

- **idleWATCH®II / NITE™ System**

- System Components
- Basic Diagram
- Key Features
- Fleet Benefits
- IdleWATCH®II Battery Models

- **On-Highway Applications**

- Sleeper Cab
- Day Cab

- **idleWATCH®II / NITE™ Value Proposition Summary**

idleWATCH®II System Components



idleWATCH®II Module



**Dashboard
Remote Panel**



**Dual 80A / 600A
Current Sensor**

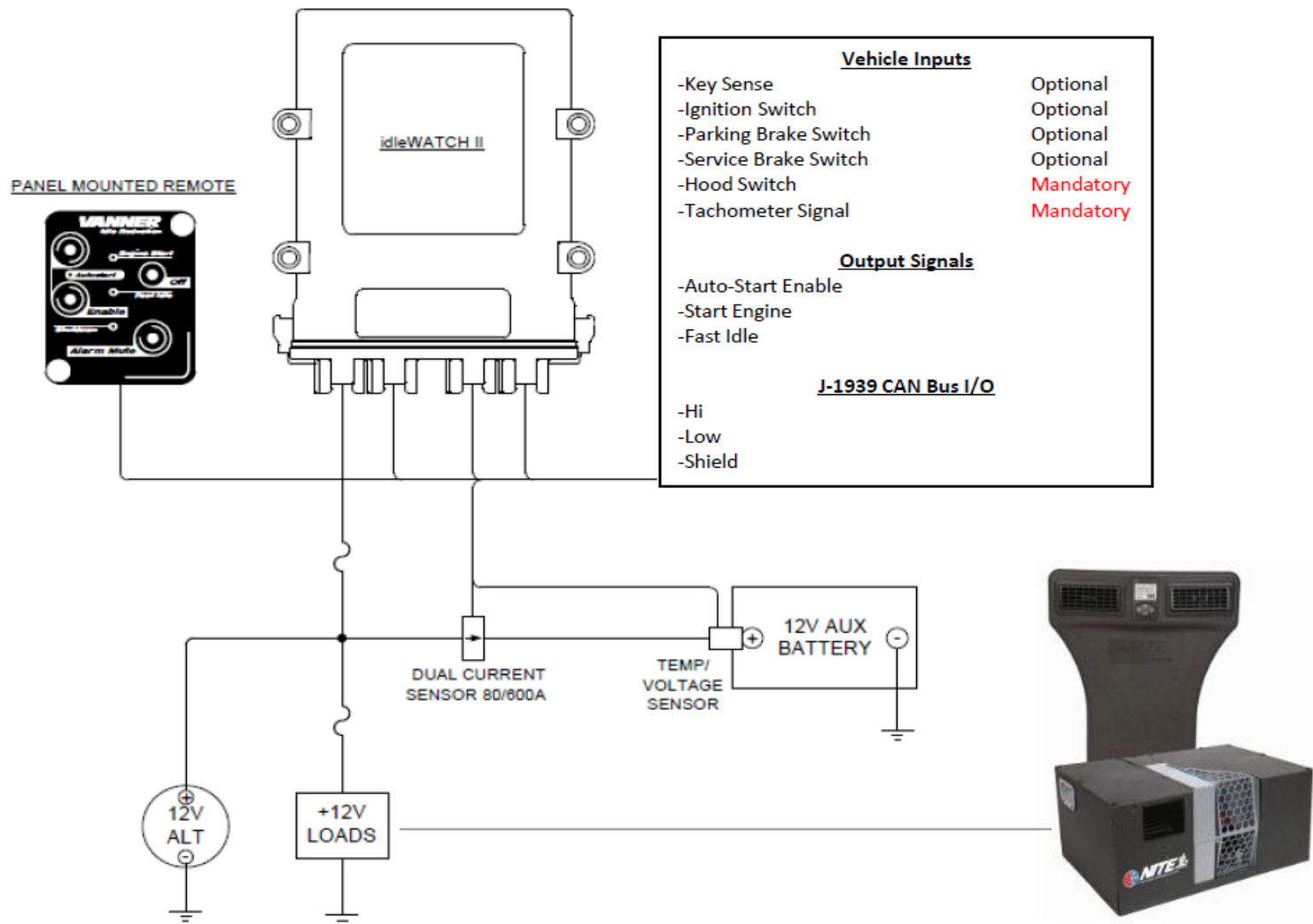


**Voltage / Temperature
Sensor**



**4/0 Cable and Fuse Kit
(Optional)**

Typical idleWATCH®II / NITE Diagram



idleWATCH®II Key Features

- **Patented technology for unsurpassed power management.**
 - First and foremost idleWATCH®II is a manager of the auxiliary battery.
 - The system is controlled through auxiliary battery State-of Charge, not voltage
- **As the auxiliary battery is cycled (charged and discharged) the State of Health (SOH) changes over time.**
 - idleWATCH®II accurately calculates and adjusts to the auxiliary battery life, as it ages.
- **idleWATCH®II also compares the auxiliary battery State-of-Charge (SOC) to the minimum (customer specified) SOC for controlling loads.**
 - idleWATCH®II uses the SOC to auto-start the vehicle. This allows the auxiliary and starting batteries to be charged while all loads are seamlessly operated.
 - When the optimum SOC is achieved, the idleWATCH®II shuts down the engine and continues to manage the loads and batteries.

idleWATCH®II Benefits

- **idleWATCH®II provides continuous and uninterrupted power when the NITE™ system is activated...** All devices powered by the auxiliary batteries are managed by idleWATCH®II
- **Extend no-idle run time and battery life...** idleWATCH®II assures that the auxiliary batteries stay at the optimum SOC throughout the night. Starting batteries are also recharged when auto-started, providing peace of mind to the driver that the vehicle will start in the morning.
- **No driver monitoring or engagement...** When the driver activates the idleWATCH®II and NITE™ systems the power management and auto-starting is enabled.
- **Eliminate nuisance starts...** SOC control eliminates the driver inconvenience and wasted fuel that inaccurate voltage monitoring systems can create.
- **Maximize battery life...** SOH compensates for aging batteries to assure reliability and optimized performance through their entire life.
- **J-1939 CAN Bus communication...** Broadcasts auxiliary battery data, allowing it to be captured for maintenance analysis. CAN Bus also enables the ability to communicate with on-board telemetry systems for “real-time” centralized monitoring. (See Technical Information section at the end of this presentation)

What idleWATCH®II Doesn't Do ...

IT DOESN'T PRODUCE ENERGY !!!!

No eAPU or idle management system does

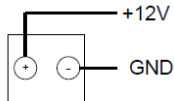
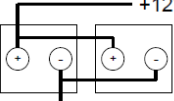
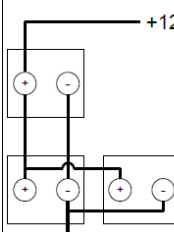
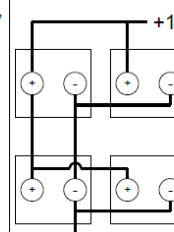
There are two energy storage systems on the vehicle:

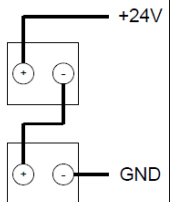
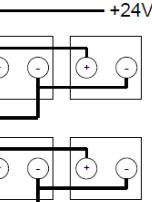
- Fuel Tank**
- Auxiliary Batteries**

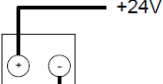
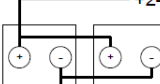
idleWATCH®II optimizes when each energy source is used, to provide the most economical “hybrid” energy system to power the NITE™ system.

Energy for the NITE™ System is provided by the auxiliary battery, the State of Health of the battery will naturally be affected due the multiple and deep cycles. Use of the idleWATCH®II assures proper power management and charging to achieve the battery manufacturer's rated battery life.

idleWATCH® II Battery Models

12V Single Battery Configuration				
				
				
				
	Nb	1	2	3

24V Single Battery Configuration			
	Nb	1	2

24/12V Dual Battery Configuration			
	Nb	1	2

- 001 - EAST PENN 8A31DT
- 002 - DEKA 7T31
- 003 - DEKA DOMINATOR 8G31
- 004 - LIFELINE GPL-31T
- 005 - LIFELINE GPL-30HT
- 006 - LIFELINE GPL-8DL
- 007 - GENESIS XE95
- 008 - EXIDE EXHC - 200D
- 009 - LIFELINE GPL-4DL
- 010 - DEKA INTIMIDATOR 9A31
- 011 - DEKA INTIMIDATOR 8A8D
- 015 - ODYSSEY EXTREME 31-PC2150
- 016 - OPTIMA 34 RED TOP
- 017 - TROJAN OVERDRIVE AGM31
and TRANSPower ST1000
- 019 - DISCOVER EV31A-A
- 020 - DYNO H8DC
- 021 - INTERSTATE SRM29
- 100 - HAWKER 6TAGM

On-Highway Trucks



At Rest
Sleeper Cab



At the Port
Day Cab

Cab Comfort Loads



**Bergstrom NITE™
DC Powered HVAC**



**Engine Coolant
& Cab Heater**

Sleeper Cab



Auxiliary Batteries



**Vanner
idleWATCH®II
Power Management
Engine Control**

Vehicle DC and AC Loads



**Vanner
Inverter / Charger**



Interior Lights



Television



**Stereo and
Game System**



**Laptops
Office Equipment**



DVD / VCR



Refrigerator



**Sleep Apnea
Machine**

idleWATCH®II provides continuous operation of the NITE™ System.

When the driver engages the NITE™ System the idleWATCH®II is activated.



Day Cab System

Cab Comfort Loads



Bergstrom NITE™
Day Cab HVAC



**Engine Coolant
& Cab Heater**



Auxiliary Batteries



**Vanner
idleWATCH®II**
Power Management
Engine Control

Vehicle DC and AC Loads



**Vanner
Inverter / Charger**



Interior Lights



Stereo



**Laptops
Office Equipment**



Radios

idleWATCH®II provides continuous operation of the NITE™ System.

When the driver engages the NITE™ System the idleWATCH®II is activated.



Driver Benefits

- Auto-start is engaged when idleWATCH®II and NITE™ systems are activated.
- No need for the driver to wake up to monitor the system.
- Starting batteries are fully charged for next day.

Economical

- Lower cost alternative for ICE APU's
- Fast ROI on fuel savings alone.
- Extends vehicle warranty if by engine hours.
- Reduces vehicle maintenance if by engine hours.

Safety / Reliability

- Engine-off power for cab comfort and other AC/DC equipment.
- Multiple safety checks must be positive before auto-starting vehicle.
- Vehicle's emissions are lowered as engine hours are reduced.

Flexible

- Installs on any make or model vehicle.
- Fuel Neutral - Gasoline, Diesel, CNG, LNG, Propane.
- Retrofit on existing vehicles in fleet.

