way remote control as an alert.**

Remote start features

⚠ Note that the availability of features and their predetermined default values is in direct relation to the firmware you are using.

Default settings are in bolder type.

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	Engine Checking Mode	**Virtual Tach**	Voltage	Off	Tachometer	
2	Cranking Time (seconds)	**0.6 sec.**	0.8 sec.	1.0 sec.	1.2 sec.	1.4 sec. (5)/ 1.6 sec. (6)/ 1.8 sec. (7)/ 2.0 sec. (8)/ 4.0 sec. (9)
3	Activation Pulse Count	**1**	2	3		
4	Diesel Delay Type/ Duration	**Wait for Glow-plug input**	1 to 90 seconds.			
5	Accessory Output During Diesel Start Delay	**On**	Off			
6	Turbo Mode Runtime	Turbo Mode disable	1 to 10 minutes. The default value is **3 minutes**.			
7	Remote Start Runtime (minutes)	Options: 1 to 60 minutes. The default value is **12 minutes**.				
8	SmartStart/Timer Mode Runtime (minutes	Options: 1 to 16 minutes. The default value is **3 minutes**.				
9	SmartStart/Timer Mode Start Count	Options: 1/2/3/4 to 24 (Starts) in increments of 2. The default value is **1 start**.				

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
10	Timer Mode Start Interval (Hours)	Options: 1/2/3/4 to 24 in 2 hour increments. The default value is **24 hours**.				
11	SmartStart High Temperature Threshold	Options: +40 F to +130 F in 10 degree increments. The default value is **OFF**.				
12	SmartStart Low Temperature Threshold	Options: -20 F to +70 F in 10 degree increments. The default value is **OFF**.				
13	SmartStart Low Battery Threshold (Volts)	Options: 9.0V to 12.5V in 0.5V increments. The default value is **11.0V**.				
14	Virtual Tach Fine Tune (Milliseconds)	**Not Initialized**	50mS - 1000mS			
15	Remote Start SafeLock	**Off**	Safe Lock On	Smart Safe Lock On		

Note: Features can only be programmed via the web tool. See "Connecting the module" on page 9 for more information.

1   Engine Checking Mode
1. **Virtual Tach: battery voltage drop/rise during cranking determines when the starter output is released. During runtime, constant voltage level is monitored to determine if the engine is running.**
2. Voltage: starter output during cranking is a programmed duration (Set in Cranking Time). During runtime, constant voltage level is monitored to determine if the engine is running.
3. Off: starter output during cranking is a programmed duration (Set in Cranking Time). The remote starter will keep the ignition/accessories active for the programmed runtime whether the engine is running or not.
4. Tachometer: tachometer input signal during cranking and runtime to determine when the starter output is released and if the engine is running.

2   Cranking Time (seconds)
0.6/0.8/1.0/1.2/1.4/1.6/1.8/2.0/4.0 seconds: determines the starter output duration during cranking for the 'Voltage' and the 'Off' Engine Checking Mode options. The default value is **0.6**.

3   Activation Pulse Count
1/ 2 pulses: sets the number of remote control commands received or Activation Input required to enable and disable remote start. The default value is **1**.

4   Diesel Delay Type/ Duration
1. **Wait for Glowplug input: (-) input on the Blue/Red (CN2/2) WTS wire will delay the starter output until the input ceases.**
2. Timed 15/30/45 seconds: delays the starter output corresponding to the selected option, the WTS wire does not function.

5   Accessory Output During Diesel Start Delay
1. **On: Accessory output will be ON during diesel-start delay.**
2. Off: output will be OFF during diesel-start delay.

6   Turbo Mode Runtime
1. 0 – Turbo Mode disable: turbo mode is NOT available.
2. 1 to 10 minutes – On: turbo mode is available and, when activated, the engine will run for the duration set according to the selected option. The default value is **3 minutes**.

7   Remote Start Runtime (minutes)
1 to 60 minutes: sets engine runtime during normal remote start operations. The default value is **12 minutes**.

8   SmartStart/Timer Mode Runtime (minutes
1 to 16 minutes: sets the runtime when the engine is started by the Timer Mode and SmartStart features. The default value is **3 minutes**.

9   SmartStart/Timer Mode Start Count
1/2/3/4 to 24 (Starts) in increments of 2: sets the number of times the engine will be started by the Timer Mode and SmartStart features. The default value is **1 start**.

10   Timer Mode Start Interval (Hours)
1/2/3/4 to 24 in 2 hour increments: sets the number of hours between engine starts by the Timer Mode and SmartStart features. The default value is **24 hours**.

11   SmartStart High Temperature Threshold
+40 F to +130 F in 10 degree increments: sets the high temperature threshold required for SmartStart to turn the engine on. The default value is **OFF**.

12   SmartStart Low Temperature Threshold
-20 F to +70 F in 10 degree increments: sets the low temperature threshold required for SmartStart to turn the engine on. The default value is **OFF**.

13   Smart Start Low battery (Volts)
OFF, 9V to 12.5V in 0.5V increments: sets the low battery level threshold required for SmartStart to turn the engine on. The default value is **11.0V**.

| 14 | Virtual Tach Fine Tune (Milliseconds) | 1. **0 - Not Initialized: VirtualTach is not initialized.**
2. 50mS - 1000mS: adds or subtracts crank time in VirtualTach mode in order to overcome engine types that under- or over-crank on the first start attempt. |
| 15 | Remote Start SafeLock | 1. **Off: the Door lock and Factory Alarm Re-arm outputs will maintain the current status (locked/ unlocked) during remote start and after shut down.**
2. Safe Lock On: the Door lock and Factory Alarm Re-arm outputs will arm/lock the vehicle during remote start and after shutdown.
3. Smart Safe Lock On: after start/stop sequences the Door lock and Factory Alarm Re-arm remain in the same state as at the time of start sequence.
   • Armed at time of start: the Door lock and Factory Alarm Re-arm outputs will arm/lock the vehicle during remote start and after shutdown.
   • Disarmed at time of start: Door lock output is controlled during start/stop sequences, while Factory Alarm Re-arm output is not. |

System features

⚠ Note that the availability of features and their predetermined default values is in direct relation to the firmware you are using.

Default settings are in bolder type.

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	Ignition Controlled Locks	**Off**	Lock & Unlock	Lock Only	Unlock Only	
2	Door Lock Pulses	**Single**	Double Unlock Only	Double Lock Only	Double Lock & Unlock	
3	Door Lock Output Duration (seconds)	**0.8sec.**	3.5sec.	0.4 sec.		
4	2nd Unlock	**Off**	On w/delayed Ignition Control Output	On w/immediate Ignition Control Output		
5	Comfort Closure	**No Comfort Closure**	Comfort Closure 1	Comfort Closure 2		
6	Hood Trigger Type	**Normally Open**	Normally Closed			
7	Ignition Controlled Domelight	**Off**	On			
8	OEM Alarm Disarm w/ Aux-Trunk	**Off**	On			
9	OEM Alarm Disarm Output	**With Unlock**	Before Unlock	Remote Start Only		
10	OEM Alarm Disarm Pulses	**1**	2			
11	Aux 1 Icon	**Trunk**	Window	Sunroof	Audio	Lights (5)/ Left door (6)/ Right door (7)/ Rear hatch (8)/ Timed (9)/ Pulsed (10)/ Garage door (11)
12	Aux 1 Output Type	**Validity**	Latch	Latch/reset/Ignition	Timed	Off
13	Aux 1 Linking	**No Linking**	Link to Arm	Link to Disarm	Link to Arm/ Disarm	Link to Remote Start Only
14	Aux 1 Timed Output	Options: 1 to 90 seconds. The default value is **30 seconds**.				
15	Aux 2 Icon	Refer to Aux 1 Icon.				
16	Aux 2 Output Type	Refer to Aux 1 Output Type.				

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
17	Aux 2 Linking	Refer to Aux 1 Linking.				
18	Aux 2 Timed Output	Refer to Aux 1 Timed Output.				
19	Aux 3 Icon	Refer to Aux 1 Icon.				
20	Aux 3 Output Type	Refer to Aux 1 Output Type.				
21	Aux 3 Linking	Refer to Aux 1 Linking.				
22	Aux 3 Timed Output	Refer to Aux 1 Timed Output.				
23	Aux 4 Icon	Refer to Aux 1 Icon.				
24	Aux 4 Output Type	Refer to Aux 1 Output Type.				
25	Aux 4 Linking	Refer to Aux 1 Linking.				
26	Aux 4 Timed Output	Refer to Aux 1 Timed Output.				
27	Aux/Trunk Icon	Refer to Aux 1 Icon description. The default value is **Trunk**.				
28	Aux/Trunk Output Type	**Validity**	Off			
29	Remote keypad unlocking	**Off**	On			
30	Transmitter Programming	**Unlocked**	Locked			
31	OEM Alarm Disarm With Unlock	**Disable**	Enable			

Note: Features can only be programmed via the web tool. See "Connecting the module" on page 9 for more information.

1	Ignition Controlled Locks	1.	**Off: door lock/unlock outputs will NOT be activated when ignition is turned on/off.**
		2.	Lock & Unlock: lock/unlock outputs will be activated when ignition is turned on/off.
		3.	Lock Only: lock output will be activated when ignition is turned on.
		4.	Unlock Only: unlock output will be activated when ignition is turned off.
2	Door Lock Pulses	1.	**Single: door lock/unlock outputs will pulse once.**
		2.	Double Unlock Only: unlock output only will pulse twice.
		3.	Double Lock Only: lock output only will pulse twice.
		4.	Double Lock & Unlock: lock/unlock outputs will pulse twice.
3	Door Lock Output Duration	1.	**0.8sec.: door lock output pulses will be 800mS in duration.**
		2.	3.5sec.: lock pulses will be 3.5 seconds in duration.
		3.	0.4 sec.: lock pulses will be 400mS in duration.
4	2nd Unlock	1.	**Off.**
		2.	On w/delayed Ignition Control Output: for ignition controlled unlocking this output will pulse 0.8 seconds after the first unlock.
		3.	On w/immediate Ignition Control Output: for ignition controlled unlocking this output will pulse at the same time as first unlock.
5	Comfort Closure	1.	**No Comfort Closure: Comfort Closure is deactivated when arming.**
		2.	Comfort Closure 1: door lock pulse (or 2nd pulse for double pulses) will remain on for 20 seconds.
		3.	Comfort Closure 2: 800mS following the end of the door lock pulse (or 2nd pulse for double pulses); the door lock output will turn on again for 20 seconds.
6	Hood Trigger Type	1.	**Normally Open: vehicles with a hood switch that rests at ground when the hood is OPEN.**
		2.	Normally Closed: vehicles with a hood switch that rests at ground when the hood is CLOSED.
7	Ignition Controlled Domelight	1.	**Off: dome light output will NOT be activated when the ignition is turned off.**
		2.	On: dome light output will be activated when the ignition is turned off. It will be activated for 30 seconds, until the alarm is armed or until the ignition is turned on.
8	OEM Alarm Disarm w/ Aux-Trunk	1.	**Off: OEM Alarm Disarm wire will NOT pulse when the Aux/Trunk output is activated.**
		2.	On: OEM Alarm Disarm wire will pulse as programmed when the Aux/Trunk output is activated.

9	OEM Alarm Disarm Output	1. **With Unlock: OEM Alarm Disarm wire will pulse as programmed concurrently with unlock wire.**
		2. Before Unlock: OEM Alarm Disarm wire will pulse as programmed before the unlock wire.
		3. Remote start only: OEM Alarm Disarm wire will pulse as programmed during remote start only.
10	OEM Alarm Disarm Pulses	1. **1: OEM Alarm Disarm wire will pulse once per operation.**
		2. 2: OEM Alarm Disarm wire will pulse twice per operation.
11	Aux 1 Icon	Sets the Accessory animation to be displayed on the screen when the Aux 1 output is activated/deactivated:

1. **Trunk**		7. Right door
2. Window		8. Rear hatch
3. Sunroof		9. Timed
4. Audio		10. Pulsed
5. Lights		11. Garage door
6. Left door		

12	Aux 1 Output Type	1. **Validity: when the Aux command is received the wire will turn and remain on until the command ceases.**
		2. Latch: when the command is received the wire will turn and remain on until the command is received again.
		3. Latch/reset/Ignition: when the command is received the wire will turn and remain on until the command is received again or the ignition is turned on/off.
		4. Timed: when the command is received the wire will turn on for the programmed time duration (default is 30 seconds).
		5. Off: the output will not be activated for a remote control command; use this option when the Aux command controls an external device, such as a garage door module.
13	Aux 1 Linking	1. **No Linking: Aux output will NOT be activated for a remote control command.**
		2. Link to Arm: output will be activated for the Arm command.
		3. Link to Disarm: output will be activated for the Disarm command.
		4. Link to Arm/Disarm: output will be activated for the Arm/Disarm commands.
		5. Link to Remote Start Only: output will be activated for any remote start activation.
14	Aux 1 Timed Output	Sets the output duration in seconds, with a maximum of 90 seconds. *The default value is **30 seconds**.
15	Aux 2 Icon	Refer to the Aux 1 Icon description.
16	Aux 2 Output Type	Refer to Aux 1 Output Type description.
17	Aux 2 Linking	Refer to Aux 1 Linking description.
18	Aux 2 Timed Output	Refer to Aux 1 Timed Output description.
19	Aux 3 Icon	Refer to the Aux 1 Icon description.
20	Aux 3 Output Type	Refer to Aux 1 Output Type description.
21	Aux 3 Linking	Refer to Aux 1 Linking description.
22	Aux 3 Timed Output	Refer to Aux 1 Timed Output description.
23	Aux 4 Icon	Refer to the Aux 1 Icon description.
24	Aux 4 Output Type	Refer to Aux 1 Output Type description.
25	Aux 4 Linking	Refer to Aux 1 Linking description.
26	Aux 4 Timed Output	Refer to Aux 1 Timed Output description.
27	Aux/Trunk Icon	Refer to Aux 1 Icon description. The default value is **Trunk**.
28	Aux/Trunk Output Type	1. **Validity**
		2. Off
29	Remote keypad unlocking	1. **Off: no message is sent.**
		2. On: a message telling the 2-way remote control to unlock the keypad is sent each time the vehicle ignition is turned off.
30	Transmitter Programming	Locks/unlocks the user's ability to enter the HHU/Reset menu and manually change any functions using the Control Center. The default value is **Unlocked**.
31	OEM Alarm Disarm With Unlock	1. **Disable**
		2. Enable

OEM FOB Control (3X Lock Start)

⚠️ Note that the availability of features and their predetermined default values is in direct relation to the firmware you are using.

Default settings are in bolder type.

Menu Item	Feature	Opt. 1	Opt. 2	Opt. 3	Opt. 4	Opt. 5+
1	Enabled	**Check box selected for Enabled**	Check box not selected for Disabled			
2	Timeout	Options: 2 to 10 seconds. The default value is **4 seconds**.				

Note: Features can only be programmed via the web tool. See "Connecting the module" on page 9 for more information.

1	Enabled	1. **Enabled** 2. Disabled
2	Timeout	2 to 10 seconds: sets the low temperature threshold required for SmartStart to turn the engine on. The default value is **4 seconds**.

Menu 2 - Remote control config

⚠️ Note that the availability of features and their predetermined default values is in direct relation to the firmware and remote you are using.

This page allows you to configure the:
• Remote commands
• Programming outputs

Initializing Virtual Tach (not needed with hardwired Tach input)

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 Reset and Deletion section of this guide.

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. Use the VirtualTach Fine tune feature to adjust the starter output time in 50mS increments to compensate for such an occurrence.

Learning the Tach (not needed with Virtual Tach)

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

Note: When the tachometer is programmed, the main unit automatically enters the Tachometer engine checking mode.

Remote start shutdown/startup diagnostics

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 failure. 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), if this is not done the unit will 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 Control button (on the Control Center).
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	Runtime expired.
2	Over-rev shutdown.
3	Low or no RPM.
4	Transmitter shutdown (or optional push button).
5	(+) Brake shutdown.
6	(-) Hood shutdown
7	Time mode/Turbo mode/Manual mode error.*
8	Neutral safety shutdown.
9	Low battery (voltage mode).
10	Alarm triggered.**
11	Wait-to-start input timed out.

*   Time mode error: Ignition is on or shutdown in put 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.
** Alarm was triggered during remote start sequence.

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

Parking Light Flashes	Definition
5	Brake wire is active.
6	Hood pin wire is active.
7	Manual transmission mode is enabled and not initialized.
8	Neutral safety wire is not connected to ground or the neutral safety switch is off.

Remote pairing

For information on how to pair a specific remote, please refer to its corresponding owner documentation, which can be found on www.directechs.com.

Reset/delete remotes from memory

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 (in the case of a 5x10 system, Door Input must be detected).
2. Turn the ignition to the ON position.
3. Within 10 seconds, press and release the Control 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.
   Virtual Tach Reset: Deletes all previously learned values for Virtual Tach, and on the next remote start sequence the unit begins virtual tach initialization.
4. Once you have selected the function step, press the Control button once more and hold it. The LED flashes and the siren chirps to confirm the selected functional step. The Control button can be released.
5. In the case of a reset operation, press any button on the remote control. The unit chirps to confirm that the feature has been successfully reset.

Once the feature is reset, turn the ignition off or close the door to exit the procedure.

Long-term event history
The system stores the last two full alarm triggers in memory. Each new trigger is added to the history while the oldest are deleted. Trigger history is reported in order of newest to oldest. To access long term event history:
1. With the ignition Off, press and hold the Control button (on the Control Center).
2. Turn the ignition On.
3. Release the Control button.
4. Within 5 seconds, press and release the Control button. The status LED flashes in groups indicating the triggered zones 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 status LED flashes used by the system to identify a particular type of input.

Zone	Description
1	Trunk trigger.
2	Shock sensor trigger.
3	Door trigger.
4	Not used.
5	Ignition on trigger.
6	Hood trigger.

Troubleshooting: Alarm

Issue	Troubleshooting
Shock sensor doesn't trigger the alarm.	Has the Nuisance Prevention Circuitry® (NPC) system been triggered? If so, you hear 5 chirps when disarming. To check this, turn the ignition key on and off to clear the NPC® memory, and then retest the shock sensor.
Door input does not immediately trigger full alarm.	This is a normal operation to allow the user time to disarm before a constant siren output in case of an accidental door trigger.
Closing the door triggers the system, but opening the door does not.	Have you correctly identified the type of door switch system? This happens often when the wrong door input has been used.
Door input does not respond with the progressive trigger, but with immediate full alarm.	Does the Status LED indicate that the trigger was caused by the shock sensor? (See Table of Zones section of this guide.) The shock sensor, if set to extreme sensitivity, may be detecting the door unlatching before the door switch sends its signal. Reducing the sensitivity can solve this problem.
Door locks operate backwards.	This unit has easily-reversed lock/unlock outputs. Recheck wire connections to see if you have reversed these.

Troubleshooting: Remote start

Issue	Troubleshooting
The remote start will not remote start the vehicle	1. Check remote startup diagnostics. 2. Is the neutral safety switch installed and turned on? Is the neutral safety wire grounded? 3. If the vehicle has an automatic transmission, make sure the remote start is programmed for Automatic Transmission mode. 4. Is the remote programmed to the system? 5. Check the harnesses and their connections. Make sure that the harnesses are completely plugged into the remote start module. Make sure there are good connections to the vehicle wiring. 6. Check voltage and fuses on all wires and harnesses with fuse holders.
The remote start will activate, but the starter never engages.	1. Check for voltage on the starter output wire two seconds after the remote start becomes active. If there is voltage present, skip to Step 8. If there is not voltage present, advance to Step 2. 2. Check all fuses. 3. If the wait-to-start wire is detecting ground upon activation, the starter will not crank. 4. Is the tach wire connected? If so disconnect it and remote start the vehicle to see if the starter output wire sends out voltage. If you get voltage you will need to go to an alternate tach source, the tach wire you are currently on has a voltage spike upon ignition power up which can cause the remote start to not send out the crank voltage. 5. Is the vehicle a Chrysler or GM with a multiplexed starter wire? The vehicle will not crank if the resistance is incorrect on the multiplexed accessory/starter wire. 6. Is the vehicle a GM? If so the 2nd accessory needs to be powered up on some of the vehicles for the vehicle to crank. 7. If this is a manual transmission vehicle, the clutch will need to be bypassed (see tech tip # 10000 at www.directechs.com). 8. Make sure the starter output wire is connected on the starter side of any optional starter kill/anti-grind relay. 9. Does the vehicle have an immobilizer? Some immobilizer systems will not allow the vehicle to crank if active. 10. Check connections. The heavy gauge remote start input wires on the relay pack should have a solid connection. "T-taps" or "scotch locks" are not recommended.
The vehicle starts, but immediately dies.	1. Does the vehicle have an immobilizer? The vehicle's immobilizer can cut the fuel and/or spark during unauthorized starting attempts. 2. Is the remote start programmed engine checking off or voltage sense? If so, the crank time may not be set high enough. Voltage sense will not work on some vehicles. 3. Is the remote start in tach mode? If so has the tach been programmed to the system? 4. Check diagnostics. Sometimes a shutdown will become active during cranking or just after cranking.
The vehicle starts, but the starter keeps running.	1. Is the system programmed for engine checking off or voltage sense? When programmed for either of these features, the engine cranks for the pre programmed crank time regardless of how long it takes for the vehicle to actually start. Adjust to a shorter cranking time. 2. Was the Tach Learn successful? The LED must light solid and bright to indicate a successful learn. 3. Make sure that there is a tach signal at the tach input wire of the remote start. If there is not a tach signal, recheck the connection to the vehicle's tach wire and make sure the wire is not broken or shorted to ground leading to the remote start. 4. Is an ignition or accessory output wire connected to the starter wire of the vehicle? Verify the color of the starter wire in the vehicle and confirm that an ignition or an accessory output is not connected to that wire.
The vehicle starts, but will only run for 10 seconds.	1. Is the remote start programmed for voltage sense? If this does not work, a tach wire should be used. 2. Check shutdown diagnostics.
The climate control system does not work while the unit is operating the vehicle.	1. Either the wrong accessory wire is being energized or more than one ignition or accessory wire must be energized in order to operate the climate control system. 2. If the vehicle has an electronic climate control system some will reset when the key is turned off and then back on, unfortunately this is a function of the vehicle and cannot be bypassed.

Issue	Troubleshooting
MTS - Manual Transmission Start diagnostics.	When enabling MTS, if you get a failure notification from the remote or the vehicle fails to remain started check for following: • Tachometer not connected or programmed. • Parking brake set status is not known. The parking brake must be set to enable MTS. Connect the parking brake input wire to the vehicle parking brake wire or use the parking brake data message. • Foot must be off the brake when activating the MTS mode on the remote. • Is the door open when enabling the MTS mode? If so this would cause the unit to enter Pit Stop Mode and the remote start will continue to run when arming/locking the system. • Is the door input connected? The system needs to see a door open then close after initiating the remote start. • Does the vehicle have a delayed dome light? If you are connected to the dome light wire and the dome light is staying on after arming/locking the system, the system can exit the MTS mode. • Make sure the neutral safety switch is plugged in and turned on, and that the neutral safety wire is grounded.
MTS mode exiting diagnostics.	If the remote start has entered the MTS mode but exits the mode after the system is armed/locked. Check these for possible causes: • The vehicle door has been opened or the security system has been triggered in your absence. • Does the vehicle have a delayed dome light circuit or does the dome light come on when the ignition is shut off? If the door trigger input wires are connected, you may need to go to the independent door inputs of the vehicle. • If the door trigger input wire is connected to the dome light wire in the vehicle and cannot connect the system to the individual door inputs of the vehicle due to it having normally closed door inputs, you can use Tech Tip # 1921 at www.directechs.com to interface with these types of circuits. • If the parking brake input wire connected to the vehicles parking brake wire loses ground when ignition is turned off or after a certain amount of time, there is no analog work around. The data parking brake messages must be used. • If the contacts of the vehicle's parking brake switch is not adequate when the brake is set, clean the contacts or replace the switch.

Glossary of terms

Document terminology	
4x10	Remote start system.
5x10	Remote start and security system.
Analog	Non digital installation type.
Aux	Auxiliary.
Control Button	A small push button located on your system's control center. It is used to override (disarm) the alarm when a remote is not available or to enter or exit Valet Mode.
Control Center	The control center contains the system's radio-frequency antenna, the control button, and the Status LED. For maximum remote-control range, the control center is usually located at the top of the windshield, centered near the rear-view mirror.
Control Module	The "brain" of your system. Usually hidden underneath the dash area of the vehicle. It houses the microprocessor which monitors your vehicle and controls all of the system's functions.
Companion Remote (1-way Remote Control)	A hand-held, remote control which operates the various functions of your system but does not provide message confirmation.
Config Wizard	Web tool used to program the control module.
Digital	Vehicle-specific installation type.
Flex Relay	Relay that can be programmed for Ignition, Accessory or Start.
IVU	Control Center.
LED	Light Emitting Diode – An electronic semiconductor device that emits light when an electric current passes through it.
LCs	Liquid Crystals.
LCD	Liquid Crystal Display – An electronic visual display that uses the light modulating properties of liquid crystals (LCs). LCs do not emit light directly.
MTS	Manual Transmission Mode.
N.C.	Normally Closed.
N.O.	Normally Opened.
Responder LE (2-way Remote Control)	A hand-held LED remote control which operates the various functions of your system and receives messages as well as pages from it, and then displays them via small LEDs mounted on the remote.
Responder LC (2-way Remote Control)	A hand-held LCD remote control which operates the various functions of your system and receives messages as well as pages from the it, and then displays them via small LEDs mounted on the remote.
Responder One (Remote Control)	A hand-held 1-button remote control which operates the various functions of your system remotely.
RS	Remote Start.
RSS	Remote Start and Security.
Shutdown Toggle Switch	Normally located near the control module or mounted around the dashboard, this Shutdown switch is used to disable the remote start feature.
Status LED	A light used to indicate the status of your system. It is located on your system's Control Center.

Document terminology	
Transmit LED	Indicator on the remote control, it turns on when a button is pressed or communication is active.
VIP	A flash utility that can be used to verify and save firmware images onto the control module.
XKLoader2	Device used to link your control module to the USB port of a computer.

Limited lifetime consumer warranty

Directed Electronics. ("Directed") promises to the original purchaser to repair or replace (at Directed's election) with a comparable reconditioned model any Directed unit (hereafter the "unit"), excluding without limitation the siren, the remote transmitters, the associated sensors and accessories, which proves to be defective in workmanship or material under reasonable use during the lifetime of the vehicle provided the following conditions are met: the unit was purchased from an authorized Directed dealer, the unit was professionally installed and serviced by an authorized Directed dealer; the unit will be professionally reinstalled in the vehicle in which it was originally installed by an authorized Directed dealer; and the unit is returned to Directed, shipping prepaid with a legible copy of the bill of sale or other dated proof of purchase bearing the following information: consumer's name, telephone number and address; the authorized dealers name, telephone number and address; complete product description, including accessories; the year, make and model of the vehicle; vehicle license number and vehicle identification number. All components other than the unit, including without limitation the siren, the remote transmitters and the associated sensors and accessories, carry a one-year warranty from the date of purchase of the same. ALL PRODUCTS RECEIVED BY DIRECTED FOR WARRANTY REPAIR WITHOUT PROOF OF PURCHASE FROM AN AUTHORIZED DEALER WILL BE DENIED. This warranty is non-transferable and is automatically void if: the unit's date code or serial number is defaced, missing or altered; the unit has been modified or used in a manner contrary to its intended purpose; the unit has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defects in materials or construction. The warranty does not cover damage to the unit caused by installation or removal of the unit. Directed, in its sole discretion, will determine what constitutes excessive damage and may refuse the return of any unit with excessive damage.

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