School Bus Fire Protection
for all sources of power including electric
The Risk:
Fires in School and Special Need Buses

Bus transportation is one of the safest modes of public transportation. However, fire protection of vehicle engine compartments is critically important as the risk of a catastrophic fire puts lives and assets at risk. Downtime and replacement costs of damaged vehicles demand that a simple, stable, and durable fire suppression solution be implemented. These fires are unpredictable and often difficult to avoid.

The engine compartment is one hazard zone where fires most commonly occur. Engine bay fires happen for various reasons such as mechanical failures, wires loosen or rub against engine or chassis parts, circuit boards become overloaded, as well as oil and fluid leaks. In fact, in the U.S., between one and two school bus fires occur every day, according to a 2016 study by the John A. Volpe National Transportation Systems Center, titled “Motor Coach and School Bus Fire Safety Analysis.”

Fire protection solutions for engine compartments can be impacted by limited space for system components and the age associated with fleets of these vehicles. These buses are operating in environments which subject them to constant vibrations, seasonal weather conditions including extreme changes in humidity and temperature, and dusty, dirt-filled roads and highways. All of these combine to make Stat-X® an ideal fire suppression solution for the bus industry.

INDUSTRY REGULATIONS AND RECOMMENDATIONS:

Often, industry best practice is guided by comprehensive, third party research which typically leads to strong recommendations and/or government regulation. Recently the need for automatic fire suppression was highlighted in the National Safety Transportation Board (NSTB) report, following the school bus fire in Oakland, Iowa, December 2017. This report recommends that: The US Department of Transportation (DOT), the National Highway Traffic Safety Administration, and the specific bus manufacturers require in-service school buses to be equipped with fire suppression systems that at a minimum address engine fires.


THE SOLUTION:
Stat-X Fire Suppression

Advanced Technology

Stat-X® highly advanced fire suppression technology offers the most compact and economical fixed fire extinguishing solution available for engine compartments. A Stat-X unit consists of an extremely durable, hermetically sealed, stainless steel canister containing a stable, solid compound. It is non-pressurized. In the event of a fire, Stat-X units automatically release ultra-fine particles and propellant inert gases which quickly and effectively extinguish fires without depleting oxygen levels.

This total flooding system attacks the fire regardless of its location in the engine compartment unlike the systems with nozzles that require guessing or aiming at the possible source. Aerosol stays suspended longer than any other to prevent reigniting.

Stat-X is UL listed for Class A (surface), B, and C fires.
**Highly Economical**

Stat-X units have minimal installation expense as no piping is needed and no pressure-relief systems are involved. The simple and robust design requires virtually no maintenance reducing ongoing operating costs. Further, discharge of the extinguishing agent causes no damaging or harmful byproducts. In the event of a fire, downtime is kept to a minimum.

**Stat-X Fire Suppression Fixed Systems**

Stat-X fire suppression systems are suitable for a wide variety of bus engine compartments. Our Stat-X electrically operated units are integrated with a variety of fire detection systems which require no external power source, or they can be connected to a power source depending on the control panel selected. Our generators are compatible with the latest detection and control systems.

**Our complete customized fixed system**

![Diagram of Stat-X system components](image)

**Outline of engine compartment installation and operation**

1. Install directly inside the engine compartment: generator, heavy duty bracket, compact panel, and linear heat detection (LHD)
2. Fire is detected
3. Aerosol generators discharge suppressing the fire minimizing damage and downtime
4. System can typically be recommissioned within hours

Stat-X is also offered as a thermally/manually operated model for applications where electric power sources are unavailable.

**Other Advantages**

- EPA Snap Listed for normally occupied and unoccupied spaces
- Proven to be the most effective fire technology available
- 24/7 automatic protection
- Ten (10) year service life
- Maintains performance in the event of a rollover
- Environmentally friendly, with Zero Global Warming Potential (GWP) and no Ozone Depletion Potential (ODP)
- Made in the United States

These advantages make Stat-X fire suppression the optimal solution for enclosed special hazard applications.

**Other Notables**

- Stat-X is tested and approved to the Swedish Fire Protection Association Standard SBF 128:1 Guidelines for fixed automatic fire suppression systems for buses and coaches.
- Stat-X (also known in the US Navy as PEAT – propelled extinguishing agent technology) was evaluated and performance tested by the U.S. Naval Research Laboratory (NRL), the Department of the Navy’s corporate laboratory for use has a halon replacement technology for the fleet Landing Craft Utility (LCU) flammable liquid storage and diesel engine rooms fire suppression system upgrades.
- Tested to meet MIL-Standard-801G
- Effective on Lithium-Ion Battery Fires.

**Protected by Stat-X**

Stat-X protected the engine bay compartment of 9,700 Mine Resistant Ambush Protected (M-ATV) vehicles that were built and fielded by the US DoD. There are also 2,000 in use by the MOD in the KSA and over 1000 in use by the MOD of the UAE.

Stat-X electrically operated system is currently installed on approximately 1,000 buses in New Zealand. Each bus is protected with two Stat-X 250E units, one on either side of the engine to give adequate coverage. The bus engine management system has been customized to control activation of the Stat-X units and shut down the engine upon detection.

Stat-X is also protecting NASA’s crawler transporters, the largest self-powered machines in the world.

**Protecting what matters with Stat-X®!**
Stat-X Technology Protects Critical Infrastructure Worldwide

Today there are thousands of Stat-X installations protecting lives and property on six continents.

- **Energy Storage Systems (ESS)**
- **Mining**
- **Rolling Stock**
- **Telecommunications**
- **Electric Cabinets**
- **Flammable Liquid Storage**
- **Power Generation**
- **Wind Turbines**
- **CNC Machines**

**Approvals and Homologations**

The advanced technology used by Stat-X technology is covered under the NFPA 2010: Standard for Fixed Aerosol Fire Extinguishing Systems and UL 2775: Fixed Aerosol Extinguishing Systems Units. Current approvals are shown below, and more are pending.

**Committed to Quality and Technology**

Fireaway Inc. manufactures the Stat-X product line and implements a Management System, certified by QAS according to Standard ISO 9001:2015 (US2635) in Minnetonka, MN.

Contact a distributor partner or Fireaway for more information.

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*Authorized Distributor*