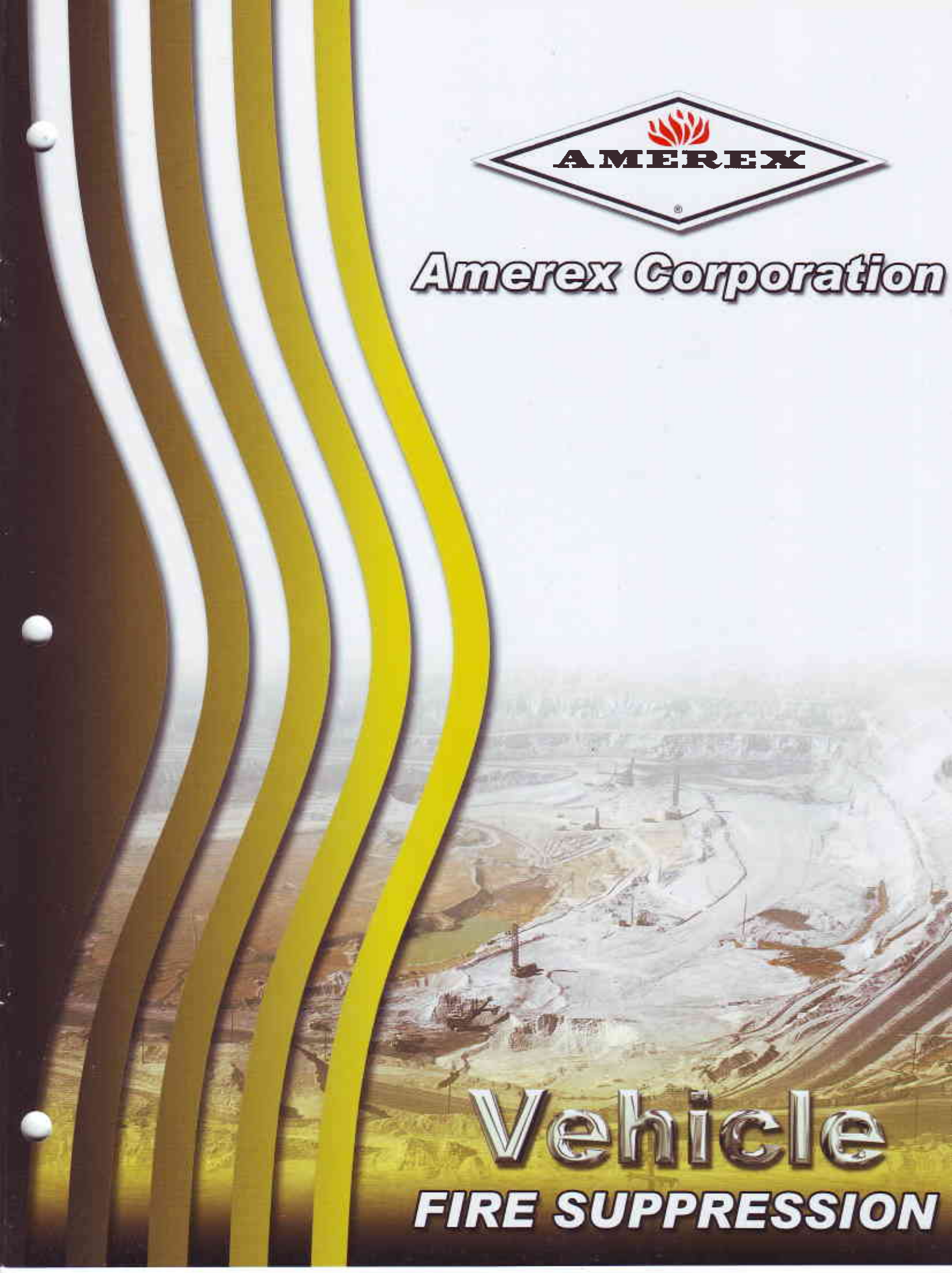
AMEREX

Amerex Corporation



Vehicle

FIRE SUPPRESSION

System Overview...

The Amerex Advantage

Fire destroys billions of dollars worth of industrial and transit equipment every year. It causes manpower losses, decreased property value, and, in many cases, loss of human lives.

Amerex is one of the nation's leading manufacturers of fire fighting equipment with more engineering, manufacturing and quality control experience than anyone else in the industry. We can protect your equipment from fire with a suppression system designed specifically for you.

Life Protector

Whether it is an operator sitting high atop a loader or your children riding in their school bus, Amerex Vehicle Fire Suppression Systems are designed first and foremost to protect human life. Our systems are designed and installed to suppress a fire before it can reach the operator or passenger areas, quickly and efficiently.

Some Ever-Present Dangers

- Abrasion against a high pressure hydraulic line causes a pin-hole and leaks atomized hydraulic fluid onto a hot manifold.
- Cardboard, paper and other combustible solids gather behind the hot exhaust manifold in the engine compartment of a trash truck.
- A short occurs in one of the machine's electrical cables, setting the cable insulator on fire.
- Natural Gas or Hydrogen, highly flammable, invisible fire hazards, ignite from the accidental discard of a cigarette butt.
- Coal dust ignites from a metal spark.
- A wire harness near the battery shorts against the vehicle's chassis, melts, then ignites.

Reduce Insurance Cost

Amerex Vehicle Fire Suppression Systems may make it easier to obtain insurance and also help you qualify for lower premiums. As the costs of heavy duty vehicles rise, insurance rates escalate accordingly. Many insurance companies have recognized a reduction in claims paid out due to the presence of a fixed vehicle fire suppression system. The Amerex Fire Suppression System will lower your fire risk, which can lower your insurance premiums. The key phrase is "material change of risk." Ask your insurance agent.

Reduce Damage and Down Time

Amerex Vehicle Fire Suppresion Systems are designed to warn the operator and suppress the fire, protecting both equipment and people. Our automatic systems suppress the fire in its earliest stages, before it becomes fully established and spreads into highly combustible areas. As a result, damage is limited and equipment down time is held to a minimum.

Mining Operations

Logging Industry

Mass Transit Vehicles

Vehicle Fire Suppression Systems...

Amerex Vehicle System Components

Cylinders (Stored Pressure)

Amerex Vehicle System cylinders are manufactured from the highest quality materials. The cylinders are constructed of steel and coated with an epoxy primer and a polyurethane top coat for excellent resistance to corrosion. The valve is brass and features a brass gauge guard to protect the pressure gauge in rugged environments. Cylinders are shipped filled with ABC or Purple K dry chemical and pressurized.

Factory Mutual System Approved

CE

Available Cylinder Sizes

13 lb. (Vertical Mount)

25 lb. (Vertical Mount)

25 lb. (Horizontal Mount)

50 lb. (Vertical Mount)

50 lb. (Vertical Mount - Short Cylinder)

Control Panel

System status is constantly monitored by the Control Panel and communicated to the vehicle operator by visual LED indicators and audible alarm. Control Panel connects to system wiring by modular color coded, click lock connectors.

Detection Network

Fire detection can be provided by fixed temperature thermostats, linear or Safe-IR detectors. Any combination can be used as necessary.

Fixed Temperature Thermostats

Safe-IR

Linear Pneumatic Tubing

Nozzles and Distribution

Fire suppression agent is delivered to hazard areas by fixed high capacity fast flow machined brass nozzles.

Safety Net...

Amerex Vehicle Safety Network Operator Display

FEATURES:

- Event Data Logging
- Internal Audible Alarm with Silence
- Relay Override
- System Self Test Function
- Keyboard programming capability
- Remote programming with laptop computer via RS-485 interface
- Environmentally Sealed Enclosure
- Easy to read Vacuum Fluorescent Display (VFD)
- System Status via LED indication
- Network interface to additional Safety Net modules via Amerex Modular Cables
- Provides event indication via VFD display
- Wide Operating Temperature Range
- Rugged compact design
- 12/24 or 42 vdc Operation

BENEFITS:

- Simplified System Messages
- Simplifies Troubleshooting
- Simple programming features allow for flexibility
- Event Data Collection
- Provides Fire Suppression and Gas Detection capability from –40° F to +158° F

The Amerex Vehicle SafetyNet Operator Interface Panel provides a simple means of indicating system status to the vehicle operator or maintenance personnel. Basic system status is indicated via easy to read LEDs and via audible alarm indication. Detailed "events" are documented on the VFD display. The Operator Interface Panel functions as the SafetyNet system central control. While each SafetyNet module is intelligent and capable of independent operation, the Operator Interface Panel coordinates all communication between modules. Programming overrides, such as discharge delays, relay transfer, etc., can be easily programmed into the Operator Interface Panel. Basic programming can be performed via the front panel keypad. More detailed programming can take place off line via a personal computer then transferred into the Operator Interface via a network RS-485 connection.

Amerex Vehicle Safety Network - Driver Panel

FEATURES:

- Capable of Safe-IR Optical Flame Sensor Input
- Capable of AMGaDS III Gas Sensor Input
- Capable of Analog Overheat Sensor Input
- Capable of Class B Spot Sensor input
- Single Zone Fire Protection
- Relay output for Fire, Gas or Trouble conditions
- Environmentally Sealed Enclosure
- Sensor Recognition Software
- Wide Operating Temperature Range
- Interfaces with existing Amerex AMGaDS III Field Wiring
- Rugged compact design
- 12/24 or 42 vdc Operation

The Amerex Vehicle SafetyNet Driver Panel includes the most common features required for vehicle fire protection and gas detection system. The Driver Panel is virtually identical to the proven AMGaDS III Driver Panel design. The SafetyNet Driver provides a connecting point for fire suppression & gas detection field wiring.

Connections are provided for System Power, Fire Suppression actuation, Spot Heat Detection, Manual actuation, Agent Cylinder pressure supervision, Relay Contacts (fire, gas, trouble), four zones of detection and SafetyNet connectivity. While the Driver Panel includes the most common system features, the SafetyNet system can be expanded to add additional system features. This module may be combined with others to provide an extensive networked system. The SafetyNet Driver panel includes battery backup for up to 24 hours of fire suppression capability. The SafetyNet Driver panel includes Sensor Recognition Software. The driver panel is able to identify and distinguish between AMGaDS III Gas Sensors, Safe-IR Optical Flame, Discrete/Analog Heat Sensors or Spot Heat Sensors – all automatically without operator intervention or programming.

Amerex Vehicle Safety Network Detection Module

FEATURES:

- Connects to any Safety Net Module
- (4) Fire/Gas Detection Zones
- (1) Relay (SPDT) Output
- Multiple Sensor Type Capability
- Environmentally Sealed Enclosure
- Power indication LED Display
- Wide Operating Temperature Range
- Rugged compact design
- 12/24 or 42 vdc Operation

The Detection Module is a single module which makes up part of the Amerex Vehicle SafetyNet system. The Detection Module allows for zoned Fire, Heat or Gas detection capability. The Detection Module can interface to AMGaDS III Gas Sensors, Safe-IR Optical Flame Detector, RTD Heat Sensor and Spot Heat Detection. Any mix of detection types is acceptable. The SafetyNet Operator Interface (p/n 16389) is connected to the Detection Module via a network cable. The Operator Interface monitors the status of the Detection Module and all system sensors. Upon detection of a fire or significant gas condition, an on-board relay will transfer. This relay may be wired into the vehicle engine shutdown circuit or other warning system. This module may be combined with others to provide an extensive networked system.

Amerex Vehicle Safety Network Releasing Module

FEATURES:

- Connects to any Safety Net Module
- (4) Fire System Actuation Zones
- (1) Relay (SPDT) Output
- Agent Cylinder Pressure monitoring
- Delayed Release capability
- Sequential Release capability
- Environmentally Sealed Enclosure
- Power indication LED Display
- Wide Operating Temperature Range
- Rugged compact design
- 12/24 or 42 vdc Operation

The p/n 16392 Multiple Actuation Module is a single module making up part of the Amerex Vehicle Safety Net (AVSN) system. The Multiple Actuation Module allows for zoned fire system cylinder releasing capability. The Multiple Actuation module interfaces to Amerex Vehicle Safety Network agent cylinders. Any mix of detection types is acceptable. Up to (4) agent cylinders may be released from this module. Agent cylinder release timing can be programmed to occur immediately upon fire recognition, sequentially timed, or upon external input. The Multiple Actuation Module is connected to the Vehicle Safety Network via a network cable. A separate connection is available for Agent Cylinder pressure monitoring. Upon agent cylinder release, an on-board relay will transfer. This relay can be wired into the vehicle engine shutdown circuit or other warning system. This module may be combined with others to provide an extensive networked system.

Amerex Vehicle Safety Network Detection-Release Module

FEATURES:

- Modular Network Connection
- (2) Fire/Gas Detection Zones
- (2) Fire System Actuation Zones
- (1) Relay (SPDT) Output
- Agent Cylinder Pressure monitoring
- Delayed Release capability
- Sequential Release capability
- Multiple Sensor Type Capability
- Environmentally Sealed Enclosure
- Power indication LED Display
- Wide Operating Temperature Range
- Rugged compact design
- 12/24 or 42 vdc Operation

The Detection/Actuation Module is a single module making up part of the Amerex Vehicle SafetyNet system. The Detection/Actuation Module allows for zoned fire detection and releasing capability. The Detection/ Actuation module can interface to the AMGaDS III Methane Gas Sensor, Safe-IR Optical Flame Detector, RTD Heat Sensor and Spot Heat Detection. Any mix of detection types is acceptable. The SafetyNet Operator Interface (p/n 16389) is connected to the Detection/Release Module via a network cable. The Operator Interface monitors the status of the Detection Module and all connected sensors. Default settings are programmed into this module releasing only the fire suppression system cylinders connected to this module. A second cylinder may be programmed to release upon an additional fire condition or a timed release. This module is capable of releasing up to (2) cylinders. A separate connection is available for monitoring Agent Cylinder pressure. Upon detection of a Fire or Gas condition, an on-board relay will transfer. This relay can be wired into the vehicle engine shutdown circuit or other warning system.

Optical Flame Detection

FEATURES:

- Rapid Fire Detection Time
- Wide 3-Dimensional Detection Coverage Area
- Low Power Consumption
- Easy Installation and Maintenance
- Operative Range from -40°F to +220°F

The Safe-IR Optical Flame Sensor is designed for rapid response flame detection in vehicle applications. The sensor operates by detecting emissions from a hydrocarbon fire. The specific characteristics of a hydrocarbon fire allows the Safe-IR sensor to discriminate against background noise and other hot bodies common in vehicle engine compartments. The sensor housing is water and vibration resistant. The low profile design allows for ease of design application and installation. The Safe-IR sensor is designed with a wide field of view (approximately 110°).

AMGaDs III...

On Board Vehicle Methane Detection System for Alternative Fuel Vehicles

PRODUCT DESCRIPTION:

AMGADS III (Amerex Mobile Gas Detection System - 3rd Generation) gas monitoring system is a pre-engineered system designed to be utilized on any type of alternately fueled vehicle. The system can be installed by the vehicle OEM or retrofitted. Its advanced technology can detect: Compressed Natural Gas (CNG), Liquified Natural Gas (LNG), Propane (LPG), Hydrogen and any other hydrocarbon fuel vapors.

TYPICAL APPLICATIONS:

Light, Medium and Heavy Duty Vehicle, School Buses, Shuttle Buses, Taxi Cabs, Paratransit Vans, Transit Buses, Postal Vehicles, Delivery Vehicles, Over the Road Trucks, Waste Trucks, Fork Lifts, or any vehicle utilizing an alternate fuel.

FUNCTIONAL DESCRIPTION:

AMGADS III utilizes multiple sensors for identifying gas leak accumulations. The system operates with both visual and an audible alarm to warn vehicle operator of potential danger. The system alarms at a trace level (20% LFL) and significant level (50% LFL) of gas concentration. System and sensor operation are constantly monitored and feature zoned sensing capabilities. In addition, AMGADS III features an optional internal relay for automatic control of auxiliary devices (i.e. engine shutdown, fuel valve shutoff, auxiliary alarm, etc.).

FEATURES:

- Multi Level Alarms
- Engine Shut Down / Remote Alarm Capability
- Low Power Consumption
- Ease of Installation
- Rugged Construction
- Solid State Sensors
- No Calibration
- Self Test Circuitry
- Low Maintenance
- Modular Plug Wiring

GAS SENSOR:

The gas sensor is the heart of any gas detection system. The sensor used in AMGADS III is 100% functionally tested and operated for an extended period before it is shipped to the customer, ensuring consistency and reliability while eliminating premature failures.

Amerex goes a step further in its commitment to sensor superiority by ensuring that our sensors are resistant to most toxic chemicals that might reduce the life of other sensors during environmental exposure.

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CE

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ISO 9001:2000 14001:2004 Certified

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