⚠ **Update Alert**: Firmware updates are posted on the web on a regular basis. We recommend that you check for firmware and/or install guide updates prior to installing this product.

Installation Guide

The TL6 firmware for DBALL2 is an all-in-one door lock and override module compatible with specific Toyota and Lexus vehicles. This guide supports the installation of a DBALL2 in Remote Start Ready (RSR) mode. This solution offers three (3) configuration options to control your system: 3x OEM Lock Remote Start Activation, RF System or SmartStart (all sold separately).

⚠ This module can only be flashed and configured using XpressVIP at www.directechs.com or using the Directechs Mobile application for smartphones. Refer to the Module Programming section on page 24 for more information.

RSR Remote Start Ready (RSR) is a function that enables the interface module to remote start the vehicle completely on its own. Consequently, there is no need for an aftermarket or an OEM remote starter in order to start the vehicle from a distance.

🚦 **Important!**
This product is NOT compatible with vehicles equipped with a manual transmission.
No takeover mode. When the door is open, the car will shut down.
This guide is compatible with the TL6 firmware **version 1.36 and higher**.

LEXUS   TOYOTA

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SmartStart Compatible

SmartStart is equipped with D2D, which means it can be connected to an interface module and used in Remote Start Ready (RSR) mode without the use of a remote starter. See the **Module Programming** section for more information.

Vehicle Application Guide

The following table lists the vehicles and features which are compatible with this product. The number assigned to each year allows you to determine which installation type should be used for your vehicle.

Vehicles	2017	2016	2015	2014	2013	2012	PK-Immobilizer Bypass-Data No Key Req'd	DL-Arm Factory Security	DL-Disarm Factory Security	DL-Door Lock Control	DL-Door Unlock	DL-Driver Priority Unlock	DL-Trunk / Hatch Release	RS-3x LOCK START (Start control using OEM Remote)	RS-3x LOCK STOP (Stop control using OEM Remote)	RS-Remote Start Ready	RS-SmartStart	RS-Tach / RPM Output
Lexus																		
ES 300h (Smart Key)			3	3	3		•	•	•	•	•	•	•	•	•	•	•	•
ES 350 (Smart Key)			1	1	1		•	•	•	•	•	•	•	•	•	•	•	•
GS 350 (Smart Key)		8	2	2	2		•	•	•	•	•	•	•	•	•	•	•	•
GS 450h (Smart Key)			2	2	2		•	•	•	•	•	•	•	•	•	•	•	•
Toyota																		
Avalon (Smart Key)		6	4	4	4		•	•	•	•	•	•	•	•	•	•	•	•
Avalon Hybrid		6	4	4	4		•	•	•	•	•	•	•	•	•	•	•	•
Camry (Smart Key)	6	6	4	4	4	4	•	•	•	•	•	•	•	•	•	•	•	•
Camry Hybrid	6	6	4	4	4	4	•	•	•	•	•	•	•	•	•	•	•	•
Corolla (Smart Key)	6	5	5	5			•	•	•	•	•	•	•	•	•	•	•	•
Prius c (Smart Key)			4	4	4		•	•	•	•	•	•	•	•	•	•	•	•
RAV4 (Smart Key)	6	6	4	4	4		•	•	•	•	•	•	•	•	•	•	•	•
RAV4 Hybrid	7	7					•	•	•	•	•	•	•	•	•	•	•	•

Notes:
• Keyless and Smart Key will remain functional during remote start.
* By default, the tach is set to 1000 rpm on hybrid vehicles.

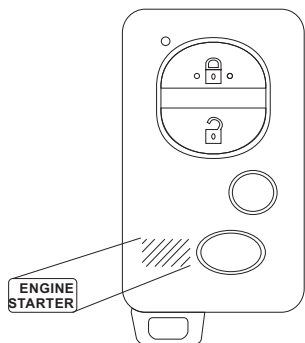   If the vehicle is already equipped with an OEM remote starter, the installer must disconnect it before installing the DBALL otherwise it will not program. See how to know if the vehicle is equipped with an OEM remote starter on the next page.

Legend:
DL: OE Door Lock & Alarm Controls
PK: Transponder & Immobilizer Override
RS: Remote Start & Engine Controls
SS: Integrated Security & Monitoring
ST: Function/Feature Status

How to Know if the Vehicle is Equipped with an OEM Remote Starter

1- An "ENGINE STARTER" sticker should be on the remote.	2- Remote start the OEM remote starter: Press the remote control's lock button twice within 2 seconds, then press and hold the lock button for 3 seconds.
	The parking lights flash after 3 seconds. The engine starts and the parking lights flash repeatedly for 20 seconds.

x2 & **Press & Hold for 3 seconds**

Important OEM Remote Starter Information

- **If the vehicle is equipped with a physical add-on Lexus/Toyota OEM Remote Starter:**
  The factory remote starter must be permanently disconnected before programming the Directed interface as both modules cannot coexist. See locating the OEM Remote Start on the next page.

- **If the vehicle is equipped with a BCM enabled Lexus/Toyota OEM Remote Starter:**
  The vehicle does not have a physical remote starter and only one module can be programed at a time. In this case temporally disable the OEM remote start system using the following process:
    1.   Remove the fuse powering the OEM Remote Starter.
          See locating the fuse powering the OEM Remote Starter on the next page.
    2.   Perform a module reset, see « **Module Reset** » section.
    3.   Perform the Module Programming steps, see « **Module Programming** » section.
After programming is successful replace the fuse powering the OEM Remote Starter.
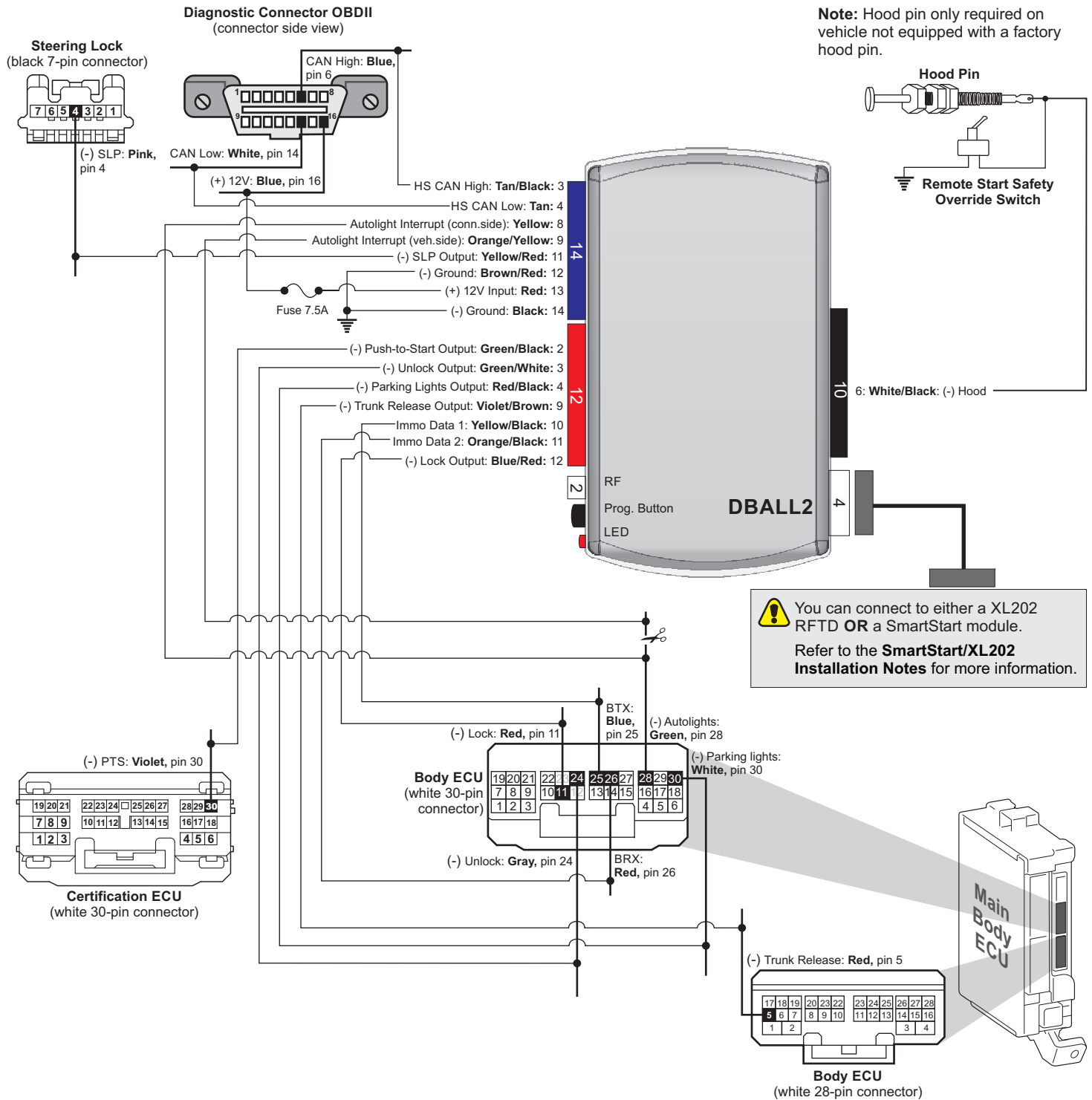
OEM Remote Start Fuse Location

Make	Model	Fuse Location	Fuse Name	Fuse Value
Lexus	ES 300h (Smart Key)	Engine room relay box, left side of engine compartment.	Mayday	5A
Lexus	ES 350 (Smart Key)	Engine room relay box, left side of engine compartment.	Mayday	5A
Lexus	GS 350 (Smart Key)	Engine room relay box, right side of engine compartment.	DCM	7.5A
Lexus	GS 450h (Smart Key)	Bottom of luggage room junction box, left rear quarter panel.	DCM	7.5A

Physical OEM Remote Start Location

Make	Model	OEM Remote Start Location
Toyota	Avalon (Smart Key)	Behind glove box upper right hand side.
Toyota	Avalon Hybrid	Behind glove box upper right hand side.
Toyota	Camry (Smart Key)	Behind glove box upper left hand side.
Toyota	Camry Hybrid	Behind glove box upper left hand side.
Toyota	RAV4 (Smart Key)	High above drivers kick panel.

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Installation Type 1

Steering Lock
(black 7-pin connector)

Diagnostic Connector OBDII
(connector side view)

CAN High: **Blue,** pin 6

(-) SLP: **Pink,** pin 4

CAN Low: **White,** pin 14

(+) 12V: **Blue,** pin 16

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
Fuse 7.5A
(-) Ground: **Black:** 14

(-) Push-to-Start Output: **Green/Black:** 2
(-) Unlock Output: **Green/White:** 3
(-) Parking Lights Output: **Red/Black:** 4
(-) Trunk Release Output: **Violet/Brown:** 9
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11
(-) Lock Output: **Blue/Red:** 12

6: **White/Black**: (-) Hood

RF
Prog. Button
LED

DBALL2

You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) PTS: **Violet,** pin 30

19	20	21		22	23	24		25	26	27		28	29	30
7	8	9		10	11	12		13	14	15		16	17	18
1	2	3										4	5	6

Certification ECU
(white 30-pin connector)

BTX: **Blue,** pin 25
(-) Autolights: **Green,** pin 28

(-) Lock: **Red,** pin 11

(-) Parking lights: **White,** pin 30

Body ECU
(white 30-pin connector)

19	20	21		22	23	24		25	26	27		28	29	30
7	8	9		10	11	12		13	14	15		16	17	18
1	2	3										4	5	6

(-) Unlock: **Gray,** pin 24

BRX: **Red,** pin 26

(-) Trunk Release: **Red,** pin 5

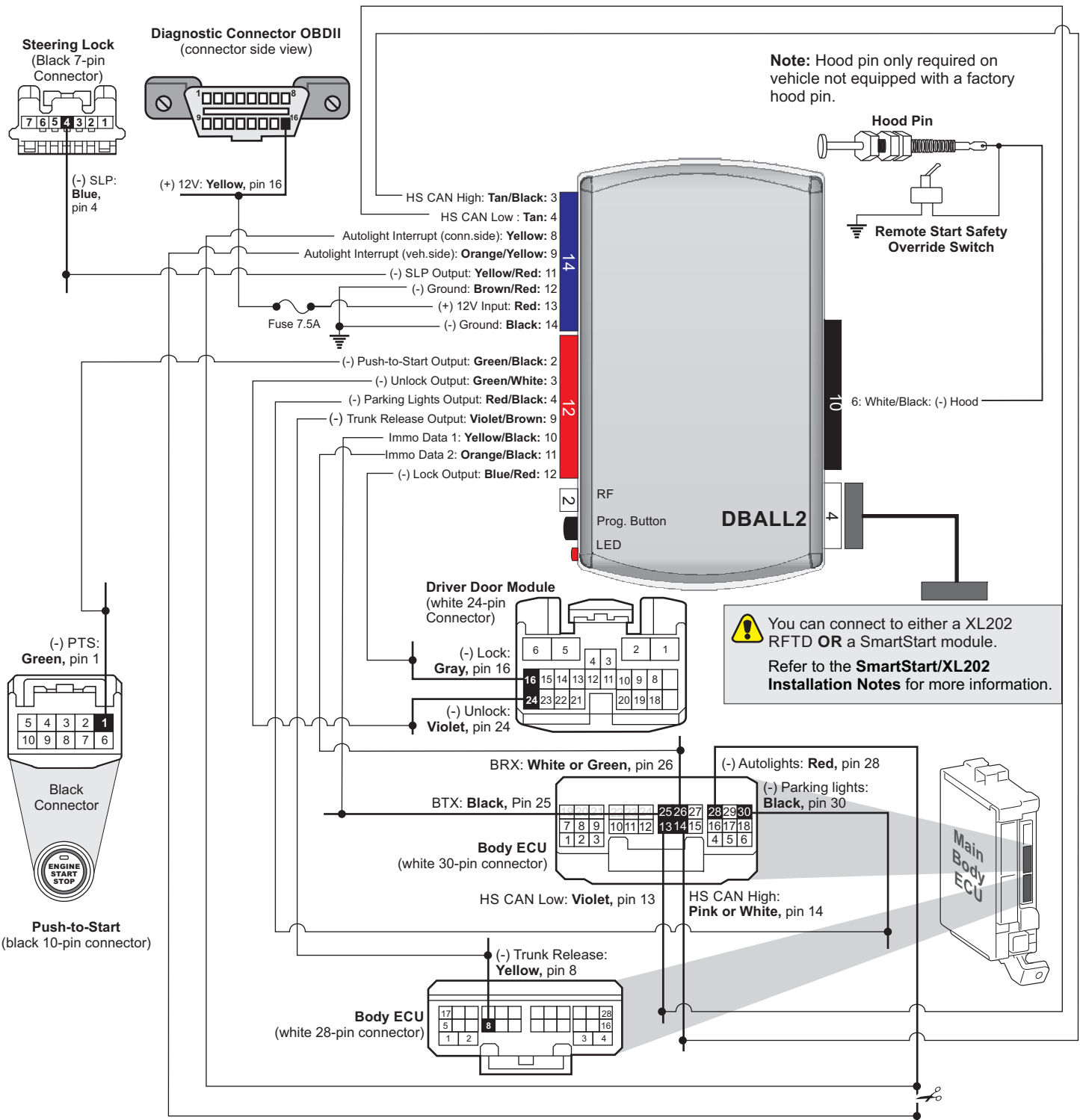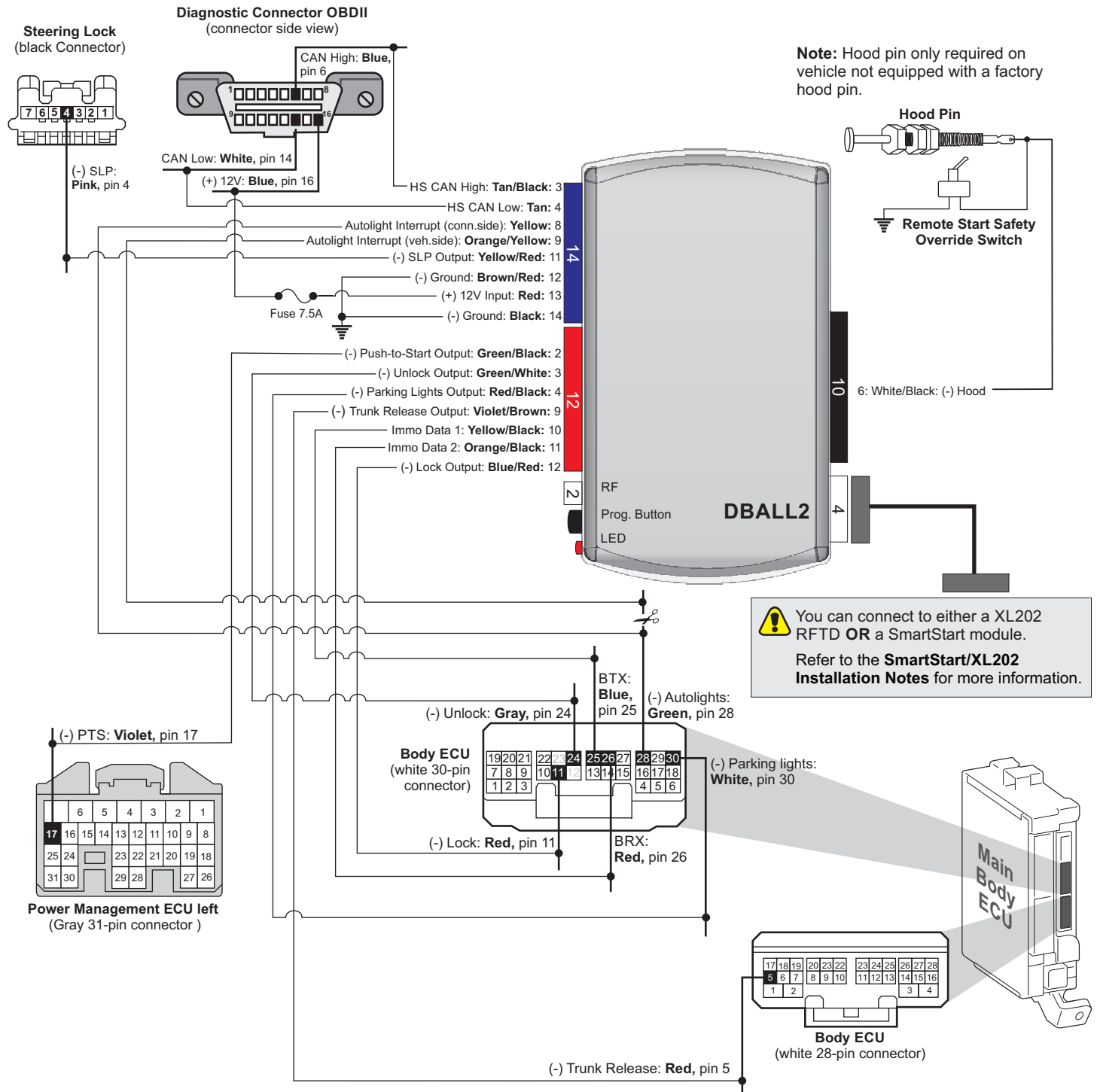| 17 | 18 | 19 | | 20 | 23 | 22 | | 23 | 24 | 25 | | 26 | 27 | 28 |
| 5 | 6 | 7 | | 8 | 9 | 10 | | 11 | 12 | 13 | | 14 | 15 | 16 |
| 1 | 2 | | | | | | | | | | | 3 | 4 | |

Main Body ECU

Body ECU
(white 28-pin connector)

⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

DIRECTED

Vehicle Wiring Reference Chart - Type 1

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Lexus ES 350 (Smart Key) 2013-2015						
HS CAN High	Blue	6	Data	Located at OBDII.	Black	16
HS CAN Low	White	14	Data	Located at OBDII.	Black	16
BTX	Blue	25	Data	Middle connector Body ECU on dash fuse box.	White	30
BRX	Red	26	Data	Middle connector Body ECU on dash fuse box.	White	30
Autolight	Green	28	Cut	Middle connector Body ECU on dash fuse box.	White	30
12V	Blue	16	(+)	Located at OBDII.	Black	16
Parking Lights	White	30	(-)	Middle connector Body ECU on dash fuse box.	White	30
PTS	Violet	30	(-)	Top connector Certification ECU behind glove box.	White	30
SLP	Pink	4	(-)	Steering Lock under steering column.	Black	7
Lock	Red	11	(-)	Middle connector Body ECU on dash fuse box.	White	30
Unlock	Gray	24	(-)	Middle connector Body ECU on dash fuse box.	White	30
Trunk Release	Red	5	(-)	Body ECU on dash fuse box.	White	28

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Installation Type 2

Steering Lock
(Black 7-pin Connector)

7 6 5 **4** 3 2 1

(-) SLP:
Blue,
pin 4

Diagnostic Connector OBDII
(connector side view)

1 ... 8
9 ... 16

(+) 12V: **Yellow,** pin 16

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

HS CAN High: **Tan/Black:** 3
HS CAN Low : **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

Fuse 7.5A

14

(-) Push-to-Start Output: **Green/Black:** 2
(-) Unlock Output: **Green/White:** 3
(-) Parking Lights Output: **Red/Black:** 4
(-) Trunk Release Output: **Violet/Brown:** 9
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11
(-) Lock Output: **Blue/Red:** 12

12

6: White/Black: (-) Hood

10

2

RF
Prog. Button
LED

DBALL2

4

(-) PTS:
Green, pin 1

5 4 3 2 **1**
10 9 8 7 6

Black
Connector

ENGINE
START
STOP

Push-to-Start
(black 10-pin connector)

Driver Door Module
(white 24-pin Connector)

6 5   4 3   2 1
16 15 14 13 12 11 10 9 8
24 23 22 21   20 19 18

(-) Lock:
Gray, pin 16

(-) Unlock:
Violet, pin 24

You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

BRX: **White or Green,** pin 26

BTX: **Black,** Pin 25

(-) Autolights: **Red,** pin 28

(-) Parking lights:
Black, pin 30

7 8 9 10 11 12 **25** 26 27 **28** 29 30
1 2 3   **13** **14** 15 16 17 18
                              4 5 6

Body ECU
(white 30-pin connector)

HS CAN Low: **Violet,** pin 13

HS CAN High:
Pink or White, pin 14

Main
Body
ECU

(-) Trunk Release:
Yellow, pin 8

Body ECU
(white 28-pin connector)

17   28
5   16
1 2   **8**   3 4
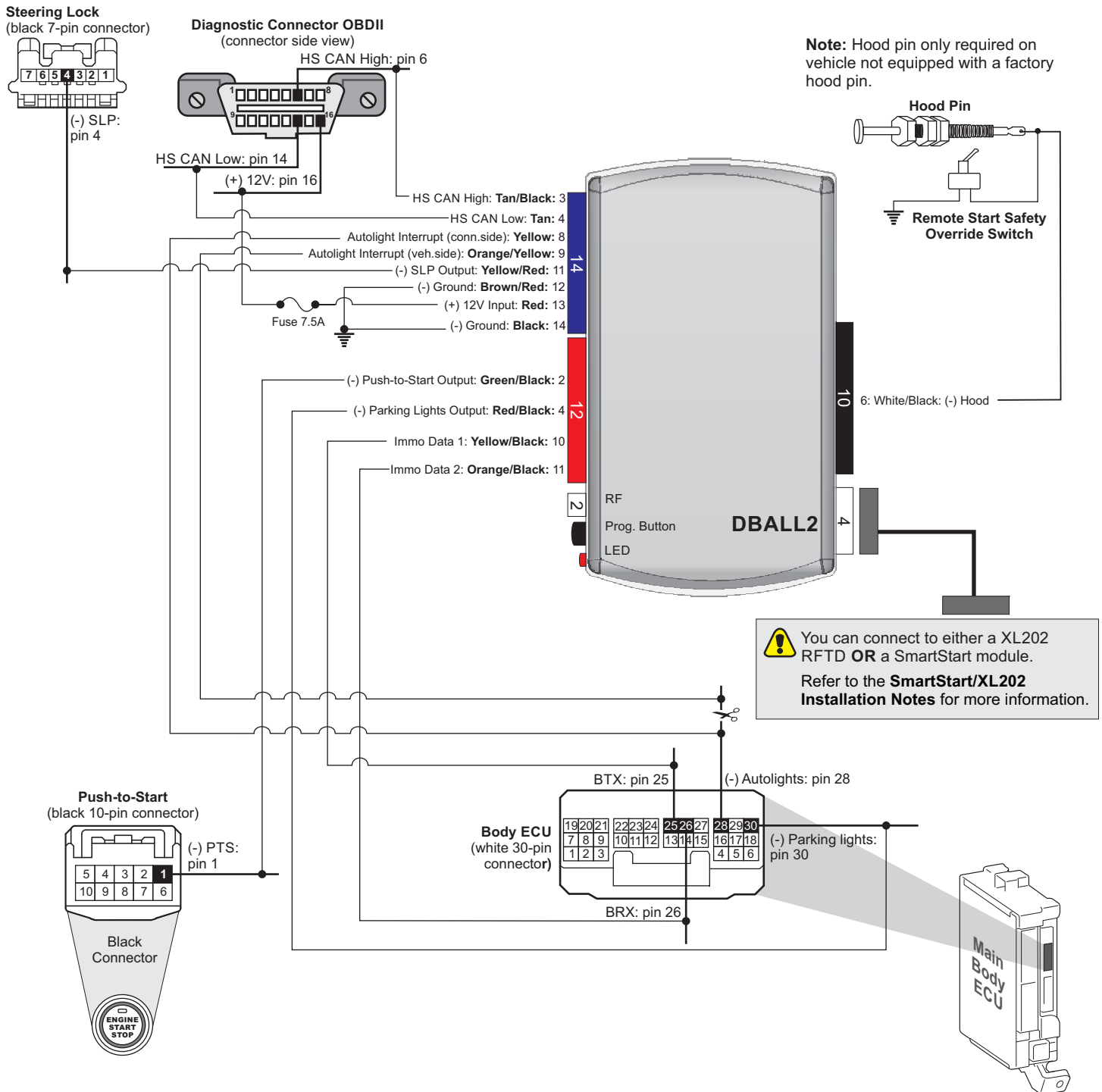
⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

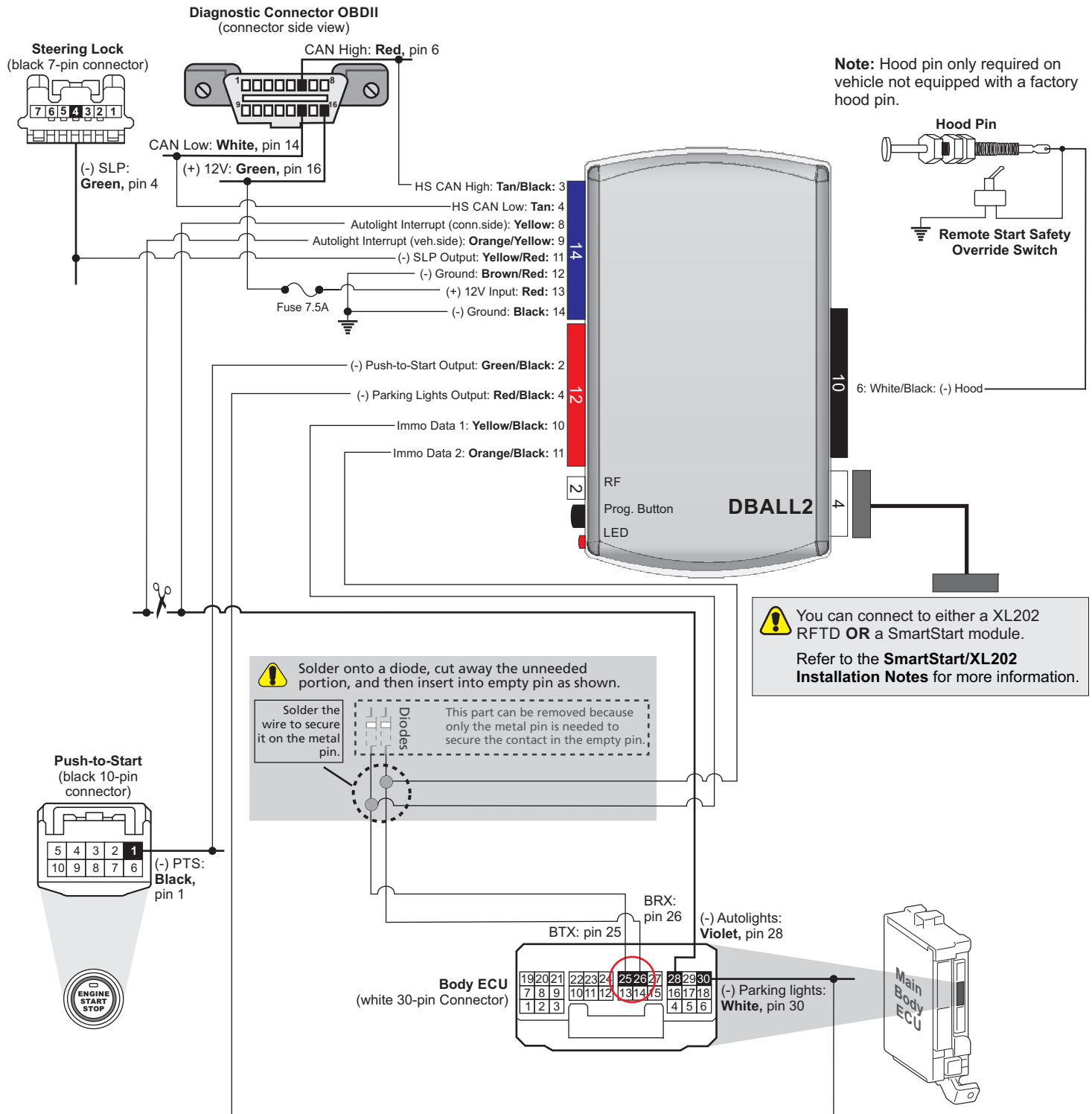**DIRECTED.**

Vehicle Wiring Reference Chart - Type 2

Function	Color	Pin	Polarity	Location	Color	Pins
Wire Information				**Connector Information**		
Lexus GS 350 (Smart Key) 2013-2015						
HS CAN High	Pink or White	14	Data	Middle connector Body ECU on dash fuse box.	White	30
HS CAN Low	Violet	13	Data	Middle connector Body ECU on dash fuse box.	White	30
BTX	Black	25	Data	Middle connector Body ECU on dash fuse box.	White	30
BRX	White or Green	26	Data	Middle connector Body ECU on dash fuse box.	White	30
Autolight	Red	28	Cut	Middle connector Body ECU on dash fuse box.	White	30
12V	Yellow	16	(+)	Located at OBDII.	Black	16
Lock	Gray	16	(-)	Driver Door Module.	White	24
Unlock	Violet	24	(-)	Driver Door Module.	White	24
Parking Lights	Black	30	(-)	Middle connector Body ECU on dash fuse box.	White	30
PTS	Green	1	(-)	Push-to-Start Switch.	Black	10
SLP	Blue	4	(-)	Steering Lock under steering column.	Black	7
Trunk Release	Yellow	8	(-)	Body ECU on dash fuse box.	White	28
Lexus GS 450h (Smart Key) 2013-2015						
HS CAN High	Pink or White	14	Data	Middle connector Body ECU on dash fuse box.	White	30
HS CAN Low	Violet	13	Data	Middle connector Body ECU on dash fuse box.	White	30
BTX	Black	25	Data	Middle connector Body ECU on dash fuse box.	White	30
BRX	White or Green	26	Data	Middle connector Body ECU on dash fuse box.	White	30
Autolight	Red	28	Cut	Middle connector Body ECU on dash fuse box.	White	30
12V	Yellow	16	(+)	Located at OBDII.	Black	16
Lock	Gray	16	(-)	Driver Door Module.	White	24
Unlock	Violet	24	(-)	Driver Door Module.	White	24
Parking Lights	Black	30	(-)	Middle connector Body ECU on dash fuse box.	White	30
PTS	Green	1	(-)	Push-to-Start Switch.	Black	10
SLP	Blue	4	(-)	Steering Lock under steering column.	Black	7
Trunk Release	Yellow	8	(-)	Body ECU on dash fuse box.	White	28

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Installation Type 3

Steering Lock
(black Connector)

Diagnostic Connector OBDII
(connector side view)

CAN High: **Blue,** pin 6

7 6 5 4 3 2 1

CAN Low: **White,** pin 14

(-) SLP: **Pink,** pin 4

(+) 12V: **Blue,** pin 16

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
Fuse 7.5A
(-) Ground: **Black:** 14

14

(-) Push-to-Start Output: **Green/Black:** 2
(-) Unlock Output: **Green/White:** 3
(-) Parking Lights Output: **Red/Black:** 4
(-) Trunk Release Output: **Violet/Brown:** 9
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11
(-) Lock Output: **Blue/Red:** 12

12

6: White/Black: (-) Hood

10

2

RF
Prog. Button
LED

DBALL2

4

⚠ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

BTX: **Blue,** pin 25
(-) Autolights: **Green,** pin 28

(-) Unlock: **Gray,** pin 24

(-) PTS: **Violet,** pin 17

Body ECU
(white 30-pin connector)

19 20 21 22 23 24 25 26 27 28 29 30
7 8 9 10 11 12 13 14 15 16 17 18
1 2 3 4 5 6

(-) Parking lights: **White,** pin 30

6 5 4 3 2 1
17 16 15 14 13 12 11 10 9 8
25 24 23 22 21 20 19 18
31 30 29 28 27 26

(-) Lock: **Red,** pin 11

BRX: **Red,** pin 26

Power Management ECU left
(Gray 31-pin connector)

Main Body ECU

17 18 19 20 23 22 23 24 25 26 27 28
5 6 7 8 9 10 11 12 13 14 15 16
1 2 3 4

Body ECU
(white 28-pin connector)

(-) Trunk Release: **Red,** pin 5

⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

Vehicle Wiring Reference Chart - Type 3

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Lexus ES 300h (Smart Key) 2013-2015						
HS CAN High	Blue	6	Data	Located at OBDII.	Black	16
HS CAN Low	White	14	Data	Located at OBDII.	Black	16
BTX	Blue	25	Data	Middle connector Body ECU on dash fuse box.	White	30
BRX	Red	26	Data	Middle connector Body ECU on dash fuse box.	White	30
Autolight	Green	28	Cut	Middle connector Body ECU on dash fuse box.	White	30
12V	Blue	16	(+)	Located at OBDII.	Black	16
Lock	Red	11	(-)	Middle connector Body ECU on dash fuse box.	White	30
Unlock	Gray	24	(-)	Middle connector Body ECU on dash fuse box.	White	30
Parking Lights	White	30	(-)	Middle connector Body ECU on dash fuse box.	White	30
PTS	Violet	17	(-)	Power Management ECU left of dash fuse box.	Gray	31
SLP	Pink	4	(-)	Steering Lock under steering column.	Black	7
Trunk Release	Red	5	(-)	Bottom connector Body ECU on dash fuse box.	White	28

Installation Type 4

Steering Lock
(black 7-pin connector)

7 6 5 4 3 2 1

(-) SLP: pin 4

Diagnostic Connector OBDII
(connector side view)

HS CAN High: pin 6

1 ... 8
9 ... 16

HS CAN Low: pin 14

(+) 12V: pin 16

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

Fuse 7.5A

14

(-) Push-to-Start Output: **Green/Black:** 2
(-) Parking Lights Output: **Red/Black:** 4
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11

12

2

RF
Prog. Button
LED

DBALL2

10

6: White/Black: (-) Hood

4

⚠ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

Push-to-Start
(black 10-pin connector)

5 4 3 2 **1**
10 9 8 7 6

Black
Connector

ENGINE
START
STOP

(-) PTS: pin 1

BTX: pin 25

(-) Autolights: pin 28

Body ECU
(white 30-pin connector)

19 20 21 22 23 24 25 26 27 28 29 30
7 8 9 10 11 12 13 14 15 16 17 18
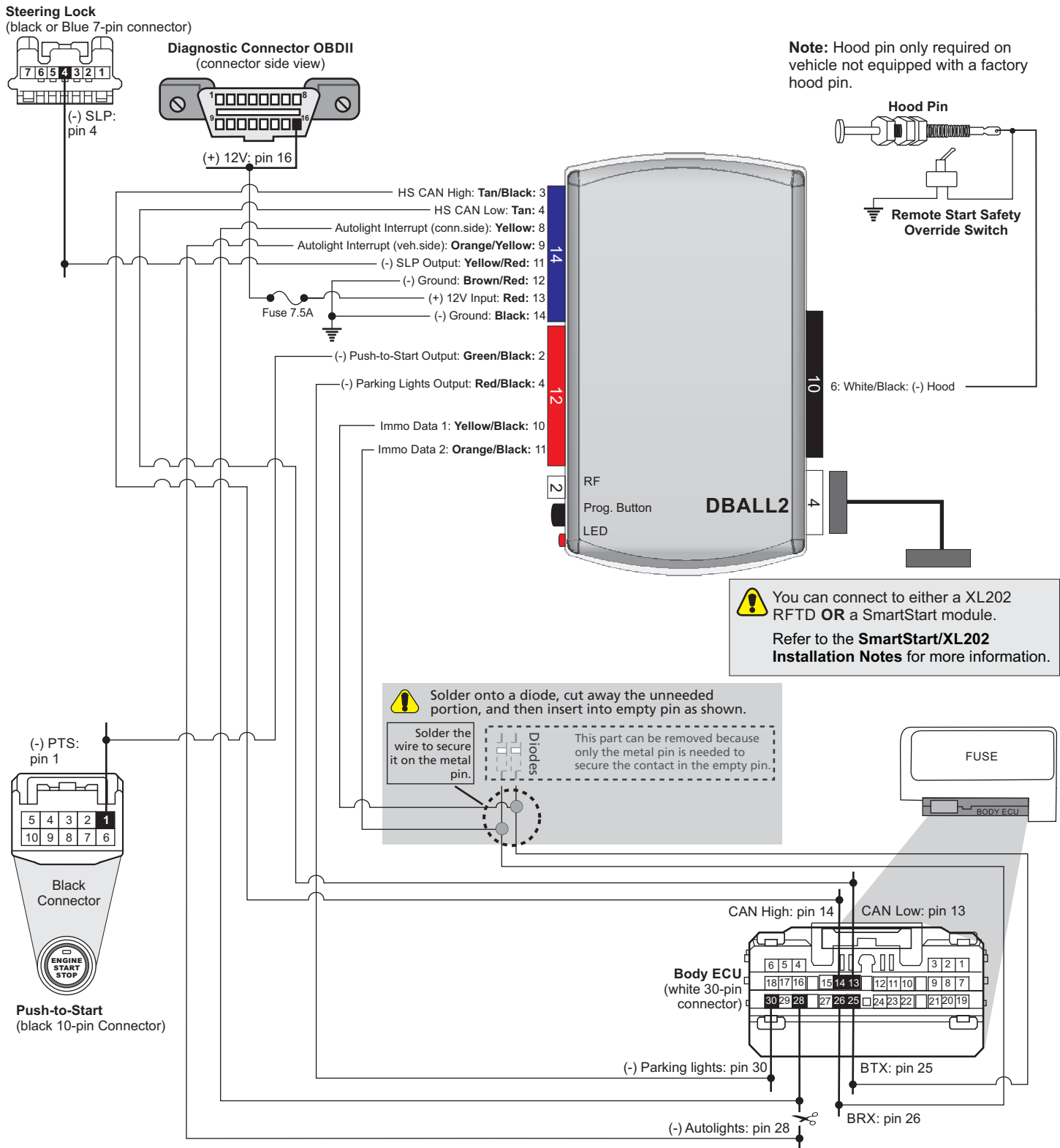1 2 3 4 5 6

(-) Parking lights: pin 30

BRX: pin 26

Main
Body
ECU

⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.
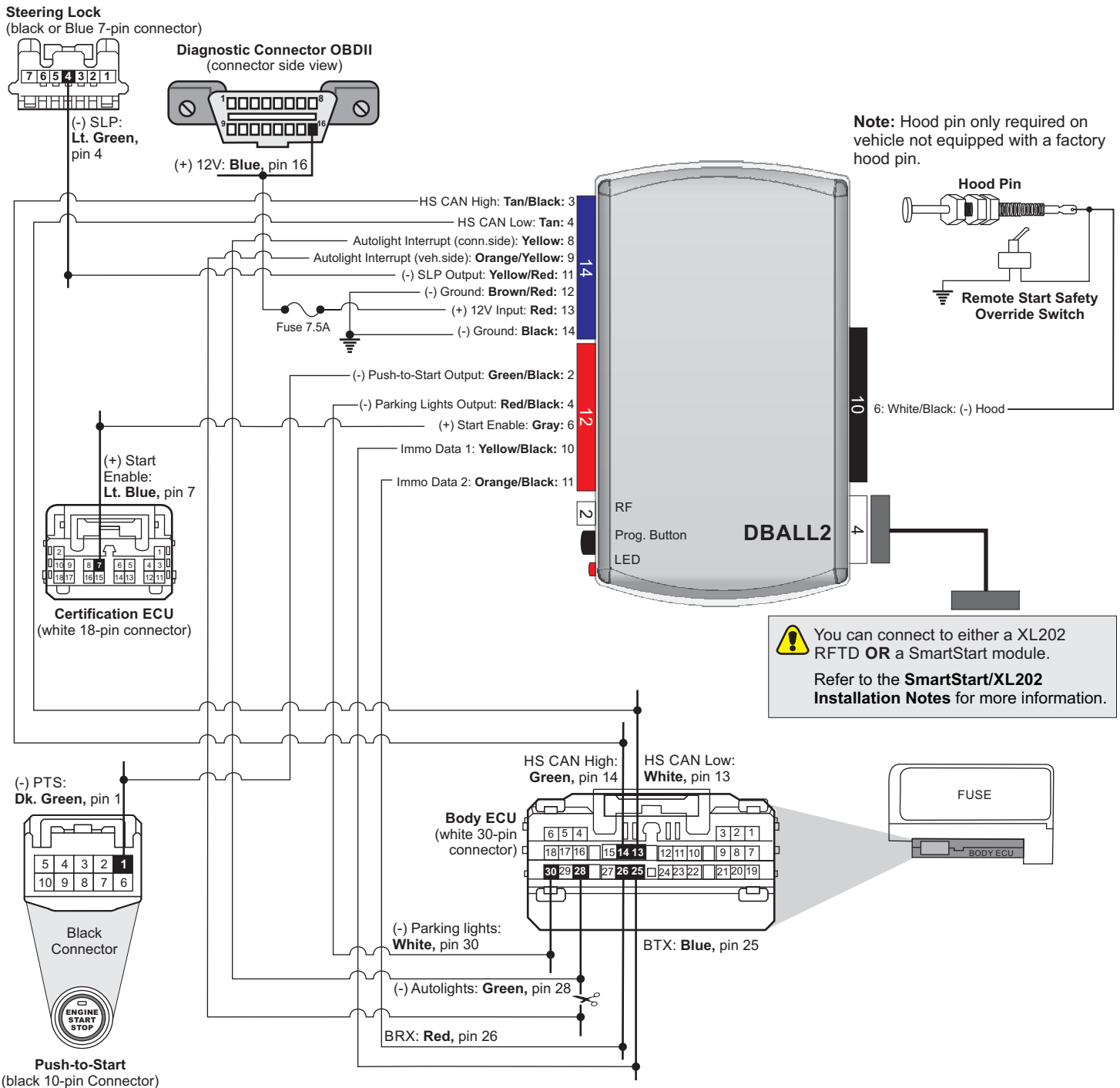
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Vehicle Wiring Reference Chart - Type 4

Function	Color	Pin	Polarity	Location	Color	Pins
	Wire Information			Connector Information		
Toyota Avalon (Smart Key) 2013-2015						
HS CAN High	Blue	6	Data	Located at OBDII.	White	16
HS CAN Low	White	14	Data	Located at OBDII.	White	16
BTX	Brown	25	Data	Body ECU on dash fuse box.	White	30
BRX	Lt. Green	26	Data	Body ECU on dash fuse box.	White	30
Autolight	Tan	28	Cut	Body ECU on dash fuse box.	White	30
12V	Red	16	(+)	Located at OBDII.	White	16
Parking Lights	Red	30	(-)	Body ECU on dash fuse box.	White	30
PTS	Violet	1	(-)	Push-to-Start Switch.	Black	10
SLP	Green	4	(-)	Steering Lock under steering column.	Black	7
Toyota Avalon Hybrid 2013-2015						
HS CAN High	Blue	6	Data	Located at OBDII.	White	16
HS CAN Low	White	14	Data	Located at OBDII.	White	16
BTX	Brown	25	Data	Body ECU on dash fuse box.	White	30
BRX	Lt. Green	26	Data	Body ECU on dash fuse box.	White	30
Autolight	Tan	28	Cut	Body ECU on dash fuse box.	White	30
12V	Red	16	(+)	Located at OBDII.	White	16
Parking Lights	Red	30	(-)	Body ECU on dash fuse box.	White	30
PTS	Violet	1	(-)	Push-to-Start Switch.	Black	10
SLP	Green	4	(-)	Steering Lock under steering column.	Black	7
Toyota Camry (Smart Key) 2012-2015						
HS CAN High	Blue	6	Data	Located at OBDII.	White	16
HS CAN Low	White	14	Data	Located at OBDII.	White	16
BTX	Green	25	Data	Body ECU on dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on dash fuse box.	White	30
Autolight	Green	28	Cut	Body ECU on dash fuse box.	White	30
12V	Red	16	(+)	Located at OBDII.	White	16
Parking Lights	White or Black	30	(-)	Body ECU on dash fuse box.	White	30
PTS	Violet	1	(-)	Push-to-Start Switch.	Black	10
SLP	Pink	4	(-)	Steering Lock under steering column.	Black	7
Toyota Camry Hybrid (Smart Key) 2012-2015						
HS CAN High	Blue	6	Data	Located at OBDII.	White	16
HS CAN Low	White	14	Data	Located at OBDII.	White	16
BTX	Green	25	Data	Body ECU on dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on dash fuse box.	White	30
Autolight	Green	28	Cut	Body ECU on dash fuse box.	White	30
12V	Red	16	(+)	Located at OBDII.	White	16
Parking Lights	White or Black	30	(-)	Body ECU on dash fuse box.	White	30
PTS	Violet	1	(-)	Push-to-Start Switch.	Black	10
SLP	Red	4	(-)	Steering Lock under steering column.	Black	7
Toyota Prius C (Smart key) 2012-2014						
HS CAN High	Gray	6	Data	Located at OBDII.	White	16
HS CAN Low	White	14	Data	Located at OBDII.	White	16
BTX	Black	25	Data	Body ECU on dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on dash fuse box.	White	30
Autolight	Red	28	Cut	Body ECU on dash fuse box.	White	30
12V	Lt. Blue	16	(+)	Located at OBDII.	White	16
Parking Lights	Lt. Blue	30	(-)	Body ECU on dash fuse box.	White	30
PTS	Lt. Blue	1	(-)	Push-to-Start Switch.	White	10
SLP	Pink	4	(-)	Steering Lock under steering column.	Black	7

Vehicle Wiring Reference Chart - Type 4

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Toyota RAV4 (Smart Key) 2013-2015						
HS CAN High	Black	6	Data	Located at OBDII.	Black	16
HS CAN Low	White	14	Data	Located at OBDII.	Black	16
BTX	Blue	25	Data	Body ECU on dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on dash fuse box.	White	30
Autolight	Green	28	Cut	Body ECU on dash fuse box.	White	30
12V	Blue	16	(+)	Located at OBDII.	Black	16
Parking Lights	White	30	(-)	Body ECU on dash fuse box.	White	30
PTS	Dk. Green	1	(-)	Push-to-Start Switch.	Black	10
SLP	Green	4	(-)	Steering Lock under steering column.	Black	7

Installation Type 5

Steering Lock
(black 7-pin connector)

7 6 5 4 3 2 1

(-) SLP:
Green, pin 4

Diagnostic Connector OBDII
(connector side view)

CAN High: **Red,** pin 6

CAN Low: **White,** pin 14

(+) 12V: **Green,** pin 16

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

Fuse 7.5A

(-) Push-to-Start Output: **Green/Black:** 2
(-) Parking Lights Output: **Red/Black:** 4
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11

14

12

2

10

4

6: White/Black: (-) Hood

RF
Prog. Button
LED

DBALL2

You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

Solder onto a diode, cut away the unneeded portion, and then insert into empty pin as shown.

Solder the wire to secure it on the metal pin.

Diodes

This part can be removed because only the metal pin is needed to secure the contact in the empty pin.

Push-to-Start
(black 10-pin connector)

5 4 3 2 1
10 9 8 7 6

(-) PTS:
Black,
pin 1

ENGINE START STOP

BRX: pin 26
BTX: pin 25

(-) Autolights: **Violet,** pin 28

Body ECU
(white 30-pin Connector)

19 20 21 22 23 24 25 26 27 28 29 30
7 8 9 10 11 12 13 14 15 16 17 18
1 2 3 4 5 6

(-) Parking lights: **White,** pin 30

Main Body ECU

⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

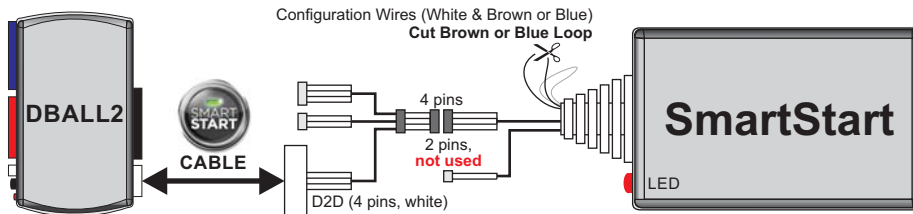## Vehicle Wiring Reference Chart - Type 5

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Toyota Corolla Smart key 2014-2016						
HS CAN High	Red	6	Data	Located at OBDII.	White	16
HS CAN Low	White	14	Data	Located at OBDII.	White	16
12V	Green	16	(+)	Located at OBDII.	White	16
SLP	Green	4	(-)	Steering Lock under steering column.	Black	7
BTX	Empty	25	Data	Middle connector Body ECU on dash fuse box.	White	30
BRX	Empty	26	Data	Middle connector Body ECU on dash fuse box.	White	30
Parking Lights	White	30	(-)	Middle connector Body ECU on dash fuse box.	White	30
Autolight	Violet	28	cut	Middle connector Body ECU on dash fuse box.	White	30
PTS	Black	1	(-)	Push-to-Start Switch.	Black	10

Installation Type 6

Steering Lock
(black or Blue 7-pin connector)

7 6 5 **4** 3 2 1

(-) SLP: pin 4

Diagnostic Connector OBDII
(connector side view)

1 ... 8
9 ... 16

(+) 12V: pin 16

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

Fuse 7.5A

14

(-) Push-to-Start Output: **Green/Black:** 2
(-) Parking Lights Output: **Red/Black:** 4

12

Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11

2

RF
Prog. Button
LED

DBALL2

10

6: White/Black: (-) Hood

4

You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

Solder onto a diode, cut away the unneeded portion, and then insert into empty pin as shown.

Solder the wire to secure it on the metal pin.

Diodes

This part can be removed because only the metal pin is needed to secure the contact in the empty pin.

(-) PTS: pin 1

5 4 3 2 **1**
10 9 8 7 6

Black Connector

ENGINE START STOP

Push-to-Start
(black 10-pin Connector)

FUSE

BODY ECU

CAN High: pin 14   CAN Low: pin 13

Body ECU
(white 30-pin connector)

6 5 4   3 2 1
18 17 16 15 14 13 12 11 10 9 8 7
30 29 28 27 26 25 24 23 22 21 20 19

(-) Parking lights: pin 30

BTX: pin 25

BRX: pin 26

(-) Autolights: pin 28

⚠ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

Vehicle Wiring Reference Chart - Type 6

Function	Color	Pin	Polarity	Location	Color	Pins
Wire Information				**Connector Information**		
Toyota Avalon (Smart Key) 2016						
12V	Red	16	(+)	Located at OBDII.	Black	16
SLP	Green	4	(-)	Steering Lock under steering column.	Black or Blue	7
HS CAN High	Pink	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30
BTX	Brown	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Lt. Green	26	Data	Body ECU on bottom dash fuse box.	White	30
Parking Lights	Red	30	(-)	Body ECU on bottom dash fuse box.	White	30
Autolight	Tan	28	cut	Body ECU on bottom dash fuse box.	White	30
PTS	Violet	1	(-)	Push-to-Start Switch.	Black	10
Toyota Avalon Hybrid 2016						
12V	Red	16	(+)	Located at OBDII.	Black	16
SLP	Green	4	(-)	Steering Lock under steering column.	Black or Blue	7
HS CAN High	Pink	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30
BTX	Brown	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Lt. Green	26	Data	Body ECU on bottom dash fuse box.	White	30
Parking Lights	Red	30	(-)	Body ECU on bottom dash fuse box.	White	30
Autolight	Tan	28	cut	Body ECU on bottom dash fuse box.	White	30
PTS	Violet	1	(-)	Push-to-Start Switch.	Black	10
Toyota Camry (Smart Key) 2016-2017						
SLP	Green or Pink	4	(-)	Steering lock under steering column.	Black or Blue	7
PTS	Violet	1	(-)	PTS (Push-to-Start) switch.	Black	10
12V	Red	16	(+)	OBDII.	Black	16
BTX	Green	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on bottom dash fuse box.	White	30
Parking Lights	Black	30	(-)	Body ECU on bottom dash fuse box.	White	30
Autolight	Green	28	cut	Body ECU on bottom dash fuse box.	White	30
HS CAN High	Pink	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30
Toyota Camry Hybrid 2016-2017						
SLP	Green or Pink	4	(-)	Steering lock under steering column.	Black or Blue	7
PTS	Violet	1	(-)	PTS (Push-to-Start) switch.	Black	10
12V	Red	16	(+)	OBDII.	Black	16
BTX	Green	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on bottom dash fuse box.	White	30
Parking Lights	Black	30	(-)	Body ECU on bottom dash fuse box.	White	30
Autolight	Green	28	cut	Body ECU on bottom dash fuse box.	White	30
HS CAN High	Pink	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30

Vehicle Wiring Reference Chart - Type 6

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Toyota Corolla (Smart Key) 2017						
SLP	Green	4	(-)	Steering lock under steering column.	Black	7
PTS	Black	1	(-)	PTS (Push-to-Start) switch.	Black	10
12V	Green	16	(+)	OBDII.	Black	16
BTX	Empty, insert pin	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Empty, insert pin	26	Data	Body ECU on bottom dash fuse box.	White	30
Parking Lights	White	30	(-)	Body ECU on bottom dash fuse box.	White	30
Autolight	Violet	28	cut	Body ECU on bottom dash fuse box.	White	30
HS CAN High	Black	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30
Toyota RAV4 (Smart Key) 2016-2017						
12V	Blue	16	(+)	Located at OBDII.	Black	16
SLP	Lt. Green	4	(-)	Steering Lock under steering column.	Black or Blue	7
HS CAN High	Green	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30
BTX	Blue	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on bottom dash fuse box.	White	30
Parking Lights	White	30	(-)	Body ECU on bottom dash fuse box.	White	30
Autolight	Green	28	cut	Body ECU on bottom dash fuse box.	White	30
PTS	Dk. Green	1	(-)	Push-to-Start Switch.	Black	10

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Installation Type 7

Steering Lock
(black or Blue 7-pin connector)

7 6 5 4 3 2 1

(-) SLP:
Lt. Green,
pin 4

Diagnostic Connector OBDII
(connector side view)

1 8
9 16

(+) 12V: **Blue,** pin 16

HS CAN High: **Tan/Black:** 3
HS CAN Low: **Tan:** 4
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
Fuse 7.5A
(-) Ground: **Black:** 14

14

(-) Push-to-Start Output: **Green/Black:** 2
(-) Parking Lights Output: **Red/Black:** 4
(+) Start Enable: **Gray:** 6
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11

12

2

RF
Prog. Button
LED

DBALL2

4

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

Remote Start Safety Override Switch

10

6: White/Black: (-) Hood

(+) Start Enable:
Lt. Blue, pin 7

2
10 9 8 **7** 6 5 4 3 1
18 17 16 15 14 13 12 11

Certification ECU
(white 18-pin connector)

⚠ You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

HS CAN High: **Green,** pin 14
HS CAN Low: **White,** pin 13

(-) PTS:
Dk. Green, pin 1

5 4 3 2 **1**
10 9 8 7 6

Body ECU
(white 30-pin connector)

6 5 4   3 2 1
18 17 16   **15 14 13**   12 11 10   9 8 7
30 29 **28**   27 **26 25**   24 23 22   21 20 19

FUSE

BODY ECU

Black
Connector

(-) Parking lights:
White, pin 30

BTX: **Blue,** pin 25

ENGINE START STOP

(-) Autolights: **Green,** pin 28 ✂

Push-to-Start
(black 10-pin Connector)

BRX: **Red,** pin 26

Vehicle Wiring Reference Chart - Type 7

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Toyota RAV4 Hybrid (Smart Key) 2016-2017						
HS CAN High	Green	14	Data	Body ECU on bottom dash fuse box.	White	30
HS CAN Low	White	13	Data	Body ECU on bottom dash fuse box.	White	30
BTX	Blue	25	Data	Body ECU on bottom dash fuse box.	White	30
BRX	Red	26	Data	Body ECU on bottom dash fuse box.	White	30
Autolight	Green	28	Cut	Body ECU on bottom dash fuse box.	White	30
12V	Blue	16	(+)	Located at OBDII.	White	16
Parking Lights	White	30	(-)	Body ECU on bottom dash fuse box.	White	30
PTS	Dk. Green	1	(-)	Push-to-Start Switch.	Black	10
Start Enable	Lt. Blue	7	(+)	Certification ECU behind glovebox.	White	18
SLP	Lt. Green	4	(+)	Steering Lock under column.	Black	7

Installation Type 8

Steering Lock
(black 7-pin Connector)

7 6 5 4 3 2 1

(-) SLP:
Blue, pin 4

Note: Hood pin only required on vehicle not equipped with a factory hood pin.

Hood Pin

HS CAN High 1: **Tan/Black:** 3
HS CAN Low 1: **Tan:** 4
HS CAN High 2: **Orange/Green:** 5
HS CAN Low 2: **Orange/Brown:** 6
Autolight Interrupt (conn.side): **Yellow:** 8
Autolight Interrupt (veh.side): **Orange/Yellow:** 9
(-) SLP Output: **Yellow/Red:** 11
(-) Ground: **Brown/Red:** 12
(+) 12V Input: **Red:** 13
(-) Ground: **Black:** 14

Fuse 7.5A

14

Remote Start Safety Override Switch

(-) Push-to-Start Output: **Green/Black:** 2
(-) Parking Lights Output: **Red/Black:** 4
(-) Trunk Release Output: **Violet/Brown:** 9
Immo Data 1: **Yellow/Black:** 10
Immo Data 2: **Orange/Black:** 11

12

10

6: White/Black: (-) Hood

2

RF

Prog. Button

LED

DBALL2

4

You can connect to either a XL202 RFTD **OR** a SmartStart module.

Refer to the **SmartStart/XL202 Installation Notes** for more information.

(-) PTS:
Green,
pin 1

5 4 3 2 **1**
10 9 8 7 6

Black
Connector

ENGINE
START
STOP

Push-to-Start
(black 10-pin connector)

BTX: **Black,** pin 25

BRX:
White or Green, pin 26

Body ECU
(white 30-pin connector)

19 20 21 22 23 24 **25 26** 27 28 29 **30**
7 8 9 10 11 12 **13 14** 15 16 17 18
1 2 3 4 5 6

(-) Autolights: **Red,** pin 28

(-) Parking lights:**Black,** pin 30

(+) 12V: **Black or White,** pin 16

1 8
9 16

Diagnostic Connector OBDII
(connector side view)

HS CAN 1 Low:
Gray or White, pin 13

HS CAN 1 High:
Red, pin 14

HS CAN 2 Low:
Gray, pin 10

(-) Trunk Release:
Yellow, pin 8

17 28
5 **8 9 10** 16
1 2 3 4

Body ECU
(white 28-pin connector)

Main
Body
ECU

HS CAN 2 High: **Red,** pin 9

⚠️ Unless specified otherwise, all connectors are displayed from the wire side, with the exception of the OBDII diagnostic connector.

Vehicle Wiring Reference Chart - Type 8

Wire Information				Connector Information		
Function	Color	Pin	Polarity	Location	Color	Pins
Lexus G350 (Smart Key) 2016						
HS CAN 1 High	Red	14	Data	Middle connector Body ECU on dash fuse box.	White	30
HS CAN 1 Low	Gray or White	13	Data	Middle connector Body ECU on dash fuse box.	White	30
HS CAN 2 High	Red	9	Data	Bottom 28 pin connector of ECU.	White	28
HS CAN 2 Low	Gray	10	Data	Bottom 28 pin connector of ECU.	White	28
BTX	Black	25	Data	Middle connector Body ECU on dash fuse box.	White	30
BRX	Green or White	26	Data	Middle connector Body ECU on dash fuse box.	White	30
Autolight	Red	28	Cut	Middle connector Body ECU on dash fuse box.	White	30
12V	Black or White	16	(+)	Located at OBDII.	Black	16
Parking Lights	Black	30	(-)	Middle connector Body ECU on dash fuse box.	White	30
PTS	Green	1	(-)	Push-to-Start Switch.	Black	10
SLP	Blue	4	(-)	Steering Lock under steering column.	Black	7
Trunk Release	Yellow	8	(-)	Bottom 28 pin connector of ECU.	White	28

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SmartStart/XL202 Installation Notes

The DBALL2 Remote Start Ready (RSR) solution offers three (3) configuration options to control your system: 3x OEM Lock Remote Start Activation, RF Kits or SmartStart (all sold separately). This section provides specific installation information for SmartStart and XL202.

SmartStart Revision A

SmartStart is **optional** and not included. It MUST be purchased separately.

Configuration Wires (White & Brown or Blue)
Cut Brown or Blue Loop

DBALL2 — CABLE — 4 pins — 2 pins, **not used** — D2D (4 pins, white) — SmartStart — LED

⚠ The modules must be connected in a specific order. Refer to the **Module Programming** section for more information.

SmartStart Revision B

SmartStart is **optional** and not included. It MUST be purchased separately.
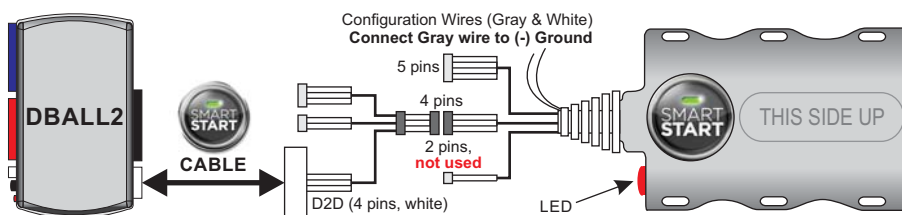
Configuration Wires (Gray & White)
Connect Gray wire to (-) Ground

DBALL2 — CABLE — 5 pins — 4 pins — 2 pins, **not used** — D2D (4 pins, white) — LED — SMART START — THIS SIDE UP

⚠ The modules must be connected in a specific order. Refer to the **Module Programming** section for more information.

RF Kit

The **optional** XL202 and antenna are not included and MUST be purchased separately.

DBALL2 — D2D XOVER — XL202 — LED — 4 — Prog. Button — Antenna
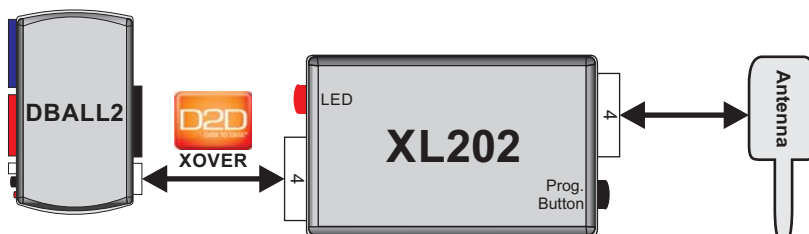
⚠ 1. Use the D2D Crossover (XOVER) cable that is provided with XL202, and NOT the one in the DBALL2 package.
2. The modules must be connected in a specific order. Refer to the **Module Programming** section for more information.

RF Kit & PKE Combination

Refer to the Passive Keyless Entry (PKE) Installation Guide (N2102T) for detailed wiring information.

RF Kit, PKE & SmartStart BT Combination

Refer to the Passive Keyless Entry (PKE) Installation Guide (N2102T) for detailed wiring information.

DIRECTED

Module Programming

⚠ Refer to the LED Diagnostics section for more information and for troubleshooting purposes.

Important

Make all the required connections to the vehicle, as described in the wiring diagram(s) found in this guide, and double check to ensure everything is correct prior to moving onto the next step.

⚠ **Warning!** To take advantage of advanced features, you must use XpressVIP 4.5 (and higher) or the Directechs Mobile app.

Flashing a module using your computer:

1. Connect the interface module to your computer using the XKLoader2.
2. Go to www.directechs.com using Internet Explorer, and select the **Flash Module** button.
3. Follow the instructions to select your vehicle, installation type, and configure your options.
4. Once you have configured the firmware options, click on the **FLASH** button.

Flashing a module using your smartphone or tablet

1. Connect the interface module to your XKLoader3.
2. Launch the Directechs Mobile app on your smartphone or tablet.
3. Select **FLASH YOUR MODULE** and follow the on screen instructions.

When the flashing operation is successful, you can proceed with the programming instructions below.

SmartStart Installation

⚠ The DBALL2 module **must** be disconnected from any power source before SmartStart can be connected to it. Failing to do so could damage DBALL2.

a. To ensure that the D2D communication between SmartStart and DBALL2 works properly, the Gray wire must be connected to a ground source (**Rev B** SmartStart), and the Brown or Blue loop must be cut (**Rev A** SmartStart).

b. Do **NOT** connect the 2-pin harness (on SmartStart). Power and ground will be provided by the DBALL2 D2D connector.

Connect SmartStart to DBALL2 using the D2D port.
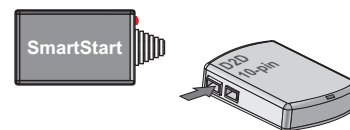
OR

XL202 Installation

Connect XL202 to DBALL using the D2D port.

---
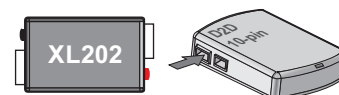
1 Connect the 10-pin, 12-pin and 14-pin harnesses to DBALL2, then wait until the LED turns ON solid red.

& Solid
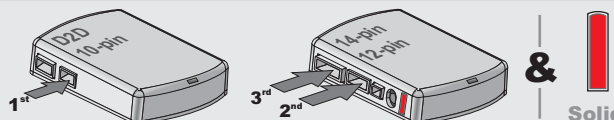
2 **Wait 4 seconds before turning the ignition ON.**
The LED flashes orange if the OEM remote starter is detected.
(See page 3 for more information).

Flashes

3 **Press** the Push-to-Start (PTS) button <u>twice</u> to turn the ignition ON. The green LED turns ON for 3 seconds and shuts OFF.

PUSH 2X **&** Solid x3 Secs **&** Off

4 If the LED flashes orange, **press** the programming button 5 times. The LED turns solid orange for 3 seconds: the programming is done. Otherwise proceed to the next step.

Flashes **&** Press x5 **&** Solid x3 sec.

5 **Press** the PTS button <u>once</u> more to turn the ignition OFF.

PUSH 1X

You have successfully completed the module programming sequence.

DIRECTED.

Module Reset

A module reset will only erase programming performed in the previous steps. All settings (firmware) and settings flashed to the module using the web config tool will not be affected.

1 If required for your installation, connect the 10-pin & 12-pin harnesses to the module. Press and hold the programming button, then connect the 14-pin harness to the module.
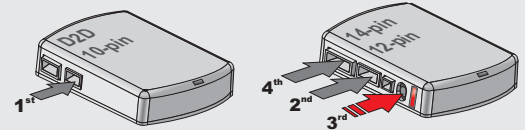
2 Wait 3 seconds until the LED turns ON solid orange then release the programming button. The LED turns ON solid red.

Solid & Release & Solid

Hard Reset

Warning Against Executing a Hard Reset!
A hard reset will revert the flashed firmware back to its default settings. Depending on the installation, some settings (such as RFTD and D2D options) may have to be reconfigured. See the **Feature & Option List** section of this guide.

1 If required for your installation, connect the 10-pin & 12-pin harnesses to the module. Press and hold the programming button, then connect the 14-pin harness to the module.
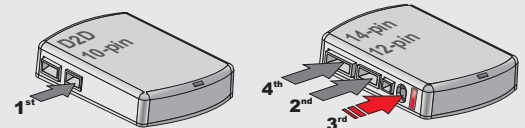
2 Wait 3 seconds until the LED turns ON solid orange, and wait 10 more seconds until the LED starts to flash orange and red.

Solid & Flashes

3 Release the programming button. The LED turns ON solid red.

Release & Solid

Feature and Option List

It is recommended to configure all the features and options listed below using the configuration tool found on the module flashing page on www.directechs.com. The web offers more options; however, manual configuration of the features is possible using the information on this page.

*** Default Option**

Feat.	Operation	Flashes/Option	Description
1	RF Output	**1. No RF Output***	Module is connected to a remote starter using a standard installation.
		2. RFTD Output	Module is connected to an XL202 using an RSR or RXT installation (when available).
		3. SmartStart	Module is connected to SmartStart using an RSR or RXT installation (when available).
2	Unlock Driver Priority	**1. Driver priority***	Unlocks only the driver door on first press and unlocks all doors on a second press within 5 seconds.
		2. All	Unlocks all doors on first press.

Feature Programming

Programming Button

To enter feature programming routine
- Turn the ignition ON, then OFF.
- **Within 5 seconds**, press and HOLD the programming button until the LED turns ON orange (after 3 seconds). Release the Programming button.
- The LED will flash green once slowly to indicate the feature number is 1. After a short delay, the LED flashes red rapidly to indicate the current option of feature 1 (i.e. 1x green followed by 1x red indicates feature 1 is set to option 1). The flashing sequence will repeat until a new command is entered.

Changing feature options
- Press the lock/arm or unlock/disarm button on aftermarket transmitter to change the option of the selected feature. When installing the DBALL in RSR using 3x OEM Lock Remote Start Activation only, there is no aftermarket transmitter on which to press lock/unlock to change the options of the selected feature. Tapping the green or blue lock/unlock wires on the black 10-pin harness to ground will change the option for the selected feature.
- The LED flashes red rapidly the number of times equal to the current option number. After a short delay, the LED flashes green slowly the number of times to indicate the current feature. The flashing sequence will repeat until a new command is entered.

Accessing another feature
- Press and release the programming button a number of times to advance from the current feature to the next desired feature.
- The LED flashes green slowly the number of times equal to the feature number. After a short delay, the LED flashes red rapidly to indicate the current option of the current feature. The flashing sequence will repeat until a new command is entered.

When the maximum number of features or options is reached, the LED will start flashing again from the first feature or option.

Once a feature is programmed
- Other features can be programmed.
- The feature programming can be exited.

Exiting feature programming
- No activity for 30 seconds; after 30 seconds, the LED will turn ON orange for 2 seconds to confirm the end of the programming sequence.
  OR
- Press and HOLD the programming button for 3 seconds. After 3 seconds, the LED will turn ON orange for 2 seconds to confirm the end of the programming sequence.

LED Diagnostics & Troubleshooting

LED	Description	Troubleshooting
Module Programming		
Off	Module has no power.	Make sure the D2D harness is connected or that the 12 Volt is present between the red and black wires. If the 12 Volt is present, the module may be defective.
Solid red	Waiting to begin the programming sequence.	Ensure the correct programming procedure is being followed.
Flashes red & green	Initialization failed.	Reset the module and complete the programming again. If the issue persists, please contact Technical Support.
Solid orange	Transponder functions were skipped.	(If compatible) when RXT mode is not desired or convenience features are needed, please reset and reprogram the module.
Flashes green	All required CAN networks has been detected.	Normal operation.
Flashes orange	1 of 2 CAN networks has been detected.	Normal operation
Flashes orange slowly	Key2GO initiated.	Please follow the steps indicated in "Module programming" to complete the Key2GO programming.
Solid green x 3 secs	Module was successfully programmed with all functions.	Normal operation
Solid orange x 3 secs	Module was successfully programmed without transponder functions.	Normal operation.
Module Programming - Error Codes		
Flashes red x 1	CAN2 not detected.	Check the CAN2 Orange/Green and Orange/Brown wire connections. Wake up the data bus by turning the ignition on and try again. If your installation does not require this connection, skip this step by pressing the programming button 5 times.
Flashes red x 1	J1850 not detected.	Check the J1850 wire connection. Wake up the data bus by turning the ignition on and try again.
Flashes red x 2	CAN1 not detected.	Check the CAN1 Tan and Tan/Black wire connections. Wake up the data bus by turning the ignition on and try again. If your installation does not require this connection, skip this step 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. Ensure the vehicle still operates correctly using the factory key.
Flashes red x 4	Bypass processing error.	The bypass calculation failed. Reset the module and try again. If the condition persists, please contact Technical Support.
Flashes red x 5	ISO 1 not detected.	The Yellow/Black wire did not detect the expected signal. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.
Flashes red x 6	ISO 2 not detected.	The Orange/Black wire did not detect the expected signal. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.
Flashes red x 7	MUX not detected.	The Violet/Green or Violet/Brown wire did not detect the expected voltage value. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.

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LED	Description	Troubleshooting
External module synchronization		
(Flashes red, red then orange) x 10	OBDII feature is not supported.	The diagnostic data bus was not detected, therefore the SmartStart features will be limited.
Activation Ground When Running (Status)		
Flashes green	Ground When Running (Status) command received.	The module has initialized the remote start sequence.
Flashes red & orange	Ignition ON command received.	The module has received the Ignition ON command and is processing the remote start sequence.
Flashes green quickly	Start ON command received.	The module has received the Start ON command and is processing the remote start sequence.
Flashes red x 10	PTS shutdown error.	The PTS output from the module was not activated due to safety protection.
Flashes red x 21	CAN bus incorrectly detected.	Verify the CAN1 and CAN2 connections. Refer to "Installation (wiring diagrams & vehicle wiring reference charts)" to check the connections.
Commands		
Flashes orange x 1	LOCK command received.	If the bypass module fails to flash, it did not receive the signal. Commands can come from RF or D2D.
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.	
Flashes orange x 6	AUX3 command received.	
Shutdown codes		
Flashes green x 1	Takeover successful.	Normal operation.
Flashes red x 1	Runsafe was not disabled.	No UNLOCK command was received prior to opening the door, or the 45 second timer expired in takeover mode.
Flashes red x 2	Brake was not detected.	The brakes were not detected, which prevents the system from shutting down the vehicle.
Flashes red x 3	Smart key was not detected.	The smart key was not detected, which prevents the system from shutting down the vehicle.
Flashes red x 4	Speed was detected.	The vehicle was detected as moving, which prevents the system from shutting it down.
RSR codes		
Flashes red x 7	3x OEM Lock Remote Start Activation was attempted when RFTD feature is disabled.	Activated from Web automatically when using RSR flash tool or can be done manually. Refer to feature programing section for more information.
Flashes red x 9	Feature error.	An RSR feature file mismatch was detected. Please contact Technical Support.

Parking Light Error Codes

The parking lights on your vehicle will flash a specific number of times 3 seconds following an unscheduled shutdown or failure to start. Each flashing pattern is described below.

Flashes	Diagnostic
1	Runtime expired.
2	Over-rev shutdown.
3	Low/No RPM.
4	Transmitter shutdown.
5	Brake shutdown.
6	Hood shutdown/Remote start safety override switch is ON*.
7	Remote start safety override switch is ON*.

* If the vehicle hood status is supported through data, it will also report a 7 flash safety override code.

Limited One Year Consumer Warranty

For a period of ONE YEAR from the date of purchase of a Directed Electronics remote start or security product, Directed Electronics. ("DIRECTED") promises to the original purchaser, to repair or replace with a comparable reconditioned piece, the security or remote start accessory piece (hereinafter the "Part"), which proves to be defective in workmanship or material under normal use, provided the following conditions are met: the Part was purchased from an authorized DIRECTED dealer; and the Part is returned to DIRECTED, postage prepaid, along with a clear, legible copy of the receipt or bill of sale bearing the following information: consumer's name, address, telephone number, the authorized licensed dealer's name and complete product and Part description.

This warranty is nontransferable and is automatically void if the Part has been modified or used in a manner contrary to its intended purpose or the Part has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defect in materials or construction.

TO THE MAXIMUM EXTENT ALLOWED BY LAW, EXCEPT AS STATED ABOVE, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NONINFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. DIRECTED HEREBY DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING DEALERS OR INSTALLERS. DIRECTED IS NOT OFFERING A GUARANTEE OR INSURANCE AGAINST VANDALISM, DAMAGE, OR THEFT OF THE AUTOMOBILE, ITS PARTS OR CONTENTS, AND DIRECTED HEREBY DISCLAIMS ANY LIABILITY WHATSOEVER, INCLUDING WITHOUT LIMITATION, LIABILITY FOR THEFT, DAMAGE, OR VANDALISM. IN THE EVENT OF A CLAIM OR A DISPUTE INVOLVING DIRECTED OR ITS SUBSIDIARY, THE PROPER VENUE SHALL BE SAN DIEGO COUNTY IN THE STATE OF CALIFORNIA. CALIFORNIA STATE LAWS AND APPLICABLE FEDERAL LAWS SHALL APPLY AND GOVERN THE DISPUTE. THE MAXIMUM RECOVERY UNDER ANY CLAIM AGAINST DIRECTED SHALL BE STRICTLY LIMITED TO THE AUTHORIZED DIRECTED DEALER'S PURCHASE PRICE OF THE PART. DIRECTED SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, DAMAGES FOR THE LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, THE MANUFACTURER DOES OFFER A LIMITED WARRANTY TO REPLACE OR REPAIR AT DIRECTED'S OPTION THE PART AS DESCRIBED ABOVE.

This warranty only covers Parts sold within the United States of America and Canada. Parts sold outside of the United States of America or Canada are sold "AS-IS" and shall have NO WARRANTY, express or implied. Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights and you may also have other rights that vary from State to State. DIRECTED does not and has not authorized any person or entity to create for it any other obligation, promise, duty or obligation in connection with this Part. For further details relating to warranty information of Directed products, please visit the support section of DIRECTED's website at: www.directed.com

920-10012-01 2013-07

This Interface kit / Data Bus Interface part has been tested on the listed vehicles. Other vehicles will be added to the select vehicle list upon completion of compatibility testing. Visit website for latest vehicle application guide. DISCLAIMER: Under no circumstances shall the manufacturer or the distributors of the bypass kit / data bus interface part(s) be held liable for any consequential damages sustained in connection with the part(s) installation. The manufacturer and it's distributors will not, nor will they authorize any representative or any other individual to assume obligation or liability in relation to the interface kit / data bus interface part(s) other than its replacement. N.B.: Under no circumstances shall the manufacturer and distributors of this product be liable for consequential damages sustained in connection with this product and neither assumes nor authorizes any representative or other person to assume for it any obligation or liability other than the replacement of this product only.

Protected by U.S. Patents: 5,719,551; 6,011,460 B1 *; 6,243,004 B1; 6,249,216 B1; 6,275,147 B1; 6,297,731 B1; 6,346,876 B1; 6,392,534 B1; 6,529,124 B2; 6,696,927 B2; 6,756,885 B1; 6,756,886 B2; 6,771,167 B1; 6,812,829 B1; 6,924,750 B1; 7,010,402 B1; 7,015,830 B1; 7,031,826 B1; 7,046,126 B1; 7,061,137 B1; 7,068,153 B1; 7,205,679 B1; Cdn. Patent: 2,320,248; 2,414,991; 2,415,011; 2,415,023; 2,415,027; 2,415,038; 2,415,041; 2,420,947; 2,426,670; 2,454,089; European Patent: 1,053,128; Pat. Pending: 2,291,306. Made in Canada.

Vehicle Takeover

Note: There is no vehicle takeover in this firmware. The vehicle will shut down as soon as a door is opened.

Pit Stop Mode

The Pit Stop Mode feature is practical when you need to stop and run an errand, but wish to keep the engine running.

1 **Stop** the vehicle in a safe parking spot and put the gear in Park (P).

& **P**

Stop & put vehicle in Park (P)

2 **Press** the button to remote start the vehicle.* The parking lights will flash once to indicate the vehicle is now in Pit Stop mode.
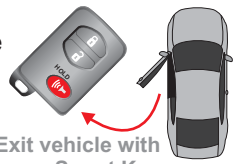
Press remote start button*

3 It is now safe to **leave** the engine running and **exit** the vehicle with the Smart Key in hand.

Note: We recommend that you always **lock** the doors of your vehicle when leaving it unattended.

Exit vehicle with Smart Key

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

Parking Light Error Codes

The parking lights on your vehicle will flash a specific number of times 3 seconds following an unscheduled shutdown or failure to start. Each flashing pattern is described below.

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1	Runtime expired.
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3	Low/No RPM.
4	Transmitter shutdown.
5	Brake shutdown.
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7	Remote start safety override switch is ON*.

* If the vehicle hood status is supported through data, safety override switch input will report 7 flashes.

Remote Start Ready (RSR)

Remote Start Ready (RSR) is a function that enables the interface module to remote start the vehicle completely on its own. Consequently, there is no need for an aftermarket or an OEM remote starter in order to start the vehicle from a distance.

3x OEM Lock Remote Start Activation

This solution includes the option to remote start your vehicle by pressing the Lock button 3 times consecutively. If your vehicle allows the OEM remote to remain active while the engine is running, you may shut down your remote starter by pressing the Lock button 3 times once more.

Note: The range offered by OEM remotes is limited and typically requires you to be within eyesight of the vehicle to control it.

List of Available Commands

Note that the information below is for Viper, Clifford and Python models. Icons and commands may differ depending on the remote brand and model purchased. Refer to your authorized installation center for more information.

Button(s)	Actions
🔒	Press & hold for 1 second to lock.
🔓	Press & hold for 1 second to unlock.
⟳	Press & hold for 1 second to remote start.
AUX	Press & hold for 5 seconds to activate the trunk release (optional).
f x1 + AUX	Press f once, then AUX to activate the right sliding door.
f x3 + AUX	Press f 3 times, then AUX to activate the left sliding door.
f x1 + ⟳	Press f once, then ⟳ to reset the remote starter runtime.

SmartStart Compatible

This system is compatible with Directed SmartStart 3.0. For a complete list of supported features, please visit www.mysmartstart.com.

What is SmartStart?

Now you can remote start, lock and unlock your car just by pushing a button on your smartphone; using the SmartStart App from Directed, the leader in vehicle security and remote start. The simple graphical interface gives you control over the following features of your installed remote start or security with remote start system:

• Lock/Arm
• Unlock/Disarm
• Remote Car Starter
• Trunk Release
• Panic
• Aux Channels

You can also control multiple vehicles – great for families – and assign more than one user to control a vehicle. It's easy with SmartStart!

But, this is only the beginning! SmartStart is loaded with additional features including GPS tracking, SmartSchedule, vehicle status, roadside assistance, home control, parked car finder and more.

3.0 enables a "Cloud-Connected Car" like never before, providing an entirely new level of 2-way interaction with your vehicle. Connectivity is managed through the Directed Cloud Services (DCS) network linking car, app, end user, and the Internet.

For more information, visit www.mysmartstart.com.