



**KODIAK**   
FIERCE VEHICLE FIRE PROTECTION



Quality is Behind the Diamond

## The *KODIAK* Advantage - Quality • Experienced Innovation • Made in the USA



### Because it Absolutely Matters

Amerex vehicle fire suppression systems are manufactured at our facility in Trussville, Alabama so we can provide you with the quality and flexibility your operation demands - when you need it most.

### Quality without Compromise and Experienced Innovation

The best mining operations are uncompromising when it comes to the quality and reliability of their vehicles. At Amerex, we believe the same should be true when it comes to protecting those investments from debilitating fires and loss of production. With the experience of over 100,000 fire suppression systems sold, the Amerex vehicle fire suppression team has developed the most innovative fire suppression systems in the industry. The *KODIAK* Fire Suppression Systems provide *Fast and Fierce Fire Protection*.

### Why Amerex?

- **Quality** As a product of the USA, we provide higher quality products and ship them to you quickly
- **Experience** At Amerex, we use our experience to develop programs focused on understanding the mining industry and implementing processes of continuous improvement
- **Innovation** Our dedicated vehicle systems engineering team uses advancements in technology to develop customized solutions for mining industry challenges



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## The *KODIAK* Advantage - Stored Pressure Agent Cylinders



Dry Agent Cylinders



Dry - ICS Cylinders



ICS Liquid Agent Cylinders



### Why Stored Pressure?

- Prevents moisture from entering the cylinder and contamination of the fire suppression agent
- Agent is fluidized and ready to go when needed; no need for delays while the cylinder is being pressurized from an outside source
- Stored pressure cylinders have a pressure gauge which allows maintenance personnel to verify readiness
- Stored pressure cylinders can also be fitted with a pressure switch which detects a low pressure condition and notifies the operator via the control panel

### Vehicles are different, and so are the protection agent options

We know that all vehicle hazards are not the same, so we offer two different suppression agent options to protect your vehicle.

- **Dry Agent Systems** - provide the fastest fire knockdown as well as getting into those hard to reach areas where fire may hide.
- **Amerex Dry-ICS Systems** - Combines the strengths of both agents and provides the best possible fire protection option by providing rapid fire knockdown with dry agent and the cooling effects of the ICS liquid agent system.

### Fast Fact

Cartridge operated agent cylinders require semi-annual inspection. National Fire Protection Association (NFPA) Standard 17 states: "If there is evidence of caking the dry chemical shall be discarded". "Dry chemical stored pressure cylinders shall not require semi-annual examination but shall require examination at least every 6 years".

## The KODIAK Advantage - Control Panel Options



### Features of the 17 Series panel

- Two detection zones and one releasing zone
- 24-hour battery backup protection
- Diagnostic flash code for easy troubleshooting
- Programmable discharge and alarm relays



### Features of the SafetyNet panel

- Full network ability to add additional detection and releasing zones
- 4000 event log - time and date stamped, down loadable log for easy troubleshooting and incident investigation
- Automatic Maintenance Testing (AMT) mode to significantly reduce maintenance time
- Supports natural gas detection and infrared flame detectors for combination fire and natural gas detection systems
- 24-hour battery backup protection

### Fast Fact

Event logs can be downloaded and provided to the vehicle owner to verify testing has been completed and kept as part of that units permanent record.



## The KODIAK Advantage - Fire Detection Options



Linear Heat Detection cables have long been the industry standard and provide a continuous heat detection cable that runs inside the hazard area. The Amerex Advantage has amped up the traditional cable with a more robust abrasion resistant outer jacket and factory-installed connectors for reliability and ease of service. The cable is also available with a stainless steel wire protective covering for extreme environments.



Spot Heat Detectors are available in three different preset temperature settings for flexibility and provide rapid heat detection and system activation. Spot Heat Detectors have factory installed connectors for reliability and ease of installation and service.



When you need the flexibility to provide Linear Heat Detection cable for harsh environments and Spot Heat Detection for critical areas needing fast response, the Amerex control panels have the ability to combine detection methods.

### Fast Fact

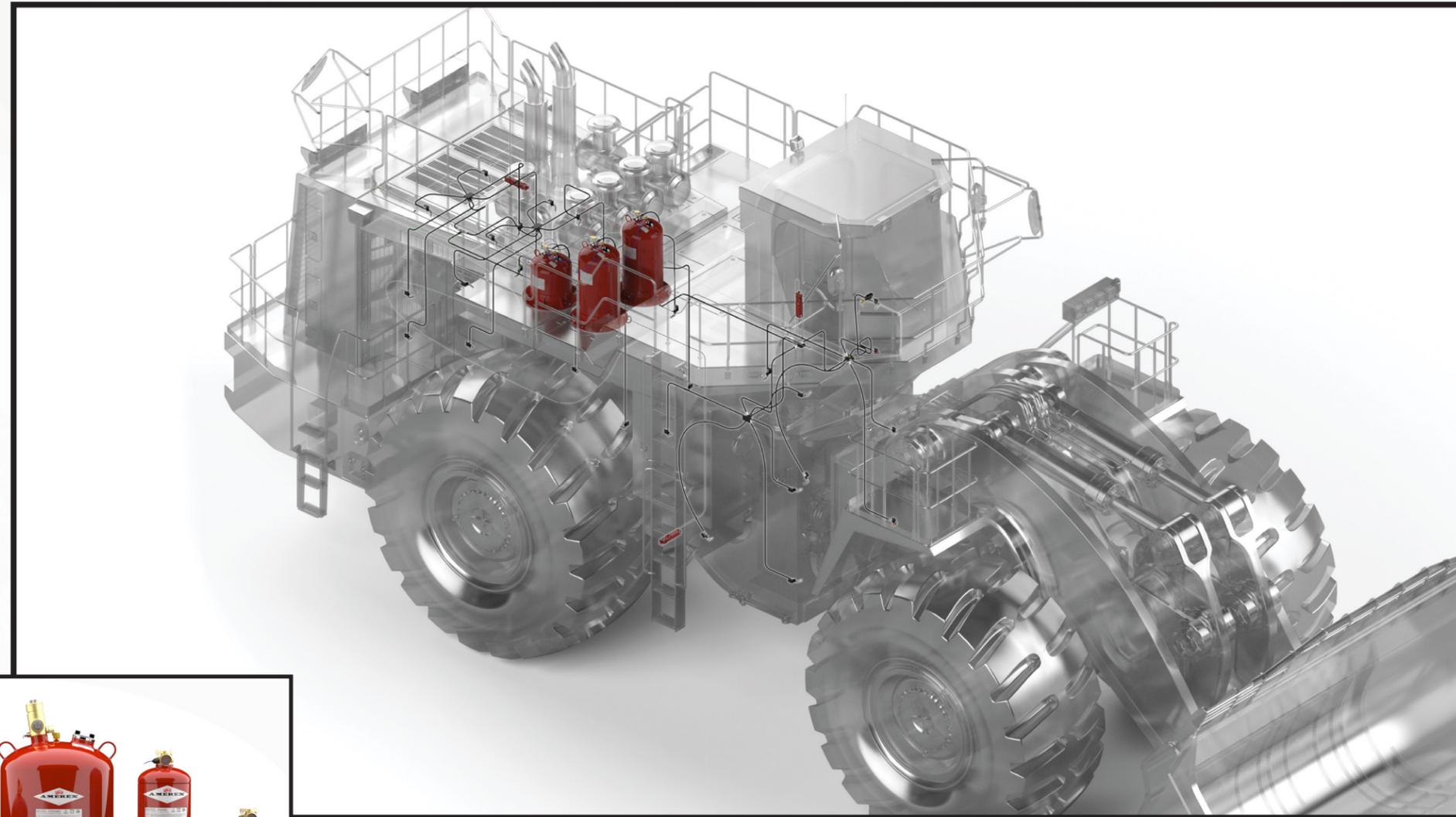
Multiple types of detectors can be used on the same vehicle to provide faster response in high risk areas.



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## Single Release Sequence of Operation

- Fire starts in the machine releasing significant amounts of heat.
- The detectors sense the heat and send a signal to the control panel.
- The control panel interprets the signal and begins the discharge sequence, activating the alarm relay for shutdowns.
- The operator may choose to activate the manual release located in the cab or at ground level at any time to begin the discharge sequence.
- The linear actuator receives the signal from the control panel and opens the cylinder valve. The fire suppression agent travels through the distribution network to the nozzles which disperse the agent.
- The fire is suppressed, allowing for personnel to evacuate the machine and utilize hand held fire extinguishers or other methods, if necessary.



## Amerex Vehicle Fire System Features

### System Control Panel

The Control Panel (CP) is the “brains” of the system. The CP interprets the signal from the detection circuit, initiates the cylinder discharge, and simultaneously operates relays which can be used to stop the flow of flammable fuels.

### Automatic Detection

24-hour automatic sensors rapidly detect heat from a fire and signal the CP to start the discharge sequence, suppressing the fire and minimizing the damage.

### Agent Cylinders

Stored pressure agent cylinders hold the suppression agent in a pressurized state, preventing agent contamination and reducing maintenance costs.

### Distribution Network

Hydraulic hose or stainless steel tubing distributes the fire suppression agent to the discharge nozzles which disperse the chemical throughout the hazard area.

### System Actuation

All systems have the capability to be actuated electrically, pneumatically, or as a redundant system featuring both electric and pneumatic actuation.



## The KODIAK Advantage - Dry-ICS Dual Agent Systems

## The KODIAK Advantage - Dry-ICS Dual Agent Systems

### Amerex Dry-ICS Dual Agent Suppression System

- Amerex Dry-ICS System provides the best possible fire protection option by combining the rapid knockdown power of dry agent with the cooling effect of ICS liquid agent
- The dual agent is designed for simultaneous discharge or with a time delay between Dry and ICS release for an extended discharge for larger vehicles
- The Dry-ICS system meets the dual agent requirement of NFPA 122 12.3.6.1.1 for hydraulic/diesel excavators with hydraulic systems larger than 150 gallons



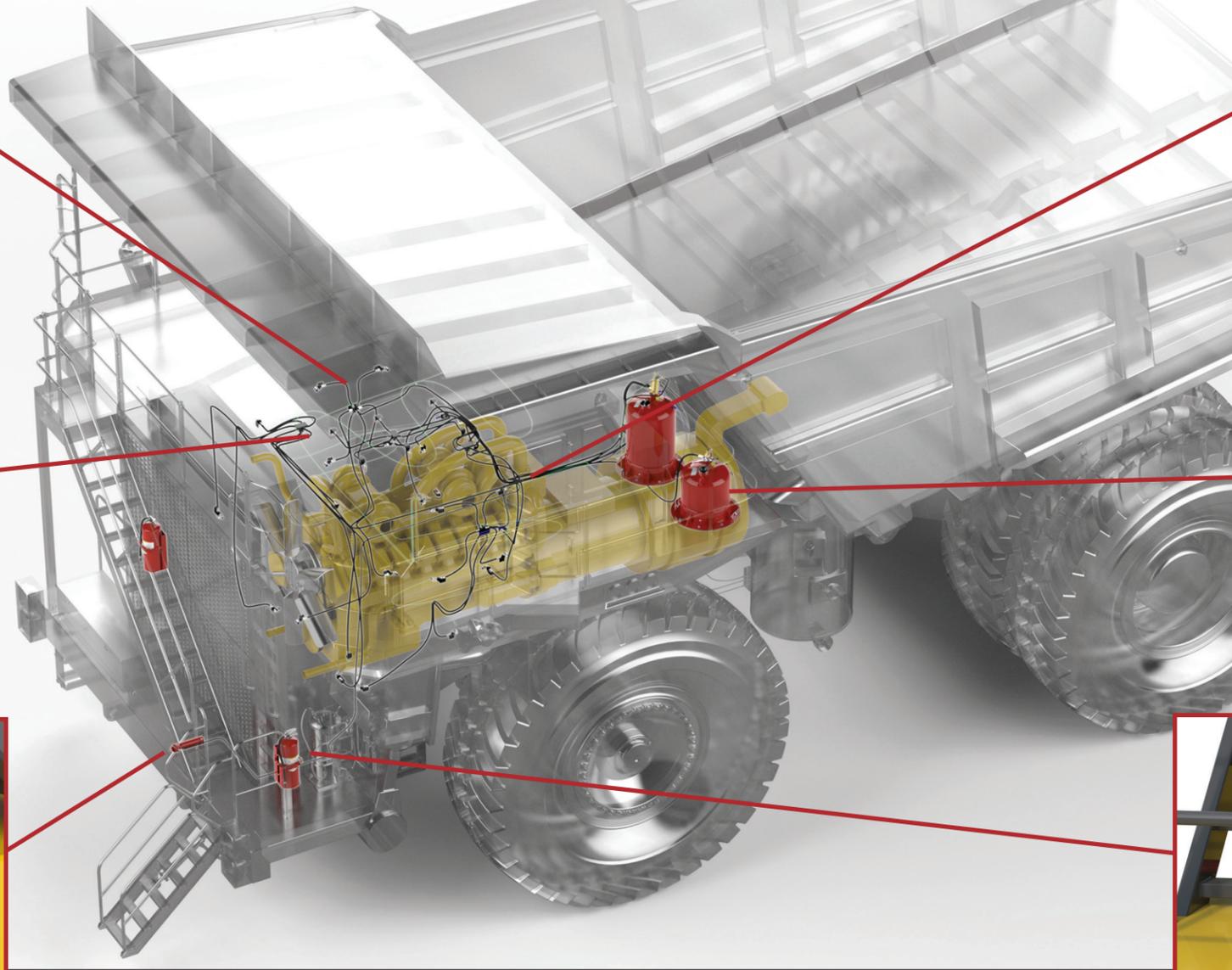
17 Series Panel



Detection Network



Manual Actuator



Engine Compartment



Cylinders



High Flow Extinguisher

#### Fast Fact

Amerex control panels have programmable shutdown delays from 0-15 seconds in 5 second increments.

#### Fast Fact

Fires on mining equipment with large volumes of hydraulics and diesel fuels can reignite after a fire is suppressed if the flammable fuel is not shut off, or the ignition sources aren't cooled.



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# CAN/J1939 - Interface Module

## Description

The SafetyNet CAN/J1939 Interface Module (CAN Module) interfaces with Amerex Fire Suppression and Gas Detection electronics to transmit diagnostic messages to the vehicle network, operating at either 250k or 500k baud rate. Integration with telematics reporting software provides the user with a live system status. If desired or needed, a detailed troubleshooting of the SafetyNet system status can be achieved via the reporting platform. The device is installed as a module residing in the SafetyNet communication cable network. The proprietary SafetyNet codes are regularly transmitted on the network of SafetyNet modules and sensors. The CAN Module reads, sorts and translates SafetyNet messages into a SAE CAN/J1939 DM1 format. Sensor and module specific messages such as system Fire and Trouble conditions are recorded and transmitted to the CAN/J1939 network where they can be viewed and reported via the telematics system.

## Features:

- Compatible with all previous version SafetyNet systems
- Provides SafetyNet diagnostic messages to vehicle CAN/J1939 network
- May be used for system maintenance and safety system diagnostic review
- RoHS, Reach & WEEE compliant construction
- Two separate part numbers for 250k and 500k baud rate vehicle CAN networks
- Coordinates SafetyNet internal clock with vehicle CAN controller

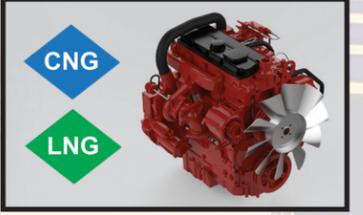


## Benefits:

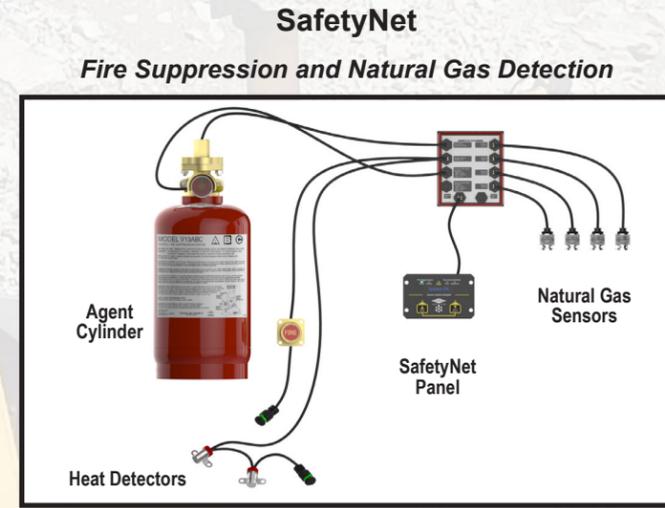
- Connects to vehicle CAN/J1939 AVM network and allows for simplified diagnostics and maintenance
- Provides SafetyNet diagnostic messages which may be included with all other telematics reports
- Translates and transmits SafetyNet proprietary messages to the CAN/J1939 network
- Automatic synchronization of SafetyNet internal clock which allows for coordinated event tracking

SafetyNet CAN/J1939 Components
P/N 26429 Module, 250k Baud
P/N 27203 Module, 500k Baud
P/N 26430 Interface Cable, 1 meter (required for either Module)

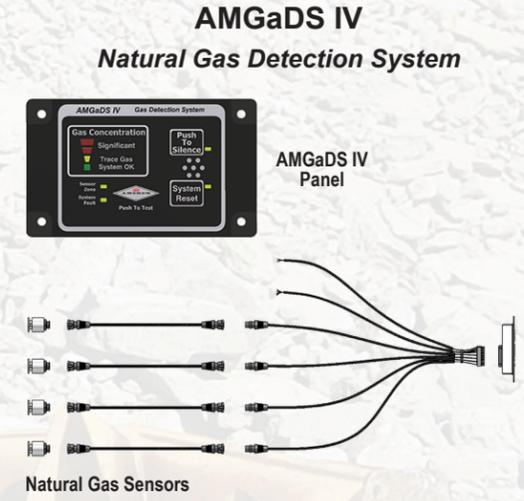
# Natural Gas Detection and Fire Suppression Systems



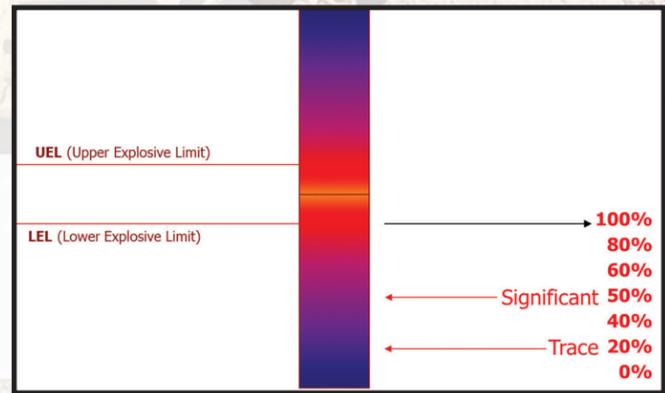
Natural Gas Engine



The Future of Mining includes *High Horsepower Natural Gas Engines*. Amerex has been the leader in natural gas vehicle detection for over 20 years. The AMGaDS IV system provides gas detection to notify the Operator of a gas leak. The Amerex SafetyNet system provides both gas detection and fire suppression capabilities



Natural Gas Sensor





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Part No: SL-121