PROTECT YOUR WORLD

AutoFireX
Automatic Fire Suppression systems

PRE -ENGINEERED AUTOMATIC FIRE SUPPRESSION SYSTEMS

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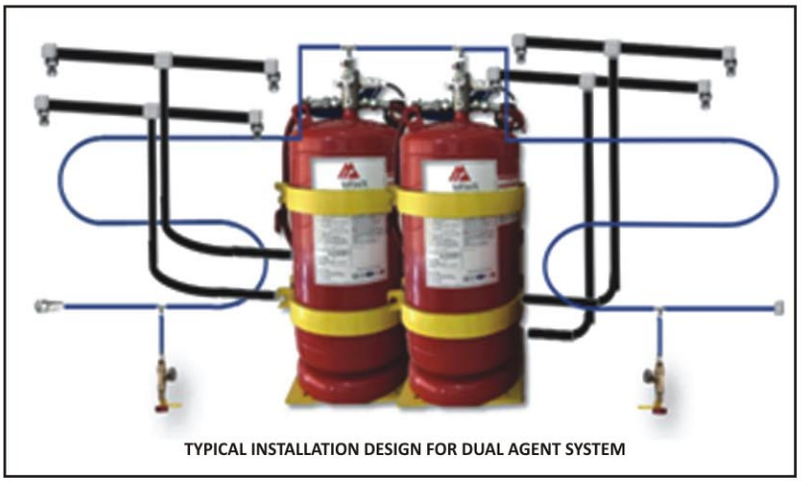
THERMAL PROPERTIES



TYPICAL INSTALLATION DESIGN FOR DUAL AGENT SYSTEM

The AutoFireX® Dual Agent system utilises the Indirect valve which is integrated with Linear heat detector - AutoFireX® Fire Detection Tube (FDT) / Linear Heat Sensing cable(LHS) to automatically detect the fire and actuate the system(s). The tubing/cable is installed in and around the fire risk areas. In case of the FDT detection tubing is pressurised and connected to the ILP valve which is a differential pressure valve that maintains the pressure both in the tube and in the cylinder containing the pressurised agent in closed position. When a fire occurs, in case of the FDT Pneumatic Tube the tubing will burst at the point of highest heat experienced at any point along its installed length, the pressure loss in this process causes the valve to open and the agent is discharged through the discharge hoses attached to the discharge ports straight on to the source of heat through the installed nozzles on end of the discharge hoses. In case of LHS cable, the wire on detection of heat will initiate a signal to the installed control Panel, initiating the Solenoid Valve that operated the ILP valve and the agent is immediately discharged and dispersed through the network of discharge hoses and nozzles straight on the fire.

Our Dual Agent systems are also capable of being discharged/ operated manually by utilising Manual Actuator which is strategically installed at a suitable reachable space on the vehicle (operator cabin). On activation of the system the Dry Chemical Powder is dispersed from the first system which immediately strangulates the fire/ knocking it out in the protected area, simultaneously setting the Foam/wet chemical Agent discharge, which follows the dry powder discharge and the constant flow of the Foam combined with water starts cooling down the burning area and prevents from any subsequent reignition.

By utilising the optional monitoring switch that can be attached to the ILP valve of the Dual agent system, and connected to the Audio-Visual Alarm unit, the fire can be annunciated instantly on activation of the systems.

FIRE SUPPRESSION AGENT

AutoFireX® Dual Agent systems effectively combines the features of ABC Dry Chemical Powder & Wet Chemical Agent to extinguish the fires in the shortest possible time.

Agent 1 – ABC Dry Chemical Powder - Mono Ammonium Phosphate ($NH_4H_2PO_4$), also known as ABC 90 or multi-purpose powder dry is used as chemical fire suppression agent that complies with EN 615 standard & is UL listed.

ABC 90 Dry Chemical is a fine powder that has been treated for water repellence and is capable of being fluidized and free flowing so that it can be discharged through hoses and piping under the influence of an expellant gas. When discharged, dry chemical powder drifts through the air and settles on surrounding surfaces forming a blanket. This Powder is included in NFPA-17 and has been evaluated and approved for use in occupied areas, provided the proper safety precautions have been taken.

Agent 2- Wet Chemical Agent – AutoFireX's Wet Chemicalsare fluorocarbon based concentrates especially designed for use on B fires (hydrocarbons and polar solvents) that also supports performance on A type fires. This agent is eco-friendly as their high quality allows low concentration to reach high ratings and has durable film forming and blanketing properties It also provides superior cooling along as a second application that also helps in preventing reignition from superheated surfaces.

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INTRODUCTION

The consequences of a fire in a mine – above or below ground – can be catastrophic. World over Mine sites have a number of heavy vehicles, plant and equipment in operation everyday with the vehicles incorporating significant ignition/ heat sources that could potentially cause fires. The vehicles also have to contend with high ambient temperatures, intense temperature variations in the engine compartment and near constant and substantial vibration. In addition to the vehicle's fuel, oil and the risk of fuel line ruptures, fire safety means taking into account any number of flammable liquids present throughout the engine compartment. These include hydraulic, brake, automatic transmission and power steering fluids, along with combustible accumulated grease on the engine block, for which frayed or damaged electrical wiring can easily provide the ignition source. One important area that demands dedicated fire protection is the specialised plant, mineral-moving vehicles such as ore haulers, draglines, haul trucks, dozers and shovels on which mining and mineral extraction operations depend. Not only is this equipment extremely expensive to replace with a considerable delivery lead time – such equipment can often takes many months to replace – extensive downtime and business interruption, in the event of a fire there is also a very real life safety threat to the equipment operator. These machineries demand extraordinary, specialist protection. AutoFireX® have developed a unique solution utilizing their Indirect Low-Pressure system to provide reliable and effective automatic fire detection & suppression systems.

COMMON FIRE HAZARDS IN LARGE MINING & QUARRYING VEHICLES

THE PROBLEM

ENGINE COMPARTMENT - Critical components such as Turbo Charger, exhaust manifold and fuel lines due to leakage of oilor fuel, grease etc can ignite on high temperatures and cause fire.

HYDRAULIC LINES & MANIFOLD - Accidentally leak or rupture of Fuel or Oil lines under extreme pressures can cause atomised fuel sprays onto superheated components that ignites and causes trailing fires.

ELECTRIC MOTORS, PUMPS& BATTERY - Components such as alternator, starter motors, battery etc. due to presence of debris or moisture on prolonged use while in operation, can cause electrical short circuits leading to fires.

HYDRAULIC PUMPS, COOLING MOTORS & PUMPS - Failure of the Hydraulic pumps and cooling motors due to over heating/ rigorous use lead to short circuit fires.

BELLY PAN, BRAKING & DRIVE TRAIN - Most heat emitting components like Transmissions, Torque converters, and brakes under stress and overuse cause ignition of accumulated oil/fuel spray that leads to fires.

SOLUTION

- Fast and reliable Automatic detection & suppression of fire in seconds, reducing equipment damage and downtime
- Linear heat detection via Pneumatic tube that requires no external power to detect and activate.
- Reliable,24 x7 system that combines the rapid flame knockdown of ABC Dry Powder with the cooling & blanketing properties of Wet Chemical SF6.
- Designed and tested for harsh & demanding working environments
- Pre-engineered, Low weight, compact with easy installation, ideal for OEM and Retrofit
- High quality, long-life, corrosion free stainless-steel components
- CE Marked and utilising UL listed Fire suppression agents
- Versatile detection options of UL listed Linear Heat Sensing Cables or Pneumatic Linear Heat Detection Tube.
- Option of Manual Operation and automatic annunciation at the operator's cabin.Fast-Detection & Suppression
- No "False Alarm" or Discharges AutoFireX systems only activate in the event of an actual fire/heat impingement
- Low Maintenance & Cost-Effective Service-can be quickly and cost effectively serviced and recharged after a fire.

SYSTEM DESCRIPTION:

AutoFireX® ILP &Dual Agent Systems consist of a high-grade welded steel cylinder and bracket, supplied complete with AutoFireX® Indirect type SS Valve assembly & all necessary fittings. All cylinder assemblies contain Agent in Premix form and is super pressurised with Nitrogen to 15.bar @ 21°C. The systems are available in various sizes (1Kg - 106Kgs).

CYLINDER SIZE:

PRODUCT CODE/CAP	AVAILABLE IN
5000101/1 KG	Powder & Foam
5000102/2 KG	Powder & Foam
5000105/5 KG	Powder & Foam
5000110/10 KG	Powder & Foam
5000111/18 KG	Powder & Foam
5000112/45 KG	Foam
5000113/106 KG	Foam

SYSTEM OPTIONS

PRODUCT CODE/ SYSTEM CAPACITY	DESCRIPTION	ABC POWDER	WET CHEMICAL AGENT	OPERATING PRESSURE
5000105/5 Kg	5 Kg ILP System	5 Kg	-	15 Bar
5000110/10 Kg	10 Kg ILP System	5 Kg	5 Kg	15 Bar
50002018/18 Kg Dual	18 Kg ILP Dual Agent System	9 Kg	9 Kg	15 Bar
5000063/63 Kg	63 Kg ILP Dual Agent System	18 Kg	45 Kg	15 Bar
5000124/124 Kg	124 Kg ILP Dual	18 Kg	106 Kg	15 Bar

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