

Idle Smart Master Install Guide

A comprehensive guide for installing Idle Smart systems across all Class 8 truck manufacturers, including J1939 (9-pin), DL1J1939 (Volvo/Mack), and RP1226 Integrations

Version 1.1

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Questions? Contact Idle Smart Customer Support at 913-744-4357.

CAUTION – INSTALLATION SAFETY NOTICE

To prevent injury, equipment damage, or voiding of warranty coverage:

- Always follow installation procedures specific to the Original Equipment Manufacturer (OEM) guidelines.
- Do not install this product without first reviewing and understanding the installation instructions for the specific truck and engine type.
- Carefully read all kit labels and components prior to beginning installation.
- Use appropriate safety equipment and professional tools during the installation process.

Failure to follow these instructions may result in personal injury, equipment malfunction, or non-compliance with insurance and warranty requirements. Installing Idle Smart doesn't violate your trucks' warranties as it doesn't require cutting wires or ripping out existing systems.

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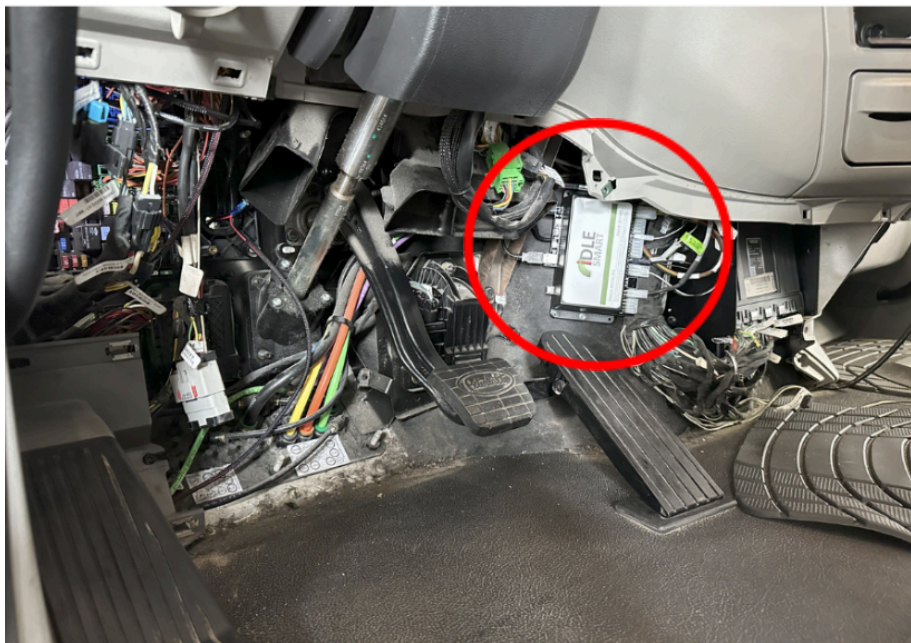
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The Control Module is labeled to match up each component to its adjacent location.

Step 1 (All OEMs): Run All Harnesses and Mount Idle Smart Control Module

Neatly bundle all male ends of the harness using a zip tie. Route the bundled harness behind the paneling below the steering wheel, positioning it either over the air duct or beneath the top of the dash, whichever area provides the most space. Use zip ties to secure the harness along the route to prevent any movement. Finally, plug each connector into its corresponding labeled port on the control module.



Step 2 (All OEMs): Hook Up the 12V Power Harness to a Constant Battery Power

Locate the 12V power harness, labeled “12V POWER” with the black 4-pin Molex connector, and insert the 4-pin black Molex male connector from the harness into the 4-pin black Molex female connector on the Idle Smart control module labeled “12V PWR”.

Next, take the unterminated red and black wires from the “12V POWER” harness:

- Red wire – Connect to any spare fuse that provides direct, constant battery power (5A or 10A fuse required).
 - **It should not lose power when the key is cycled.**
- Black wire – Secure to a ground post on the truck.

Once connected, the Idle Smart control module will indicate power by displaying a blinking amber light near the “12V PWR” harness connection on the control module..

Important: If preferred, power can be wired directly to the battery using an inline fuse (not provided by Idle Smart). However, this is optional and not required for proper operation. We recommend a 5 or 10 amp inline fuse, should you choose to go this route.

Step 3 (All OEMs): Installing and Mounting the Idle Smart On/Off Switch

Locate the “KILL SWITCH” harness, which includes an ON/OFF toggle switch. Plug the male end of the harness into the port on the control module labeled “KILL SW.”

Securely mount the switch on the dashboard—ideally in an available spare rocker switch location.

If a dash-mounted switch is not preferred or feasible, the switch may be tucked behind the dash instead. Just ensure it is still easily accessible if needed for troubleshooting or service.

Step 4 (OEM-specific): Install ECM Data Link Connection

9-Pin OBD Connection (Peterbilt, Kenworth, Freightliner, International, and Western Star)

1. Locate and Connect the 3-Pin Y Connector

- Find the Idle Smart 3-pin Y connector, labeled “STANDARD INLINE Y-CABLE” with gray sheathing.
- Plug the white 4-pin Molex side of the connector into the Idle Smart control module in the port labeled J1939.

2. Access the Truck's 9-Pin Diagnostic Connector

- Identify the truck-side 9-pin diagnostic connector (Do not use an ELD or GPS 9-pin).
- Disconnect the diagnostic connector from the truck to expose the backside pin holes.
- Use the blue extraction tool (provided) and reference the installation photo to complete the following steps.

3. Re-Pinning the OEM Wires

- **Ground Wire (Pin A)**
 - Remove the OEM ground wire from Pin A on the back of the OBD port.
 - Insert Idle Smart's black wire into Pin A.
 - Re-pin the OEM ground wire into the female side of the 3-pin Amphenol connector, directly across from the Idle Smart black wire on the male side.
- **CAN High Wire (Pin C)**
 - Remove the OEM CAN High (CanHi) wire from Pin C on the back of the OBD port.
 - Insert Idle Smart's yellow wire into Pin C.
 - Re-pin the OEM CanHi wire into the female side of the 3-pin Amphenol connector, directly across from the Idle Smart yellow CanHi wire on the male side.
- **CAN Low Wire (Pin D)**
 - Remove the OEM CAN Low (CanLo) wire from Pin D on the back of the OBD port.

- Insert Idle Smart's green wire into Pin D.
- Re-pin the OEM CanLo wire into the female side of the 3-pin Amphenol connector, directly across from the Idle Smart green CanLo wire on the male side.
- **Secure the Connection**
 - Use needle-nose pliers to insert the green triangle lock, securing the pins in place.

DL1/J1939 Connection (Volvo/Mack)

1. **Locate and Connect the Idle Smart Y-Harness, labeled "VOLVO INLINE-Y"**
 - Find the Idle Smart 2-pin Amphenol Y connector with gray sheathing.
 - Plug the white 4-pin Molex side of the connector into the Idle Smart control module in the port labeled "J1939."
2. **Connect to the DL1 Receptacle**
 - Insert the Idle Smart 2-pin Amphenol connector into the DL1 receptacle on the truck.
 - If an existing system is already connected to this receptacle, disconnect it.
 - Plug the Idle Smart connector into the receptacle first, then use the Idle Smart Y-harness to reconnect any previously installed systems.



Note: If there is no existing system connected to the **DL1 receptacle**, a terminating resistor is likely plugged into the port. After connecting **Idle Smart** to the **DL1 receptacle**, take the **terminating resistor** and plug it into the back of the Idle Smart Y-harness to maintain proper network communication.

⚠ CAUTION: *Idle Smart must be the first connection in the DL1 receptacle to ensure proper functionality.*

RP1226 Connection (all OEMs)



1. Locate the Truck's RP1226 Connector

- The RP1226 connector location varies by OEM and truck spec.
- Most trucks are equipped with multiple RP1226 ports - any of these should work for installation.

2. Connect Idle Smart to the RP1226 Port

- Plug the Idle Smart RP1226 harness, labeled "RP 1226 Y CABLE" into the control module port labeled "J1939."
- Connect the Idle Smart RP1226 connector to the truck's RP1226 port and lock it in.

3. Connecting Additional Systems

- If an existing system is already using the RP1226 port, disconnect it.
- Plug the Idle Smart connector into the RP1226 port first.
- Use the Idle Smart Y-harness to daisy-chain the existing system back into the connection.

⚠ CAUTION: Idle Smart ***must be the first connection*** in the RP1226 chain. Any additional RP1226 connections should be ***daisy-chained off the Idle Smart harness*** for proper functionality.

Step 5 (OEM-Specific): Ignition Switch and Harness Installation

Standard Ignition Switch (Peterbilt, Kenworth, Freightliner, Western Star)

1. Locate the Idle Smart Ignition Switch Harness

- Find the multi-colored harness, labeled "IGNITION SWITCH" with a white (male) 6-pin Molex connector.
- Connect it to the Idle Smart control module in the female port labeled "IGNITION."

2. Access the Truck's Ignition Switch

- Remove the plastic steering column cover.
- Disconnect the black plastic ignition receptacle from the truck's ignition switch.

3. Connect the Idle Smart Ignition Switch

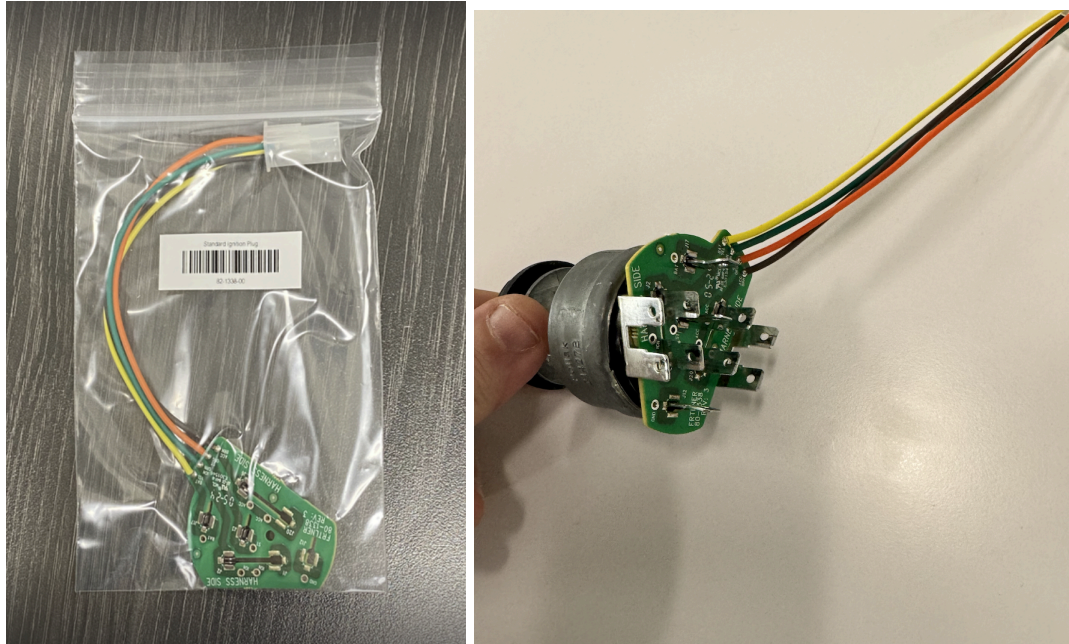
- Locate the Idle Smart ignition switch, labeled "STANDARD IGNITION PLUG".
- Slide the Idle Smart ignition switch plug through the terminals on the OEM ignition switch.
 - **Note:** The plug will not fully press down - **this is normal**.
- Connect the "STANDARD IGNITION PLUG" to the "IGNITION SWITCH" harness as seen below.

4. Reassemble

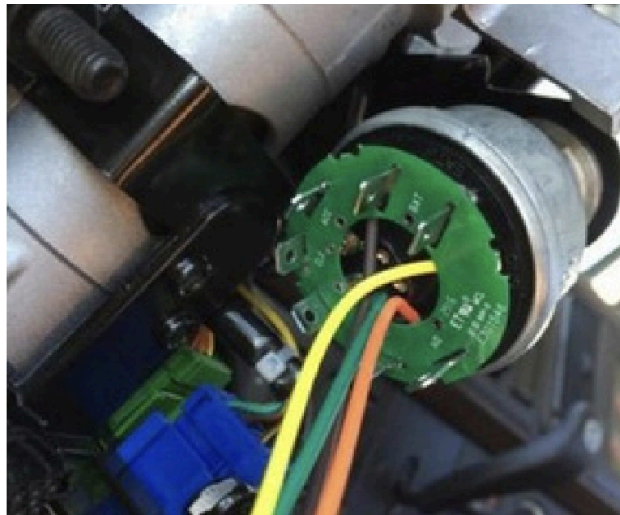
- Reattach the black plastic ignition receptacle to the truck's ignition switch.
- Ensure the assembly is secure and aligned as shown in the diagram below.



Note: For Peterbilts, Kenworths, Freightliners, and Western Stars, your ignition plug may resemble the one shown in the photo below, but the installation is the same.



Volvo Ignition Switch



1. Locate and Connect the Idle Smart Ignition Switch Harness

- Find the multi-colored harness, labeled "IGNITION SWITCH" with a white (male) 6-pin Molex connector.
- Connect it to the Idle Smart control module in the female port labeled "IGNITION."

2. Access the Volvo Ignition Switch

- Remove the plastic steering column cover to expose the Volvo ignition switch.
- Disconnect the black plastic Volvo ignition receptacle from the ignition switch.

3. Install the Idle Smart Volvo Ignition Switch

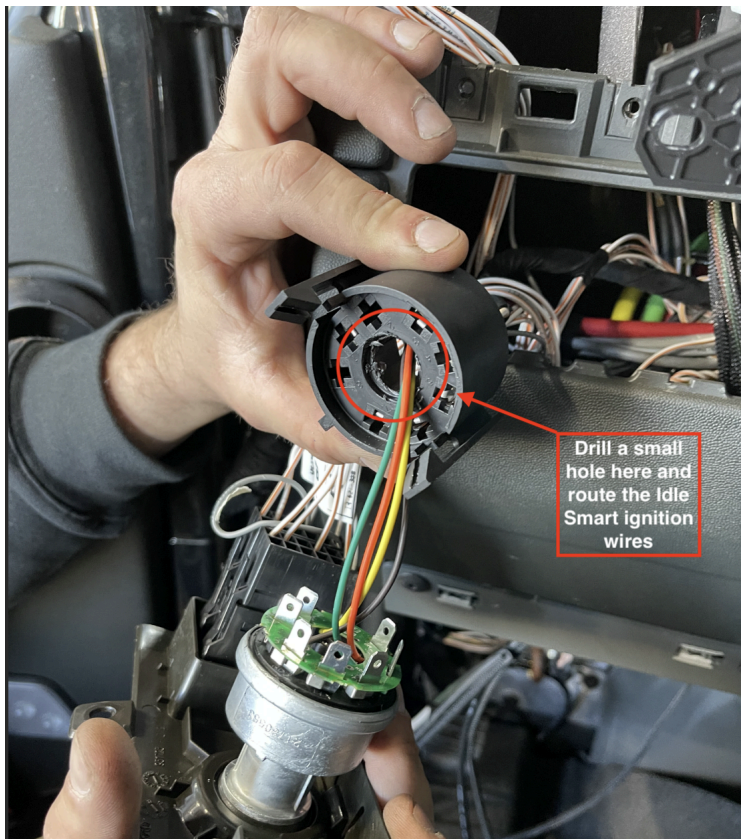
- Locate the Idle Smart Volvo ignition plug, labeled “VOLVO IGNITION PLUG”.
- Slide the Idle Smart plug through the terminals on the OEM Volvo ignition switch (Pictured Above).

4. Modify the OEM Volvo Ignition Connector

- Carefully drill a small hole in the center of the plastic housing of the Volvo Ignition connector
- Route the Idle Smart Ignition Plug Wires through the hole (See Photo B below)

5. Connect the “VOLVO IGNITION PLUG” to the Idle Smart “IGNITION SWITCH” Harness.

6. Reconnect the Ignition switch to the Ignition Connector (see Photo C below)



(Photo B)



(Photo C)

International Ignition Switch

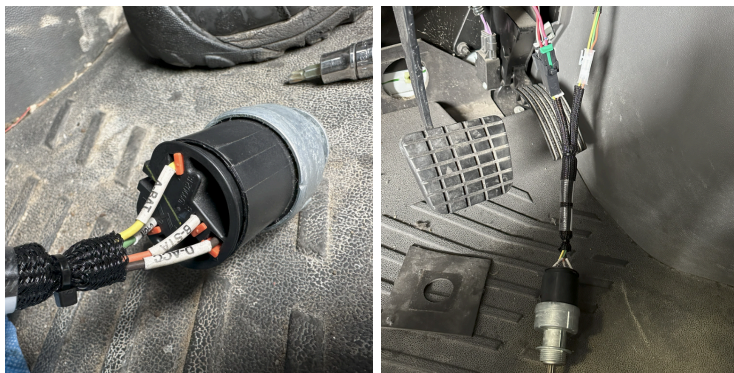
- 1. Locate and Connect the Idle Smart Ignition Switch Harness**
 - Find the multi-colored harness, labeled "IGNITION SWITCH", with a white (male) 6-pin Molex connector.
 - Connect it to the Idle Smart control module in the female port labeled "IGNITION."
- 2. Attach the International Ignition Switch**
 - Find the "INTERNATIONAL IGNITION PLUG".
 - Plug the white connector into the end of the "IGNITION SWITCH" harness.
- 3. Identify and Connect Wires**

- On the other end of the harness, you will see four wires: Orange, Green, Yellow, and Brown.
- Locate the back of the truck's ignition switch, where you will find labels: IGN, BAT, STA, ACC.

4. Rewire Connections

- Remove one wire at a time from the OEM ignition plug (e.g., STA).
- Plug the corresponding Idle Smart wire (e.g., Orange - Crank) into the vacant pin.
- Insert the removed OEM wire into the matching port on the 4-pin black connector of the Idle Smart "IGNITION SWITCH" harness.
- Repeat this process for all four wires:
 - **Green** → Ignition Power (IGN)
 - **Orange** → Crank (STA)
 - **Yellow** → Battery Power (BAT)
 - **Brown** → Accessory Power (ACC)

5. Connect the "INTERNATIONAL IGNITION PLUG" TO "IGNITION SWITCH" harness



Tip:

International Ignition wires are often unlabeled and/or have similar colors (2 gray & 2 red). To determine which wire is which, here's a simple guide using a multimeter:

The battery wire should be the only wire that has voltage with the key in the 'off' position. Using a multimeter/voltmeter, check each of the OEM wires to determine which one has power in the key off position. That is your battery wire and will pair with the Idle Smart Yellow wire.

The Accessory wire will have power with the key in the ACC position. Using a voltmeter, determine which of the remaining 3 wires has voltage in the ACC position. Once identified, that wire will pair with the Idle Smart brown wire.

The IGN wire will have power with the key in the IGN/On position. Using a voltmeter, determine which of the remaining 2 wires has voltage in the IGN/On position. Once identified, that wire will pair with the Idle Smart green wire.

The remaining wire will be your STA/Crank wire and will pair with the Idle Smart orange wire. DO NOT crank the engine, it's safer to use the process of elimination to determine the correct crank wire.

Mack Ignition Switch

1. Locate and Connect the Idle Smart Ignition Switch Harness

- Find the multi-colored harness, labeled "IGNITION SWITCH", with a white (male) 6-pin Molex connector.
- Connect it to the Idle Smart control module in the female port labeled "IGNITION."

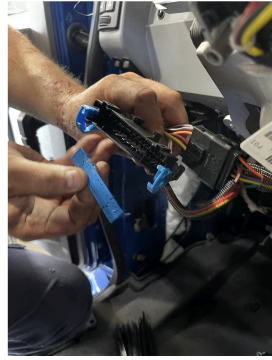
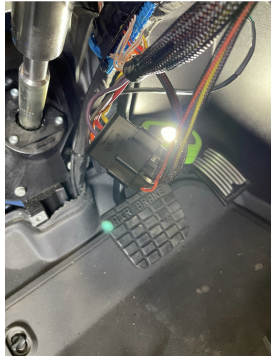
2. Attach the Mack Ignition Switch

- Locate the "MACK IGNITION PLUG".
- Plug the white connector into the end of the ignition switch harness.

3. Rewire the Ignition Connections

- One at a time, remove a wire from the OEM ignition plug (e.g., STA).
- Insert the corresponding Idle Smart wire (e.g., Orange - Crank) into the vacant pin.
- Connect the removed OEM wire to the corresponding port on the 5-pin black connector of the Idle Smart harness.
- Repeat this process for all five Mack wires to ensure proper wiring:
 - Green → Ignition Power (IGN)
 - Orange → Crank (STA)
 - Yellow → Battery Power (BAT)
 - Brown → Accessory Power (ACC)
 - Red → Backup Battery (if applicable)
- **Important Wiring Notes**
 - Always connect one pin at a time to avoid confusion.
 - Example: Plug the OEM Red wire (BAT) into the corresponding Idle Smart Red (BAT) port on the black 5-pin connector.
 - **IT IS HIGHLY RECOMMENDED THAT YOU DO ONE PIN AT A TIME**

4. Connect the "MACK IGNITION PLUG" to the "IGNITION SWITCH" Harness



Step 6 (All OEMs): Cabin Temperature and Tablet/Display Installation

Note: This step is specific to the Cabin Comfort Temperature Monitoring System. If you are pairing Idle Smart with an Electric APU (EPU), also called the Idle Smart Dual Battery System, you can skip this step and go straight to step 7.

Locate the following components:

- Cabin Temperature Harness, labeled “CABIN TEMP”
- Cabin Temperature Probe (silver probe), labeled “TEMPERATURE SENSOR KIT”
- 15 ft USB Cable or 18 ft “DISPLAY HARNESS” Cable
- 3 ft USB Charging Cable (included in the tablet box)

Installation Steps:

- 1. Connect the “CABIN TEMP” Harness**
 - Locate the white 3-pin Molex connector on the “CABIN TEMP” Harness.
 - Plug it into the Idle Smart control module port labeled “CABIN TEMP”.
- 2. Connect the USB or Display Cable**
 - If you have the tablet, plug the 15 ft USB extension cable into the port on the control module labeled “USB HOST”.
 - If you have the display, plug the “DISPLAY HARNESS” into the port on the control module labeled “USB HOST”.
- 3. Run the “CABIN TEMP” and “15 ft USB/DISPLAY HARNESS” harnesses together using the most common route:**
 - Up and over the steering wheel (behind the dash).
 - Under the driver’s side kick panel.

- Behind the cupboards, using a wire fish for easier installation.
- 4. Connect the Components in the Sleeper**
 - Once the harnesses are routed to the sleeper:
 - Plug the Cabin Temperature Probe into the “CABIN TEMP” Harness and secure using electrical tape.
 - Plug the 3 ft charging cable into the 15 ft USB extension cable and secure using electrical tape.
 - If using the 18 ft “DISPLAY HARNESS”, run it directly to the sleeper - no additional harness is required.
- 5. Mount the Tablet or Display**
 - Use the tablet mount or the display mounting holes in the sleeper to secure the device.
- 6. Mount the Cabin Temperature Probe**
 - Secure the temperature probe in an optimal location for accurate cabin temperature monitoring.



(Tablet)



(Display)

Step 7 (all OEMs): Standard APU Harness/Smart Flow Relay

Note: This step is specific to the Idle Smart Dual Battery system that pairs with an Electric APU (EPU). If you are not pairing Idle Smart with an EPU, skip this step and move on to step 8

1. Connect to the Omron Relay (Coil Side)

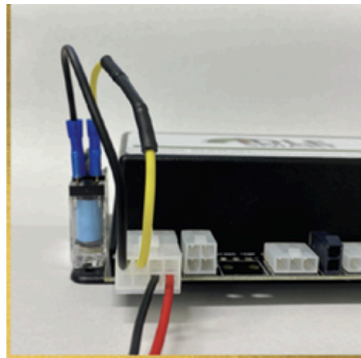
- Locate the APU Harness Connection, labeled “STANDARD APU HARNESS”.
- On the Idle Smart control module (secured behind the dash), find the 8-pin white Molex receptacle labeled “APU” and plug in the “STANDARD APU HARNESS”.

2. Connect Power and Ground Wires

- Run the unterminated black and red wires directly to the APU rear batteries:
 - Route through the firewall alongside the hood switch harness.
- Continue along the frame rail to the rear battery bank and connect to constant and direct power.

3. Connect to the Omron Relay

- Attach the short Idle Smart terminated wires to the Omron Relay as follows:
 - 12V Power: Connect Idle Smart’s yellow wire to Omron Relay Pin 5.
 - Common Ground: Connect Idle Smart’s black wire to Omron Relay Pin 1.



4. Locate the APU’s Ignition Circuit

- Identify the Ignition Circuit
- The ignition circuit is usually located in:
 - The driver’s side kick panel runs to the under-bunk area.
 - Or Pin 2 of the grey 4-pin Deutsch connector on the rear side of the housing module.

- For TriPac systems, the ignition circuit is inside the fuse panel under the hood.

5. Connect the Ignition Wires

- Attach the unterminated ends of Idle Smart's longer, sheathed black wires to the APU Ignition Circuit
- Run the wires back to the Idle Smart Base Unit and Omron Relay.

6. Connect to the Omron Relay

- Connect Wires to the Relay Terminals
- Use the provided female terminals in the Idle Smart kit to connect the following wires to the Omron Type Relay G2R-1-T-DC12:
 - Pin 2: APU Ignition Circuit to APU HVAC.
 - Pin 3: LEAVE EMPTY.
 - Pin 4: APU Ignition Circuit from Truck.



Step 8 (all OEMs): Neutral Safety Switch

For Automatic Trucks

1. Locate the black jumper connector (pictured below) with the 2-pin Molex connector.
2. Connect the jumper to the Idle Smart control module in the port labeled “NEUT.”



For Manual Trucks

1. Find the harness labeled “NEUTRAL SWITCH,” which has a black 2-pin Molex connector.
2. Plug the black Molex connector into the Idle Smart control module in the port labeled “NEUT.”
3. Route the harness through the firewall and under the truck.
 - You can also route it through the bottom of the dash, then pass it through the gearshift boot cover
4. Identify the Neutral Safety Switch plug located on top of the transmission housing.
 - The exact position may vary depending on the transmission manufacturer. Look for a plug labeled “Neutral Switch.”
5. Remove the existing transmission plug and replace it with the provided Idle Smart Neutral Safety Switch.
 - Idle Smart supplies both metric and standard threaded switches to ensure compatibility with various transmissions.
6. Connect the cable securely to the safety switch.

Note: For manual transmissions that require the clutch to be pressed during operation, refer to the separate ‘Clutch Relay Install Guide’ for additional instructions.

Clutch Relay Installation Instructions

For manual transmission vehicles requiring the clutch to be pressed to start the engine, including (but not limited to):

- Freightliner Cascadias
- International ProStars and LTs
- Select Western Star models

If pressing the clutch pedal is **NOT** needed to start the truck, you can skip this step.

This guide provides step-by-step instructions for installing the clutch relay. The installation process follows our standard connection procedure, with the key difference being that several harnesses will route through the Clutch Relay instead of connecting directly to the control module.

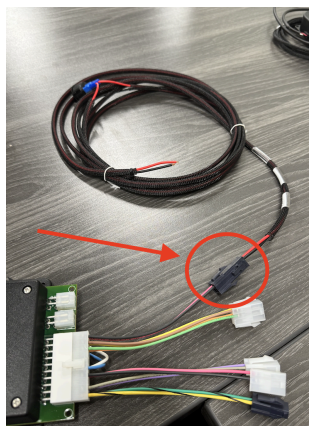
1. Connecting the Clutch Relay Harness (Female Ends)

- Locate the Clutch Relay and connect the harness with the female connectors to the port labeled “Harness.”

■ This harness will then connect to the following components:

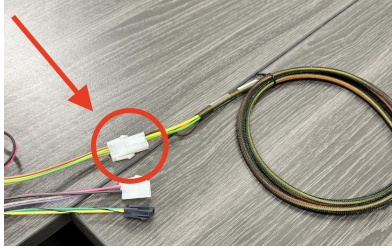
- 12V Power Harness:

- Connect the black and red 4-pin female connector to the male 12V Power Harness as shown in the image below.

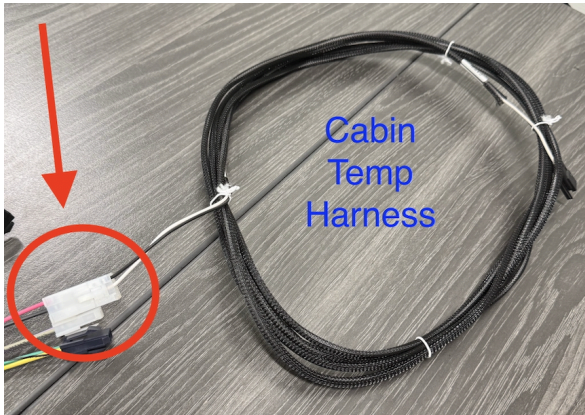


- Ignition Harness:

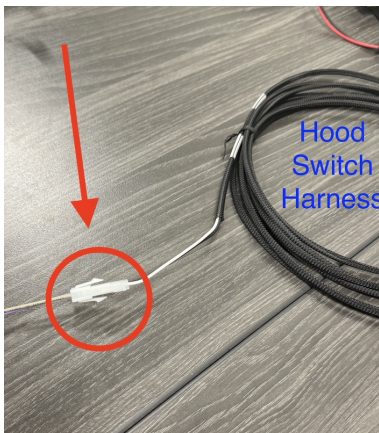
- Connect the 6-pin female connector (orange, green, brown, and yellow wires) to the 6-pin male Ignition Harness as shown in the image below.



-
- Outside Temperature Sensor (Older Systems Only):
 - The blue and white wires are for legacy systems with an external temperature sensor. **This connection is likely not needed in most cases.**
- Cabin Temperature Harness:
 - Connect the black and red 3-pin female connector to the male 3-pin Cabin Temperature Harness (white and black wires) as shown below.



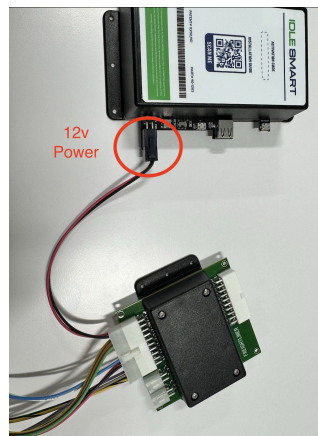
-
- Hood Tilt Switch Harness:
 - Connect the purple and white 2-pin female connector to the male 2-pin black and white Hood Tilt Switch Harness as shown in the image below.



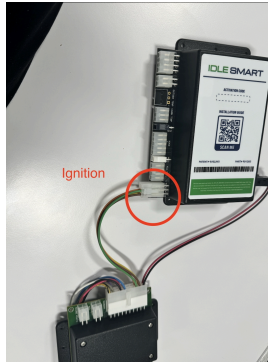
- Neutral Safety Switch Harness:
 - Connect the yellow and green 2-pin female connector to the male 2-pin Neutral Safety Switch Harness (black wires) as shown below.



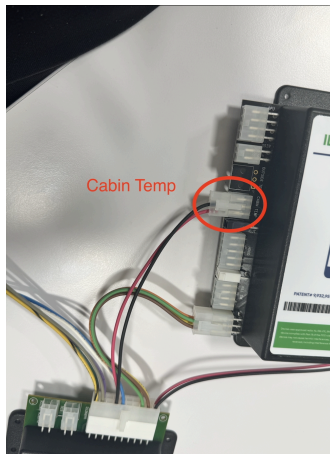
- Connecting the Clutch Relay Harness (Male Ends)
 - Connect the male-ended Clutch Relay harness to the clutch relay in the port labeled "Under Dash."
 - This harness will then connect to the following ports on the base unit:
 - 12V Power Port:
 - Connect the black and red 4-pin male connector to the base unit port labeled "12V Power."



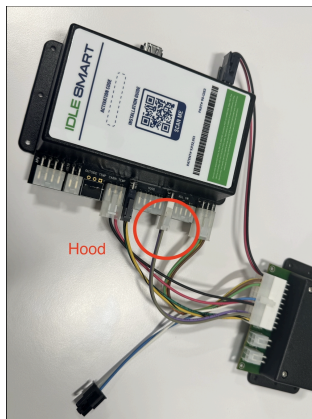
- Ignition Port:
 - Connect the 6-pin male connector (orange, green, brown, and yellow wires) to the base unit port labeled "Ignition."



-
- Outside Temperature Sensor (Older Systems Only):
 - The blue and white male connector is for older systems with an external temperature sensor. This is likely not needed.
- Cabin Temperature Port:
 - Connect the 3-pin male connector (black and red wires) to the base unit port labeled “Cabin Temp.”



-
- Hood Switch Port:
 - Connect the 2-pin male connector (Purple and Gray wires) to the base unit port labeled “hood.”



- Neutral Safety Switch Port:
 - Connect the yellow and green 2-pin male connector to the base unit port labeled “NEUT.”



2. Connect the Grey and Black Sheathed ECU/Clutch Switch Wires

- a. Take the grey-sheathed wire with its 4-pin Molex connector and connect it to the 4-pin location on the clutch relay board labeled ‘Clutch Switch.’
- b. Similarly, take the black-sheathed wire with its 4-pin Molex connector and connect it to the 4-pin location on the clutch relay board labeled ‘ECU.’

3. Connect Both Grey and Black Sheathed Wires to the Truck’s Clutch Switch

- c. Locate the clutch switch near the truck’s clutch pedal. This switch connects the clutch to the vehicle’s computer system.
- d. Disconnect the existing connectors at the clutch switch (matching the connectors for Idle Smart’s ECU and Clutch Switch wires).
- e. Plug the grey-sheathed male connector from Idle Smart into the truck’s female clutch switch connector.
- f. Plug the black-sheathed female connector from Idle Smart into the truck’s male clutch switch connector.

Tip:

If the truck doesn’t attempt to start after selecting “Begin Installation” on the tablet and displays an “**Overcrank Protection**” error, follow these steps:

1. Swap the **gray and black clutch switch connectors** on the **clutch relay module**.
2. Press the **white “reset” button** on the **Main Control Module**.
3. Try the “**Begin Installation**” button again and check if the truck starts

Step 9 (Volvo/Mack Only): Smart Assist Installation

This step provides specific instructions for installing the Smart Assist system, designed exclusively for Volvo or Mack trucks. If your vehicle is neither, skip this step.

- Volvo trucks
- Mack trucks

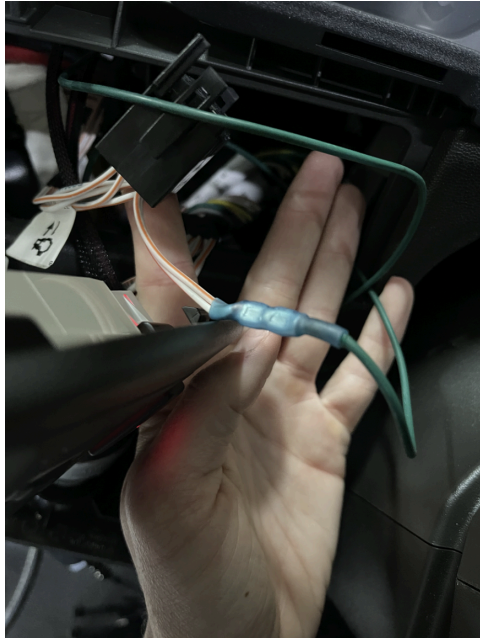
The Smart Assist system serves as an override for the ECM's 5-minute shutdown timer.

Volvo & Mack Smart Assist Installation

NOTICE Before beginning, ensure you have access to the Volvo Tech Tool (VTT) or the Mack Premium Tech Tool (PTT). These tools are required to program the ECM following the hardware installation detailed below.

- 1. Connect the Green PTO Wire, labeled “VOLVO IDLE TIMER BYPASS” to the Idle Smart Module:**
 - Locate the 8-pin white Molex connector on the Idle Smart control module, labeled ‘APU.’
 - Plug the green “VOLVO IDLE TIMER BYPASS” wire into this connector.
- 2. Route the Green “VOLVO IDLE TIMER BYPASS” Wire to the PTO Switch:**
 - Identify the PTO switch in the truck, typically labeled as PTO 1.
 - Locate the TR G16-656 circuit associated with the PTO switch.
 - Access the PTO 1 Circuit through the jumper wire located between pins 4 and 12.
 - This is usually located behind the driver-side AC vent to the left of the steering wheel.
- 3. Modify and Connect the Circuit:**
 - Cut the jumper wire loop between pins 4 and 12.
 - Join both cut ends together on one side with a crimp connector.
 - Then, connect the Idle Smart green wire to the other side of the crimp connector.

Note: This configuration enables the Idle Smart system to override the 5-minute shutdown timer by engaging the PTO on the truck. To activate this functionality, you must use the Volvo Tech Tool (VTT) or Mack Premium Tech Tool (PTT) to update the ECM settings accordingly.



Step 10 (All OEMs): Hood Tilt Switch Installation

The Idle Smart Hood Tilt Switch needs to be angled correctly to function properly. Please follow the instructions below.

1. Connect the Hood Switch Harness:

- Locate the Idle Smart hood harness, labeled “HOOD SWITCH” with the white 2-pin Molex connector, and connect to the Idle Smart control module port, labeled “HOOD”.
- Route the other end of the harness through the firewall into the engine compartment.

2. Locate the “HOOD TILT SWITCH” and position:

- When the hood is closed:
 - The pigtail of the switch should be angled downward (below parallel).
- When the hood is open:
 - The pigtail should be angled upward (above parallel).

💡 Tip(s):

- For optimal visual placement:
 - When the hood is open, the pigtail should point upward at approximately the 10 o'clock position.

- When the hood is closed, the pigtail should point downward at approximately the 7 o'clock position.
- You can also use a Multimeter for Precision (may require 2 people):
 - Mount the hood tilt switch using only one screw.
 - While the switch is not connected to the hood switch harness, attach a multimeter to the metal prongs inside the hood tilt switch pigtail.
 - While your multimeter is connected, point the pigtail straight down toward the ground. At this position, you should observe continuity on the multimeter.
 - Gradually angle the hood tilt switch pigtail upward until the continuity is **lost**.
 - Once continuity is lost with the hood open, you've found the "sweet spot." Secure the switch in place with the second screw to complete the installation.

3. Secure the Hood Switch Connection:

- Connect the "HOOD SWITCH" harness to the "HOOD TILT SWITCH".
- Ensure the connection is fully secured by listening for two distinct clicks.
 - Secure the hood tilt switch and harness with electrical tape.

Step 11 (All OEMs): Configure the ECM

Adjusting the ECM parameters is optional and generally not required for Idle Smart to operate in most cases (this varies based on pre-existing setup). If your truck does not have an idle shutdown timer and you do not wish to enable one, you can skip this step.

NOTICE: ECM settings may need to be configured differently depending on whether Idle Smart is paired with an EPU. It is crucial to follow the specific guide for your Idle Smart system to ensure proper functionality. Incorrect configuration may result in the system not operating as intended.

Cummins Engines With RP1226 Datalink Connection

Features and Parameters	Description	Recommended Value	Idle Smart Recommendation
Idle Shutdown	Indicates whether idle time shutdown is enabled or disabled	Enable	Required
Time Before Shutdown	How long the engine will idle before automatically shutting down	21:00 Minutes for Cabin Comfort System; 60:00 Minutes for Dual Battery/EPU System	Required
Ambient Temp Override	Allows the engine to continue idling beyond the Idle Shutdown Timer when outside temperatures are outside of a certain range	Enable; set temps to allow idling above 90° and below 10°	Recommended
Idle Shutdown Timer Override	Controls whether a driver can permanently prevent the engine from shutting down by interacting with certain inputs, such as the brake pedal, accelerator, clutch, or other configured triggers.	Disable	Optional
Manual Override	Driver can manually prevent the Idle Shutdown Timer from shutting down the engine by using a designated input, such as a switch, button, or other control.	Disable	Optional

Cummins Engines With OBD/9-Pin Datalink Connections

Features and Parameters	Description	Recommended Value	Idle Smart Recommendation
Idle Shutdown	Indicates whether idle time shutdown is enabled or disabled	Enable	Required
Time Before Shutdown	How long the engine will idle before automatically shutting down	5 minutes	Required
Ambient Temp Override	Allows the engine to continue idling beyond the Idle Shutdown Timer when outside temperatures are outside of a certain range	Enable; set temps to allow idling above 90° and below 10°	Recommended
Idle Shutdown Timer Override	Controls whether a driver can permanently prevent the engine from shutting down by interacting with certain inputs, such as the brake pedal, accelerator, clutch, or other configured triggers.	Disable	Optional
Manual Override	Driver can manually prevent the Idle Shutdown Timer from shutting down the engine by using a designated input, such as a switch, button, or other control.	Disable	Optional

Detroit Engines

Features and Parameters	Description	Recommended Value	Idle Smart Recommendation
Enable Idle Shutdown	Activates the automatic idle shutdown feature when the park brake is engaged to reduce unnecessary idling and conserve fuel.	Enabled With Parkbrake	Required
Idle Shutdown Time	Specifies the duration before idle shutdown activates	1260 seconds for Cabin Comfort system; 3600 seconds	Required

		for Dual Battery/EPU system	
Idle Shutdown - Low Ambient Air Temp	Prevents idle shutdown when ambient air temperature is below the specified value, ensuring driver and system comfort.	10° F	Recommended
Idle Shutdown - High Ambient Air Temp	Prevents idle shutdown when ambient air temperature exceeds the specified value to ensure driver and system comfort	90°	Recommended
Enable Automatic Idle Shutdown Override	Determines if drivers can manually override the idle shutdown timer.	Disabled	Optional

Volvo & Mack Engines w/SmartAssist

For vehicles equipped with the SmartAssist harness, ensure the following ECM settings are configured properly. These recommendations apply specifically to systems where the harness is connected to the truck's PTO circuit.

Features and Parameters	Description	Recommended Value	Idle Smart Recommendation
P1BVS	Idle Shutdown Idle Timer Value	300	Required
P1BX0	Idle Shutdown Disable With Active PTO Condition Enable (Select correct PTO location)	1 or True	Required
P1HUM	Idle Shutdown, PTO Switch Override	1 or True	Required
P1SOO	Engine Idle Shutdown, Ambient Temperature Thresholds	10° & 90°	Recommended
P1SOL	Engine Idle Shutdown, Override by Ambient Air Temperature, Enable	1 or True	Recommended
P1BXZ	Idle Shutdown Disable On Parkbrake Condition Enable	0 or False	Optional

Volvo & Mack Engines (Without Smart Assist)

For vehicles **NOT** equipped with the SmartAssist harness, ensure the following ECM settings are configured properly.

Features and Parameters	Description	Recommended Value	Idle Smart Recommendation
P1BVS	Idle Shutdown Idle Timer Value	1260 Seconds for Cabin Comfort System; 3600 Seconds for Dual Battery/EPU	Required
P1SOO	Engine Idle Shutdown, Ambient Temperature Thresholds	10° & 90°	Recommended
P1SOL	Engine Idle Shutdown, Override by Ambient Air Temperature, Enable	1 or True	Recommended
P1BXZ	Idle Shutdown Disable On Parkbrake Condition Enable	0 or False	Optional

International Engines

Features and Parameters	Recommended Value	Idle Smart Recommendation
AAT Enable for Idle Shutdown	Enabled	Required
Idle Shutdown Time with Park Brake Set	21 Minutes for Cabin Comfort; 60 Minutes for Dual Battery/EPU System	Required
Idle Shutdown Ambient Temperature Threshold Override - Low Temp Limit	10°	Recommended
Idle Shutdown Ambient Temperature Threshold Override - High Temp Limit	90°	Recommended
Idle Shutdown Time - No Park Brake Set	21 Minutes for Cabin Comfort; 60 Minutes for Dual Battery/EPU System	Optional

Paccar Engines

Features and Parameters	Description	Recommended Value	Idle Smart Recommendation
N689	Idle time with Park Brake Set	21 minutes for Cabin Comfort; 45 minutes for Dual Battery	Required
Idle Shutdown Time with Park Brake Set		21 Minutes for Cabin Comfort; 60 Minutes for Dual Battery/EPU System	Required
S683	Enable air temp idle timer override	Enable	Recommended
N686	Ambient Temp above which idle timer will be overridden	10° & 90°	Recommended
N694	Enable Engine Idle Shutdown Timer (EIST) when parking brake is not set	Enable	Optional
N690	Idle Time with Park Brake Not Set	21 minutes for Cabin Comfort; 45 Minutes for Dual Battery	Optional

Step 12 (all OEMs): Place the Warning Labels

1. Locate the strip of warning labels included in your kit.
2. Place one warning label on each side of the frame rail within the engine compartment.

NOTICE Ensure the labels are placed in visible, easily accessible locations for maximum effectiveness and compliance. Clean the surface before applying to ensure proper adhesion.




Step 13 (Optional for All OEMs): Rewire Bunk Heater

From the factory, bunk heaters are wired to automatically shut off when the truck starts. Since Idle Smart may start the engine to recharge the batteries or warm the engine, this default setting can lead to inconvenience and frustration for drivers who are using their bunk heaters.

To maintain uninterrupted operation of the bunk heater during engine starts, follow the steps below

1. Locate the Bunk Heater's Power Source:

- Identify the power wire for the bunk heater, which is typically connected to a fuse panel and routed to a fuse using ignition power.
- 2. Re-Route the Power Wire:**
 - Disconnect the power wire from its current fuse.
 - Reconnect the wire to a fuse that provides direct and constant (battery) power, ensuring uninterrupted operation regardless of the ignition state.
- 3. Test the System:**
 - Turn the bunk heater on.
 - Start the truck using the key.
 - Confirm that the bunk heater continues to run even after the truck is turned on.

 **CAUTION:** Ensure all connections are secure and the new fuse is rated appropriately for the bunk heater's power requirements.

Step 14 (All OEMs): Activate The System

- 1. Run the Idle Smart Software Check**
 - Launch the Idle Smart App:
 - Open the Idle Smart app on the tablet and select "Begin Installation."
- 2. ECM Connection and VIN Verification:**
 - When prompted to enter the VIN, do not type anything.
 - If the ECM connection is functioning correctly, Idle Smart will automatically detect the VIN and proceed to the next screen.
- 3. Software Check and Initial Run:**
 - Idle Smart will conduct a software check. At this point, any errors preventing Idle Smart from being able to start the truck will pop up on the screen.
 - The system will then start the truck and run for 6 minutes.
- 4. Enter the Activation Code:**
 - After the 6-minute run, the system will prompt you to enter your Activation Code.
 - Locate the Activation Code on the Idle Smart Control Module or in the SmartPortal under the Parameters page.
- 5. Complete the Installation:**
 - Once the Activation Code is entered, the Idle Smart installation is complete. The system is now ready for use on the road.