

## Proven Savings

### **Saves Fuel Automatically**

Fuel is one of a railroad's largest expenditures. And the average road locomotive spends 50% of its run-time in idle, stopped at a crossing, siding or in a yard.

Cutting idling time, which consumes fuel at an average rate of four gallons per hour in a typical 3000 hp locomotive, can save \$8000 per year on an AESS-equipped road locomotive. On switcher locomotives, which

spend an even greater amount of their run-time in idle, the fuel savings is even larger. A North American Class 1 Railroad reported savings of \$2000 in just the first month after installing Auto Engine Start Stop (AESS) on their EMD Switcher locomotives.

AESS ensures fuel savings by automating shutdown policies for idle locomotives, safely and effectively.

### **Reduces Emissions and Noise At The Same Time**

AESS can help you meet fleet-wide emissions objectives as well. AESS reduces NOx emissions an average of 1.5 to 2.74 tons/year which is 2.5% of Tier 1 levels. Particulate matter emissions are reduced an average of 0.05 to 0.09 ton/year, or 1.4% of Tier 1 levels.

## GE Transportation – Providing Customer Solutions

With over 100,000 quality parts and dependable service, GE delivers a range of customized solutions to improve fuel efficiency and emissions compliance, extend asset life and reduce maintenance costs on both GE and EMD\* locomotives.

### **Six Sigma**

GE Transportation is committed to delivering Six Sigma performance by embracing customer-focused, data-driven methodology. Six Sigma powers GE Transportation's commitment to provide better, more efficient, innovative solutions.

### **World Class Customer Service**

Our skilled representatives at GE Transportation's Customer Service Center can advise you on our parts offerings, availability and price. When you order from GE Transportation, you will receive prompt order fulfillment and attention to every detail. GE Transportation is a leader in on-time delivery, with distribution centers and manufacturing facilities strategically located around the globe.

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The GE 250,000 square foot parts distribution center in Hanover Park, IL



## GE Transportation Rail

# Auto Engine Start Stop (AESS)

A proven fuel savings solution  
for GE and EMD\* locomotives



## Save Fuel Automatically On Idling Locomotives While Reducing Emissions and Noise

GE's Auto Engine Start Stop (AESS) control system delivers fuel savings by automatically shutting down the diesel engine to eliminate wasteful idle time. Railroads realize up to 10% fuel savings with GE and EMD\* switcher locomotives, and up to 3% for road locomotives.

Installed on over 3000 locomotives world wide, AESS's patented algorithms continuously evaluate critical parameters, whether the engine is running or stopped. The system monitors locomotive speed, ambient temperature, battery voltage, and brake system air to safely and automatically stop and start your idle locomotive, as conditions warrant.



## Smart Enough To Stop The Engine... and To Protect It By Re-Starting

AESS was designed to be part of the integrated locomotive control system. The system monitors vital parameters. Specific conditions must be met prior to initiating shutdown. Start-up can be triggered either automatically, via the control system algorithms, or through operator-induced actions. Standard system features provide engine and shutdown status to the operator.

### Automatic Shut-Down Considered After:

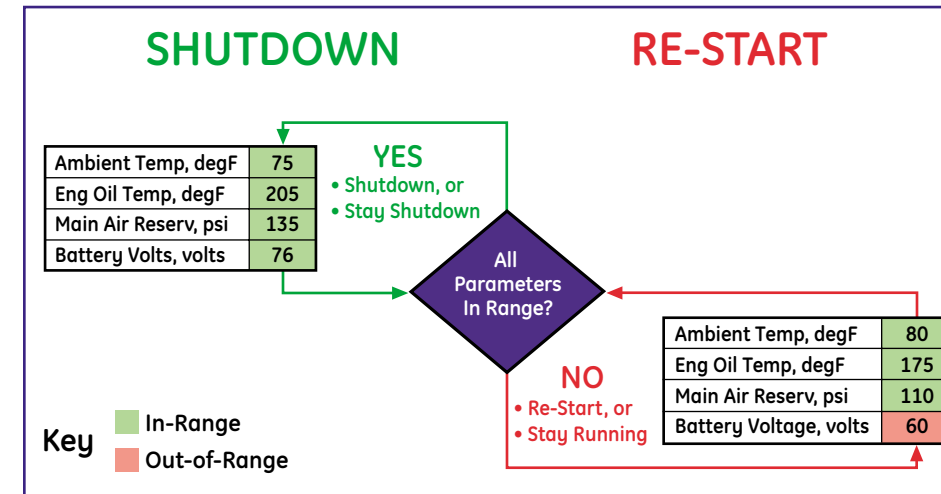
- 10 minutes idling and
- Ambient temperature > 35°F (-2°C) and
- Adequate brake cylinder pressure maintained

### Automatic Start-Up Triggered By:

- Operator reverser handle command or
- Brake cylinder < minimum pressure or
- Battery < minimum voltage or
- Ambient temperature < minimum

### Standard Features Of AESS For EMD\* and GE Locomotives

- Start-up/Shut-down override button
- Shut-down counter
- Engine status indicator lights
- Remote data download of locomotive performance monitoring through wireless or cell modem
- Online fuel savings reporting (MSA customers)



\*EMD is a trade designator of the Electromotive Division of General Motors Corporation. GE Transportation is not an authorized EMD distributor, nor is otherwise associated or affiliated with EMD. However, GE Transportation does represent that its GE Transportation replacement parts, components, subsystems and services are compatible with and usable on EMD locomotives and engines.

### Offers You More To Save You More

GE's engineers used "Design for Six Sigma" tools to ensure AESS's seamless interaction with the locomotive control systems. AESS's resets, protections and overrides give you confidence no one but GE can offer.

AESS offers features and benefits unmatched by competitive offerings.

SYSTEM FEATURE	AESS	THE COMPETITION
OEM Quality and Reliability	●	✗
Starter Motor Protection System	●	✗
Online Data Analysis	●	✗
Automatic Governor Reset Feature	●	✗
One Button Start	●	✗
Shut-Down Suspend Switch	●	✗
Load Shedding	●	●

### Real-Time Savings Tracking By Locomotive

GE offers statistical tracking of locomotive fuel savings and AESS health diagnostics. Statistical test data can be viewed either online, for MSA customers, or via MS Notepad.

**System usage statistics, average**

**Locomotive level statistics, and usage tracking**

**Average fleet statistics, cumulative**

LOCOMOTIVE NAME	UNIT	DOWNING DATE	LOCOMOTIVE DAYS	AVERAGE PER DAY SAVINGS
1004	SPRINGER	00	00	\$24.54
1005	SPRINGER	01	01	\$20.50