Kidde Fire Protection Systems
Dual Spectrum® Tactical Wheeled Vehicle Two-Zone Automatic Fire / Explosion Suppression (AFES) System

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.

The AFES system comprises extremely fast and highly accurate Dual Spectrum® 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.

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

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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) is typically 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:

**TWV Controller**
- MIL-STD-1275
- MIL-STD-461
- MIL-STD-810
- Built-in test
- Optional watch mode up to 120 minutes after vehicle shutdown
- Monitors up to two zones

**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-3MT Sensor**
- Optical infrared
- MIL-STD-1275
- MIL-DTL-62547
- Built-in test
- IP-67
- 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-62545 qualified
- Can discharge to 0 volts without adverse effect to service life

**Electrical Harness**
- Automotive loom
- Deutsch connection
- Lightweight
- Repairable