IntelliStart 4

➤Installation Guide

CLIFFORD G5
The Science of Security™

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 transmitter. 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 make the following recommendations to all users of this system:
    1. Never operate the system in an enclosed or partially enclosed area without ventilation (such as a garage).

    2. 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.

    3. It is the user's sole responsibility to properly handle and keep out of reach from children all remote control transmitters to assure that the system does not unintentionally remote start the vehicle.

    4. THE 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 AT ALL TIMES REMAIN CLOSED.

- 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 will be 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.

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.

before beginning the installation

WARNING! This system is intended for automatic transmission, fuel-injected vehicles only. Installation in a standard transmission vehicle maybe dangerous and is contrary to its intended use.

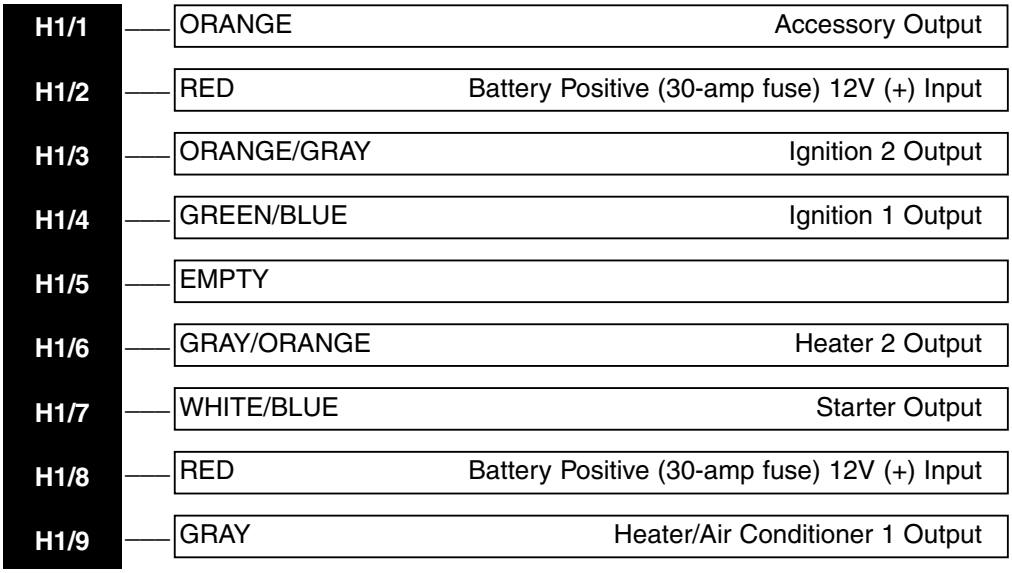
- Please read this entire installation guide before beginning the installation. The installation of this remote start system requires interfacing with many of the vehicle's systems. Many new vehicles use low-voltage or multiplexed systems that can be damaged by low resistance testing devices, such as test lights and logic probes (computer safe test lights). Test all circuits with a high quality digital multimeter before making connections.
- Do not disconnect the battery if the vehicle has an anti-theft-coded radio. If equipped with an air bag, avoid disconnecting the battery if possible. Many airbag systems will display a diagnostic code through their warning lights after they lose power. Disconnecting the battery requires this code to be erased, which can require a trip to the dealer.
- Remove the domelight fuse. This prevents accidentally draining the battery.
- Roll down a window to avoid being locked out of the car.

after the installation

- Test all functions. Refer to the "Using Your System" section of the Owner's Guide when testing.
- Complete the vehicle Safety Check outlined in this manual prior to reassembly.

h1 harness wire connection guide

h1 harness wiring diagram



h1 harness wiring guide

h1 heavy gauge harness wiring guide

All except the red heavy gauge wires in this harness are used to energize high current circuits in the vehicle. It is crucial that these connections are made correctly so that they are capable of handling the current demands. For this reason, scotch locks, T-taps and other such connectors should not be used.

h1/1 orange (+) accessory output (retained)

Connect this wire to the accessory wire in the vehicle that powers the accessories in the vehicle. This wire will retain power for 10 minutes after the ignition key is turned off, or when a door is opened.

h1/2 red (+)12V input

> *NOTE: If the factory supplies two separate (+) 12V feeds to the ignition switch, connect one RED wire of the intellistart to each feed at the switch.*

Remove the 30 amp fuse prior to connecting to the 12V wire and do not replace until the intellistart installation is complete. This wire is the source of current for all the circuits the IntelliStart will energize. It must be connected to a high current source. It can be connected to the battery or the 12V power feed to the ignition key switch (the battery is preferred).

h1/3 orange/gray (+) output to second ignition circuit

Connect this wire to the second ignition wire in the vehicle.

h1/4 green/blue (+) ignition output

Connect this wire to the ignition wire in the vehicle.

h1/6 gray/orange heater/air conditioner 2 output (retained)

Connect this wire to the second accessory wire in the vehicle that powers the climate control system. This wire will retain power for 10 minutes after the ignition key is turned off, or until a door is opened.

h1/7 white/blue (+) starter output

Connect this wire to the starter wire in the vehicle.

h1/8 red (+)12V input

> *NOTE: If the factory supplies two separate (+) 12V feeds to the ignition switch, connect one RED wire of the satellite to each feed at the switch.*

Remove the 30 amp fuse prior to connecting this wire and do not replace them until the satellite has been plugged into the control module. This wire is the source of current for all the circuits the relay satellite will energize. It must be connected to a high current source. Since the factory supplies (+) 12V to the key switch that is used to operate the motor, it is recommended that this wire be connected there.

h1/9 gray heater/air conditioner 1 output (retained)

Connect this wire to the accessory wire in the vehicle that powers the climate control system. This wire will retain power for 10 minutes after the ignition key is turned off, or until a door is opened.

h2 harness wire connection guide

h2 harness wiring diagram

H2/1	BLACK/GREEN	Manual Transmission Mode (-)
H2/2	VIOLET/WHITE	Remote Start Smart Lock
H2/3	WHITE/BLACK	Hood Trigger Input (-)
H2/4	WHITE/VIOLET	Factory Alarm Disarm
H2/5	RED	Battery Positive (5-amp fuse) 12V (+) Input
H2/6	BLUE/ORANGE	Third Ignition Trigger (Status Out)
H2/7	BLACK	Ground
H2/8	BLUE/BLACK	Negative Switching Wait-To-Start Bulb (Diesel)
H2/9	BLUE/YELLOW.	Positive Switching Wait-To-Start Bulb (Diesel)
H2/10	BLUE/GREEN	Shut Down (+)
H2/11	BLUE/WHITE	Brake Light Input (+)
H2/12	BLACK/GRAY	RPM Input

h2 harness wiring guide

H2/1–black/green manual transmission mode

warning! This system is intended for automatic transmission, fuel-injected vehicles only. Installation in a manual transmission vehicle may be dangerous and is contrary to its intended use and may result in injury or death.

This wire needs to be grounded when Intellistart 4 is installed on a vehicle with automatic transmission

H2/2–violet/white remote start smart lock

This wire produces a 200mA negative output when the remote start has been activated locking the doors during the remote start sequence. Connect this to the lock wire of the vehicle, only if the doors must be unlocked to remote start the vehicle.

H2/3–white/black hood input

This wire will shut down the remote start if the hood is opened during a remote start sequence. Connect this to the hood pin switch wire that shows ground when the hood is opened. Use this wire or, preferably, the wire from the control module. Do not use both wires (from control module and H2/3).

H2/4–white/violet factory alarm disarm

This wire will produce a 200mA output prior to a remote start sequence. Connect this wire to the factory alarm disarm wire in the vehicle.

H2/5–red battery Positive (5-amp fuse) 12V (+) input

Connect this wire to a constant (+) 12V source.

H2/6–blue/orange third ignition trigger (status out)

This wire will trigger an additional relay for a third ignition output. When needed, connect this wire to an optional relay.

H2/7–black ground

H2/8–blue/black (-) and 9–(+) blue/yellow diesel wait to start

There are two methods for interfacing the remote engine starting on diesel engines. You can either interface via the "Wait-to-Start" light which will trigger the starter when the light turns off, or you can use the built-in 20 second timer which cranks the engine 20 seconds after the remote start command is received.

Using the 20 second delay: Using the Installer-Programming for the system, change the engine setting to "Diesel Engine," or use the CliffNet Wizard Pro installation software to program the system. The CliffNet Wizard Pro will also allow you to customize the delay to an interval other than 20 seconds.

H2/10–blue/green (+) shut down

1. When the intellistart is programmed to Automatic transmission mode (pin–1 black/green is NOT grounded), then connect the pin–10 blue/green wire to the vehicles back up light wire. This wire should show +12V when the shifter is in reverse, and show no voltage or ground when NOT in reverse.
2. When the intellistart is programmed to Manual transmission mode (pin–1 black/green is grounded) connect the pin–10 blue/green wire to the parking brake indicator wire. The wire should show ground when the parking brake is set, and +12V when the parking brake is NOT set.

H2/11–brake light input (+)

The IntelliStart monitors the brake light to prevent an unauthorized driver from driving the car. The brake light input wire MUST be connected and brake light must be in working condition. This connection is not necessary if the alarm is already connected to the brake with the H2/11 wire on the main control module (preferred).

H2/12–black/gray rpm input

This wire monitors the RPM of the vehicle during remote start sequence. Connect this wire to the vehicle coil's negative side or the non-common fuel injector wire.

> *NOTE: When installing Intellistart 4 with a Clifford system that has its own tach wire connection. ONLY connect the tach wire of the Intellistart. DO NOT connect the alarm tach wire or both tach wires.*

intellistart installation

> *IMPORTANT! Do not use any testing tool other than a digital multi-meter to prevent costly damage to the vehicle. Use of a test light may cause grounding of sensitive electrical components that can damage the on-board vehicle computer and processors resulting in substantial cost for replacement.*

> *NOTE: Many of the wires described below will have already been located when the security system was installed. They are presented here for clarification.*

The control module and the Intellistart module communicate through the CliffNet interface cable, when plugged into their respective ports on each module. Ensure that both modules are mounted in the vehicle so that this cable can reach both modules.

When you have determined where each component will be located, your next step is to find the connecting wires in the vehicle for the security system.

obtaining constant 12V

Remove the two 30 amp fuses prior to connecting to the 12V wires and do not replace them until the intellistart installation is complete. These wires are the source of current for all the circuits the IntelliStart will energize. They must be connected to a high current source. These can be connected to the battery or the 12V power feed to the ignition key switch (the battery is preferred).

finding the 12V switched ignition wire

The ignition wire is powered when the key is in the run or start position. This is because the ignition wire powers the ignition system (spark plugs, coil) as well as the fuel delivery system (fuel pump, fuel injection computer). Accessory wires lose power when the key is in the start position to make more current available to the starter motor.

warning! On vehicles with air bags or supplemental restraint systems (SRS) you may notice a bright yellow tube with small wires in it marked SRS underneath the steering column near the key cylinder. DO NOT tamper or unplug these for any reason to prevent costly damages to your vehicle or personal injury. Tampering may cause unintended deployment of airbags.

warning! Make sure the car is not in gear.

How to find (+)12V ignition with your multimeter:

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the ignition wire. The steering column harness or ignition switch harness is an excellent place to find this wire.
4. Turn the ignition key switch to the run position. If your meter reads (+)12V, go to the next step. If it doesn't, probe another wire.
5. Now turn the key to the start position. The meter display should stay steady, not dropping by more than a few tenths of a volt. If it drops close to or all the way to zero, go back to Step 3. If it stays steady at (+)12V, you have found an ignition wire.

finding the starter wire

The starter wire provides 12V directly to the starter or to a relay controlling starter. In some vehicles, it is necessary to power a cold start circuit. A cold start circuit will test exactly like a starter circuit, but it does not control the starter. Instead, the cold start circuit is used to prime the fuel injection system for starting when the vehicle is cold.

How to find the starter wire with your multimeter:

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.

3. Probe the wire you suspect of being the starter wire. The steering column is an excellent place to find this wire. Remember you do not need to interrupt the starter at the same point you test it. Hiding your optional starter kill relay and connections is always recommended.
4. Turn the ignition key switch to the start position. Make sure the car is not in gear! If your meter reads (+)12V, go to the next step. If it doesn't, probe another wire.
5. Cut the wire you suspect of being the starter wire.
6. Attempt to start the car. If the starter engages, reconnect it and go back to Step 3. If the starter does not turn over, you have the right wire.

finding a (+) brake light wire

Most vehicles use a (+) brake light circuit. The (+) brake light wire is often found near the brake pedal.

How to find a (+) brake light flash wire with your multimeter:

1. Set to DCV or DC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Probe the wire you suspect of being the brake light wire.
4. Press the brake pedal. If your meter shows (+)12V, release the pedal and make sure it goes back to zero.
5. If it does return to zero, this is the correct brake wire.

finding the accessory/heater wire

An accessory/heater wire will show +12V when the key is in the accessory and run positions. It will not show +12V during the cranking cycle. There will often be more than one accessory wire in the ignition harness. The correct accessory wire will power the vehicle's climate control system. Some vehicles may have separate wires for the blower motor and the air conditioning compressor. In such cases, it will be necessary to add a relay to power the second accessory wire.

finding the rpm input wire

To test for a tachometer wire, a multimeter capable of testing AC voltage must be used. The tachometer wire will show between 1V and 6V AC. In multi-coil ignition systems, the system can learn individual coil wires. Individual coil wires in a multi-coil ignition system will register lower amounts of AC voltage. Also, if necessary, the system can use a fuel injector control wire for engine speed sensing. Common locations for a tachometer wire are the ignition coil itself, the back of the gauges, engine computers, and automatic transmission computers.

warning! On vehicles with air bags or supplemental restraint systems (SRS) you may notice a bright yellow tube with small wires in it marked SRS underneath the steering column near the key cylinder. DO NOT tamper or unplug these for any reason to prevent costly damages to your vehicle or personal injury. Tampering may cause unintended deployment of airbags, resulting in injury.

IMPORTANT! Do not use any testing tool other than a digital multi-meter to prevent costly damage to the vehicle. Use of a test light may cause grounding of sensitive electrical components that can damage the on-board vehicle computer and processors resulting in substantial cost for replacement.

How to find a tachometer wire with your multimeter:

1. Set to ACV or AC voltage (12V or 20V is fine).
2. Attach the (-) probe of the meter to chassis ground.
3. Start and run the vehicle.
4. Probe the wire you suspect of being the tachometer wire with the red probe of the meter.
5. If this is the correct wire the meter will read between 1V and 6V and fluctuate with the RPM of the motor.

finding the wait-to-start bulb wire for diesels

NOTE: The wait-to-start for diesel applications can be accomplished by programming or interfacing with the Wait-to-Start dashboard indicator light.

This wire illuminates the bulb until the vehicle's glow plugs are properly heated. When the light goes out the vehicle can be started. This wire is always available at the connector leading to the bulb in the dashboard. It can also be found at the Engine Control Module (ECM) in many vehicles.

To test and determine the polarity of this wire:

1. Set your multimeter to DCV or DC voltage (12 or 20V is fine).
2. Attach the (+) probe of the meter to (+)12V.
3. Probe the wire that you suspect leads to the bulb with the (-) probe of the meter.
4. Turn the ignition switch to the ON position.
5. If the meter indicates 12 volts until the light goes out you have isolated the correct wire and the wire's polarity is negative (ground while the bulb is on).
6. If the meter reads zero volts until the light goes out and then reads 12 volts, you have isolated the correct wire and the wire's polarity is positive.

programming

NOTE: Refer to the installation instructions with the security system for programming instructions related to the security system.

*IMPORTANT: The RPM programming step is **mandatory**. It must be **completed** for the IntelliStart4 to operate properly.*

cliffnet wizard pro installation software programming

Cliffnet Wizard Pro provides access to all available system features and some that are not available when manually programming with the Valet switch. Cliffnet Wizard Pro is compatible with Microsoft Windows 95/98/2000/ME/XP/NT so most programming operations can be accomplished by pointing and clicking with a mouse. This eliminates the need for programming grids and lengthy programming sequences. For a complete guide to system programming using the Cliffnet Wizard Pro refer to the Cliffnet Wizard help menu.

rpm programming

- Drive the vehicle to an open area and allow the engine to warm up until the engine RPM drops to normal idle speed.
- Place the engine in park or neutral and set the parking brake.
- Enter the feature for rpm programming (described in the Programmable Features section of the security system installation manual) and press the arm/disarm button.
- The lights will flash twice to confirm the engine RPM has been learned.

NOTE: If only one flash is seen, the engine RPM was not successfully learned. Test the tach wire connection and retry.

- Turn the ignition off and activate remote start to test.

engine type petrol/diesel

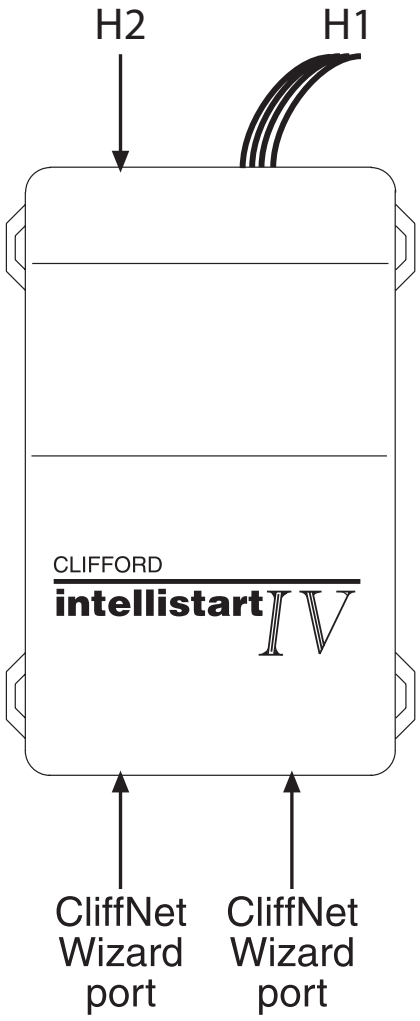
NOTE: If the Wait-to-Start dashboard indicator is being used for diesel application skip this programming step.

- Petrol: The IntelliStart will crank the engine three seconds after the ignition is turned on or after input on the wait-to-start wires ceases.
- Diesel: The IntelliStart will crank the engine 20-seconds after it turns the ignition on and will ignore the wait-to-start input wires. The Cliffnet Wizard Pro allows you to customize the delay to an interval other than 20-seconds.

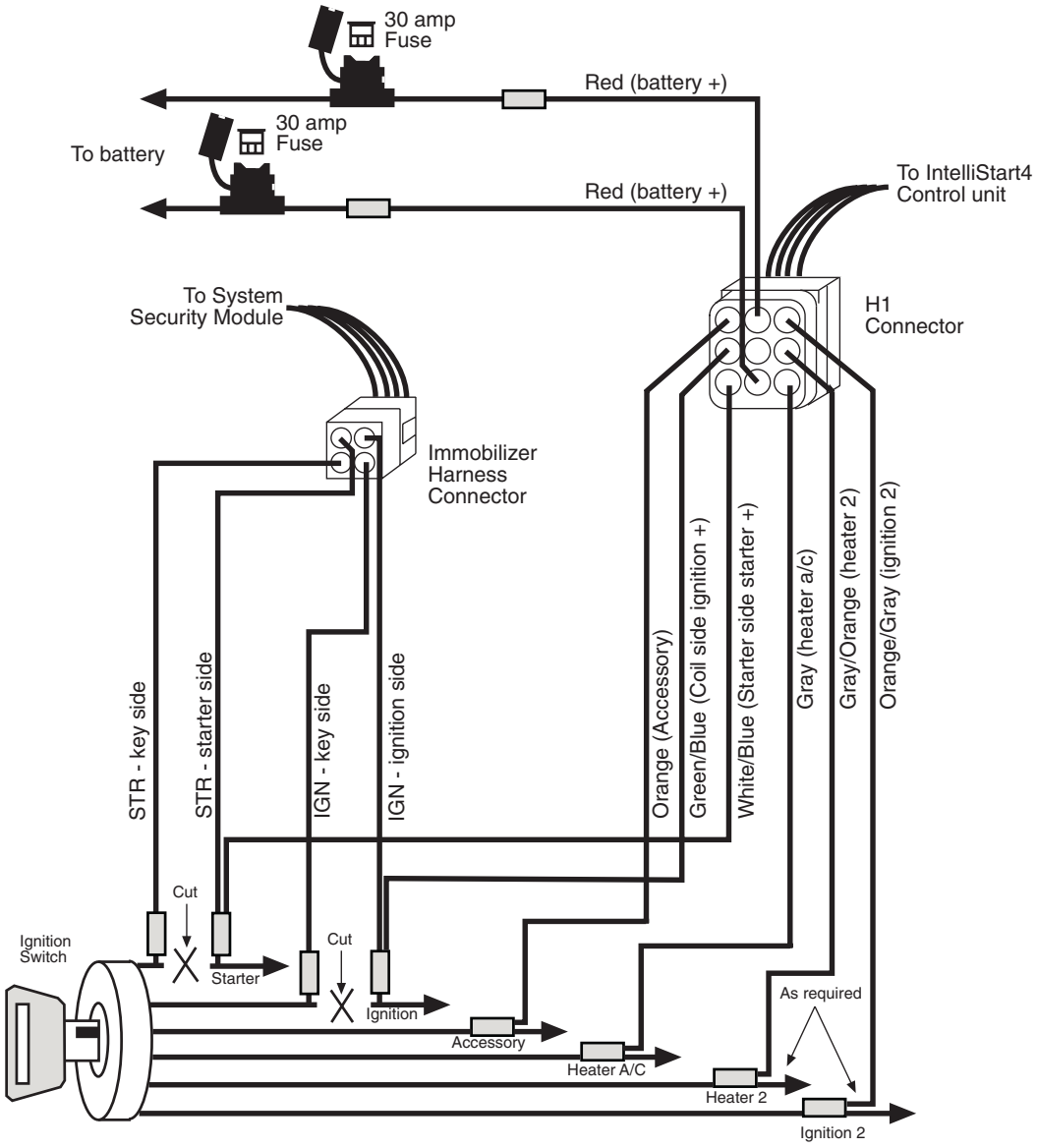
NOTE: RPM must be reprogrammed after changing this feature.

wiring reference section

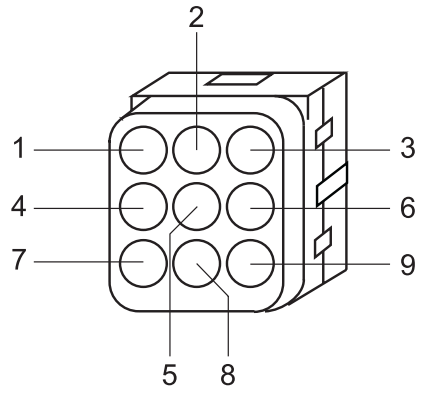
intellistart module connector location



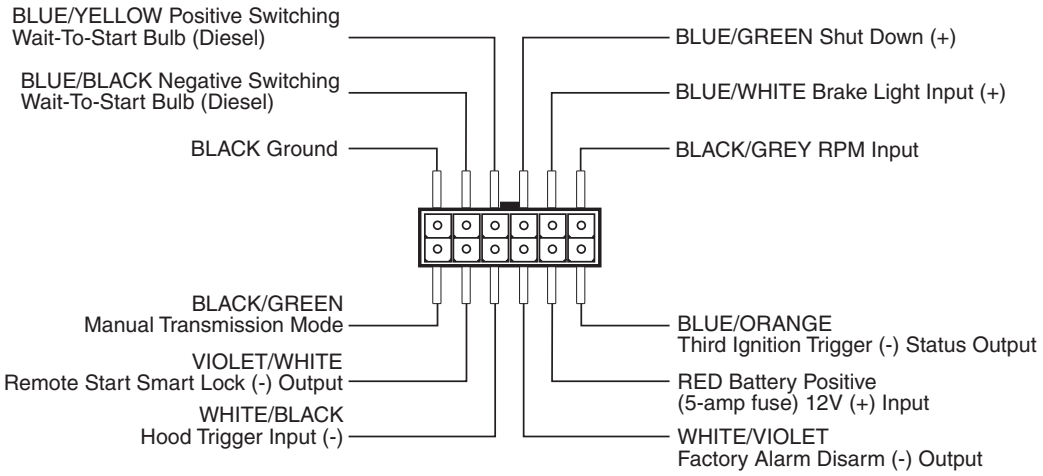
intellistart wiring diagram



h1 connector



h2 connector



notes