



# Kidde Fire Protection Systems

## Dual Spectrum<sup>®</sup> Automatic Fire/Explosion Suppression (AFES) Systems

Over 275,000 vehicles, among over 20 countries worldwide, are fitted with Kidde AFES systems. Drawing on our more than 40 years of fire suppression experience, AFES safeguards crews and vehicles automatically and at reaction times that cannot be matched by manual systems.

### Sensor

- Monitors high-rate/explosive events
- Millisecond response time
- False alarm immunity

### Controller

- Monitors system health
- Activate extinguisher
- Provides vehicle communications

### Extinguisher

- 10 millisecond response time
- Field proven, modular design

The AFES system comprises extremely fast and highly accurate Dual Spectrum<sup>®</sup> sensors which detect fires and explosions in zones such as crew areas and mechanical compartments. Additional protection systems are available supporting external and wheel and track areas. The AFES extinguishers are equipped with high-speed valves to immediately flood affected compartments with efficient and approved extinguishing agents. Typical reaction times from detection to full suppression are 120 - 150 milliseconds. Fire or explosions caused by rounds penetrating the vehicle are effectively suppressed by this near-instantaneous response and remain within the limits of published survivability criteria for personnel. The system provides discrimination capability which prevents false alarms from a Kinetic Energy (KE), or High Explosive Anti-Tank (HEAT), round penetration that does not result in an explosion or fire. The suppression system is triggered only when an explosion or fire event occurs.



UTC Aerospace Systems

#### For additional information:

4200 Airport Drive, Wilson, NC 27896 U.S.A.  
Tel: +1 252 246 7004  
Fax: +1 252 246 7180

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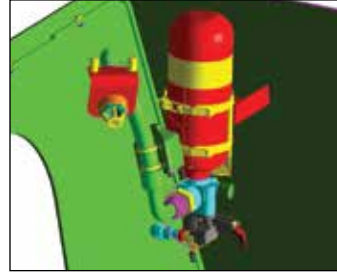
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### Typical Vehicle Integration

Optical sensors are located throughout the protected zone, so that the entire space is monitored. Fire extinguishers are located in supportive locations with distribution nozzles located to ensure sufficient agent concentrations reach all parts of the protected space. An Agent Concentration Test (ACT) can be conducted to validate concentration design. The control electronics panel is located within easy reach of driver and/or commander.

Kidde's engineers are experts in vehicle integration with experience on many vehicles from conceptual design to government live fire testing.



### System Components

Typical complete systems include the following EMI protected components:

#### Control Electronics Panel

MIL-PRF-62545  
MIL-STD-461  
CANBus option  
Customizable to platform  
IP-67  
Built-in test  
Optional watch mode up to 120 minutes after vehicle system shutdown

#### Fire Extinguisher

MIL-DTL-62547  
Non-shatterable cylinder  
High-speed solenoid valve  
Refillable  
No life limited parts  
IP-67  
Operating temperatures:  
-60°F to +160°F  
(-51°C to +71°C)

#### PM-34CSBEH Sensor

Dual Spectrum optical infrared  
MIL-STD-1275  
MIL-PRF-62546  
Built-in test  
IP-67  
Discrimination  
Immune to false alarm  
Operating temperatures:  
-67°F to +257°F  
(-55°C to +125°C)

#### Backup Power Supply (Optional)

Super-capacitor based  
Uninterrupted power to AFES if vehicle battery is compromised  
MIL-DTL-62547 qualified  
Can discharge to 0 volts without adverse effect to service life

#### CANBus Option

J1939  
Continuous sensor and extinguisher connectivity monitoring

#### Electrical Harness

Double shielded, over molded  
MIL spec connectors  
Lightweight



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