

IdleLogic Master Install Guide

Technician/installers guide for installing the IdleLogic systems in all class 8 truck manufacturers.



Idle Reduction Module

Manufactured by: Ayantra, Inc
Product: IdleLogic™ Idle Reduction Module (IRM)
Model: AYN-IRM-12-7680. 12 Volt System
Max charge current (DC-DC) : 50 AMP
Max continuous output current : 60 AMP

Questions? Contact IdleLogic™ Customer Support at 510-623-7526

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**IT'S NOT JUST SMART,
IT'S LOGIC**



Section 1: Introduction of the IdleLogic System

The IdleLogic™ Idle Reduction System is a dedicated high performance battery bank with a 12-volt DC power and control platform engineered specifically for Class 8 semi-trucks. It eliminates unnecessary engine idling by delivering silent, battery-powered HVAC and accessory operation while the vehicle is parked.

IdleLogic™ integrates power management, LiFePo4 battery support, and Fleet Savvy™ telemetry into a single sealed control module. The system accepts charge from the vehicle alternator via its integrated DC-DC LiFePo4 battery charger, managing the power distribution to the HVAC and sleeper accessories while reporting system health and GPS data through FleetSavvy™.

Key Features

- All-in-one module: pre-wired harness, integrated DC-DC charger, internal fusing, and color-coded plug-and-play connectors.
- 12 V DC operation: optimized for Class 8 truck electrical systems; inverter and direct power source for HVAC operations.
- FleetSavvy™ telemetry: web-based reporting for voltage, fuel savings, GPS, and fault codes.
- No-idle comfort: powers sleeper HVAC and accessories for extended rest periods with zero fuel use.
- Safe & Reliable: sealed IP-rated enclosure, automotive-grade wiring, and full protection against over-current, short-circuit, and reverse-polarity events.

Intended Use

IdleLogic™ is designed exclusively for Class 8 semi-trucks equipped with 12 V DC systems. It is not approved for 24 V platforms or non-truck applications. All installations must follow OEM electrical guidelines and applicable DOT safety standards.

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System Benefits

- Reduces engine idling by up to 2200 hours per year per truck.
- Lowers fuel consumption, emissions, and maintenance costs.
- Extends LiFePo4 battery lifespan through optimized charge control.
- Enables real-time fleet fuel savings via FleetSavvy™ telemetry.

System Specifications

System Voltage: 12.8 V DC (LiFePo4 nominal) Battery Example: 2 × 12 V 300 Ah parallel = 600 Ah Nominal Energy: 7.68 kWh Usable Energy: ≈ 6.5 kWh (85 % DoD)
Peak Output: ≥ 150 A continuous Telemetry Update: 24 hours + state change

Section 2: Safety, Warnings and Installation Safety Notice

Read this manual completely before beginning installation. Only qualified technician's familiar with DC electrical systems should perform installation. Disconnect all vehicle power sources before beginning work. Before handling or connecting any cables, disconnect either the positive or negative battery leads to ensure the IdleLogic™ system is not pre-energized during installation. Follow all federal, state, and OEM guidelines when modifying any commercial vehicle. Park the vehicle on level ground with the parking brake fully set and at least one wheel chocked before installation begins.

Electrical Safety

- IdleLogic™ systems operate at high current. Treat all DC cables as live conductors.
- Use insulated tools and avoid metal jewelry during installation.
- Verify correct polarity before connecting any battery, charger, or HVAC interface.
- Never short battery terminals.
- Confirm system voltage matches the vehicle (12 V DC only). Battery System

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Precautions (LiFePo4)

- IdleLogic™ does not supply LiFePo4 batteries; use only certified LiFePo4 battery packs meeting IdleLogic™ specifications.
- Module weight ≈ 45 lb (20.4 kg); each battery ≈ 60 lb (27.2 kg). Use two-person lift methods.
- Do not puncture, crush, or expose batteries to water or fire. • Charge only with LiFePo4-compatible chargers or IdleLogic's integrated DC-DC charging circuit. • Never use a standard 12 V lead-acid charger. • Store and operate within approved temperature range (–20 °C to 60 °C).

Fire Safety

- Keep a Class ABC or lithium-capable extinguisher nearby.
- Do not use water on electrical or battery fires.
- Inspect insulation and connectors before powering on.

PPE

Use ANSI-approved glasses, insulated gloves, and safety footwear. Environmental & Recycling Follow EPA and DOT rules for battery disposal.

Recycle shipping materials. Data Use & Telemetry Consent At purchase, the customer grants IdleLogic™ permission to collect telemetry data for support, warranty validation, and system development purposes only.

Warranty Information

A 3-year limited warranty covers manufacturing defects under normal use. Opening or modifying the sealed module voids warranty. Damage from misuse or incorrect wiring is excluded.

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SHOP**TIP**

Before installing the module or batteries in the sleeper area, make sure the underside of the cab has no obstructions, cross supports, etc.

Section 3: Mounting of the IdleLogic Control Module and LifePo4 Batteries.

Install the IdleLogic™ module flat under the lower sleeper bunk inside the cab or another protected, interior, and level surface using M6 or 1/4-inch hardware. Avoid vibration, moisture, or heat exposure. Each IdleLogic™ module includes a mounting hardware kit consisting of four (4) mounting tabs and four (4) screws. Attach the tabs to the designated mounting points on the module using the supplied screws. Once the tabs are secured, fasten the module to the truck floor or mounting surface using four (4) 1/4-inch self-tapping screws or equivalent bolts. Ensure all fasteners are fully tightened and that the module is stable and cannot shift, rattle, or vibrate during vehicle operation.



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Install the customer-supplied LiFePo4 battery pack inside the cab, in the sleeper area and under the bottom bunk compartment using the recommended capacity and performance specifications for the IdleLogic™ system. The batteries should be mounted within six (6) feet of the IdleLogic™ module to minimize voltage drop and ensure proper system performance.

Each installation must include the universal battery tray and protective cover provided by IdleLogic™. Secure the tray firmly to the floor or mounting structure and fasten the cover after connections are completed.

After mounting the IdleLogic Control Module, install the battery boxes using (2) ¼ inch self-taping screws for each box and screw from the inside of the box, down onto the floor of the cab. The strap to hold the battery box cover on, goes under the box first. Once installed, install the batteries and check for fit.

Make sure you have room to route the battery cables to each box, planning out your route will save time during cable installation.



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SHOP



TIP

Make sure you have read and understand the HVAC Manufacturers Installation Instructions you have purchased. This Section of the IdleLogic system manual is for the maximum limits the HVAC system may have. Failure to comply to these limits may cause performance issues.

Section 4: Installation (Notice) of Recommended HVAC Systems

This Section of the Installation Manual is for reference purposes only. The IdleLogic system is sold separately for the HVAC system, from which the customer/installer decide to use. IdleLogic recommends the following 12-volt air conditioner parameters and should be followed to achieve maximum performance of the IdleLogic system.

Air Conditioner:

Voltage: 12V DC

Current Requirement: 50 A

Refrigeration Capacity: 2200-2400 W

Evaporator Power: 100W

Variable Frequency Current: 25-45 A

Treeligo 12V Truck Air Conditioner, 12000 BTU



Heater System:

8KW Diesel Heater

12-Volts DC

External Exhaust

VEVOR 8KW Diesel Heater



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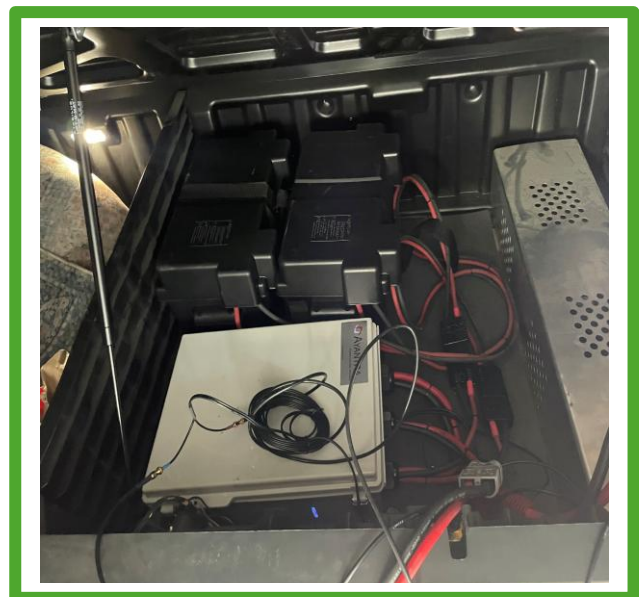
SHOP**TIP**

Make sure the OEM Starter batteries and/or AGM Battery Packs are disconnected and locked out. Double check before you drill access holes for electrical cable, has not to damaged air lines and wire harnesses hidden in the floor or bulkhead area.

Section 5: Battery Cable Runs & Installation.

Drill two (2) holes through the truck floor near the area where the IdleLogic™ module has been mounted. Each hole should be between 3/4 inch and 1 inch in diameter, large enough for one cable to pass through without strain.

After drilling, remove all metal burrs and sharp edges from the holes. Cover any exposed metal with protective split-loom or grommet edging to prevent wire abrasion. Feed the IdleLogic™ cables through the holes and route them toward the truck's OEM battery box. Protect all cables with split-loom along their length and secure the loom to the underside of the cab or frame using zip ties spaced no more than 16 inches apart.



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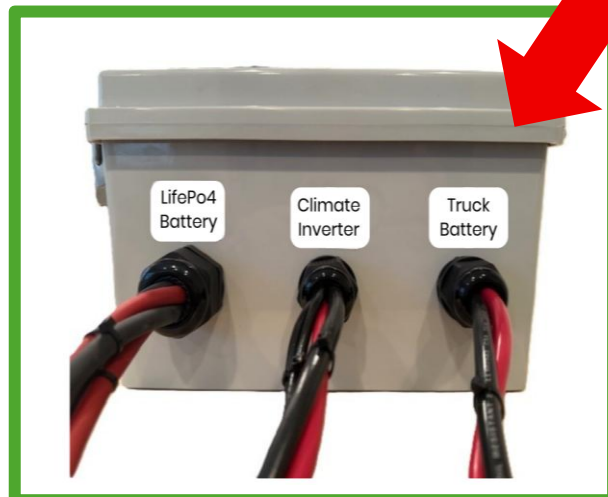
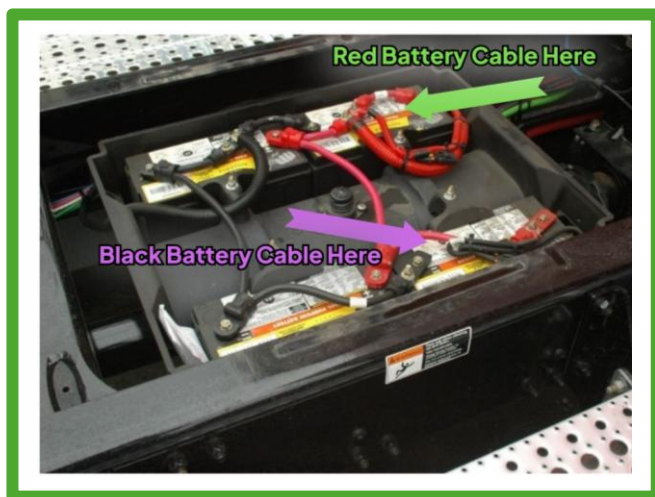
Ensure the cables are not routed near exhaust pipes, sharp edges, or moving parts, and maintain slack for vibration and service access.

Electrical Connections.

Locate the OEM truck batteries and identify the main positive post where the alternator supply cable is attached.

Remove the bolt securing the alternator cable, place the IdleLogic™ positive lead terminal onto the same positive battery post, and reinstall the bolt ensuring both terminals are fully seated and properly torqued. This ensures the IdleLogic™ system shares the same charging source as the truck's electrical system for proper power flow from the alternator.

The IdleLogic™ negative (black) cable may be connected to a common ground point on the OEM battery or to a clean chassis ground near the battery bank. Ensure the connection surface is free of paint, corrosion, or debris to maintain a solid electrical bond.



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SHOP**TIP****Connection Safety Warning: READ!**

DO NOT connect or plug the red Anderson connectors together at this stage. The IdleLogic™ system should remain de-energized until all other wiring, grounding, and routing steps have been completed and verified. Connecting the red Anderson plug too early may energize the system before installation checks are complete, risking electrical damage or personal injury.

The IdleLogic™ module system includes two (2) : “LifePo4 Battery” battery leads from the control module. One lead for each LiFePo4 battery. This configuration ensures that both batteries operate in parallel, maintaining a 12-volt system.

NEVER connect the LiFePo4 batteries in series. Connecting in series will create an overvoltage condition and can cause severe system damage or personal injury.

Once the cables are properly routed and securely attached to the correct battery terminals — positive (+) to the battery positive post and negative (–) to the battery negative post — the installer may connect the black Anderson plug pair (male / female) to complete the LiFePo4 battery circuit at his time.

The climate control connection and the inverter connections can be made also by plugging in the gray Anderson connectors. IdleLogic has supplied the install with a splitter for the purpose to run 2 leads. One to HVAC and the other to an inverter.

Ensure all cables are supported and tied down with clamps or zip ties spaced no more than 16 inches apart. Verify that no cable is under tension and that the battery pack is stable before moving to the next section.

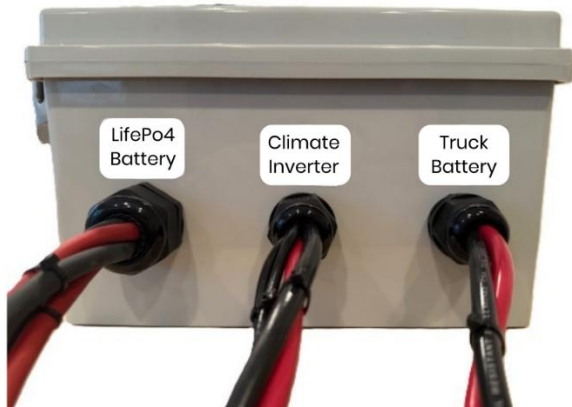
Questions? Contact IdleLogic™ Customer Support at 510-623-7526

Make sure to always follow the color-coded connections. See pictures below.

RED = TRUCK BATTERY

GRAY = CLIMATE CONTROL/INVERTER

BLACK = LIFEPO4 BATTERY PACK



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Section 6: Power System and Activation of the FleetSavvy System

Now that all components have been installed, cables routed and secured, and both the black and gray Anderson plugs have been connected, you may now connect the main power supply — the red Anderson plug — to energize the IdleLogic™ system.

On the side of the IdleLogic™ module is an LED viewing panel that provides real-time system status and diagnostic information. Allow up to 30 seconds for status lights to update after power connection or engine state changes.

LED COLOR	STATUS	DESCRIPTION
Green Flashing	No cell service	Cellular connection not active
Green Solid	Cell service active	FleetSavvy connected
Red Flashing	No GPS	GPS signal failed
Red Solid	GPS service active	GPS locked/tracking
Blue Flashing	BPU batteries low	Battery below voltage
Blue Solid	BPU active	System load switched from truck to BPU (LifePo4) batteries
Yellow Solid	Charger ON	Alternator or DC/DC active
Yellow OFF (no color)	Charger OFF	Engine off/no charging

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SHOP**TIP**

Once you see the LED light on along the side of the IdleLogic module, contact Ayantra Customer Service at 510-623-7526. A customer Service Rep will activate the system and ensure the module is functioning correctly.



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Section 7: Maintenance & Service

Routine Inspection

- Check connectors, cable routing, and voltage readings every PM cycle.
- Battery Care – Keep terminals clean and torqued; avoid storage below 10 % SOC; maintain 13.0–13.4 V when idle.
- Firmware & Telemetry Updates – Maintain cellular connection for OTA updates; do not power down during update.
- Service Limitations – Module is sealed and non-repairable; contact IdleLogic™ support for replacement.

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