

# REACTON

FIRE SUPPRESSION



## DUAL AGENT ON ROAD & OFF ROAD VEHICLE AUTOMATIC FIRE SUPPRESSION SYSTEM

### DATA AND SPECIFICATION SHEET

DOC - DSS0003  
01 FEB 2020 - REV C



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## KEY BENEFITS

- P-Mark to SPCR 199
- CE Marked according to PED 2014/68/EU
- Automatic - requires no external power to detect and activate
- Designed and tested for harsh & demanding working environments
- Low weight, compact with easy installation  
Pre-engineered ideal for OEM and Retrofit
- High quality, long-life, corrosion free stainless steel components

## INTRODUCTION

The additional risk associated with the larger vehicles is related to the amount of equipment and performance levels found in these types of vehicles. The greater the equipment levels and performance, the greater the size & quantity of hydraulic devices, pumps, fuel capacity, cooling systems, control valves and high temperature surfaces.

The vehicles that fall into this classification will require additional considerations to ensure an enhanced level of protection.

Reacton® have addressed this by using the benefits of our On Road & Off Road Vehicle Dual Agent system offering complete automatic fire detection & suppression.

The Dual Agent System combines the rapid flame knockdown of Dry Powder with the cooling & blanketing properties of Wet Chemical.

The detection and operation of both systems are identical, the systems are designed to be discharged simultaneously regardless of whether they are manually or automatically actuated. A pre-engineered Dual Agent system from Reacton® consists of:

- Pressurised cylinder(s) complete with the FUREX ABC 770 Dry Powder extinguishing agent and the patented CTX Indirect Valve™ to control & discharge the contents.

- Pressurised cylinder(s) complete with Reacton's Wet Chemical extinguishing agent and the patented CTX Indirect Valve™ to control & discharge the contents.
- Complete pneumatic, non-electrical detection system made up of the Reacton® Detection Tube - a heat sensitive linear heat/flame detector. It is designed to burst at any location throughout its route where there is sufficient heat.
- Discharge network made up of flexible discharge hoses of varying lengths and specialist discharge nozzles to deliver the extinguishing agent where it is required.

## APPLICATIONS

The Reacton® On Road & Off Road Vehicle Dual Agent system is a versatile fire suppression system for Class A, B & C fires all of which are extremely commonplace in this environment.

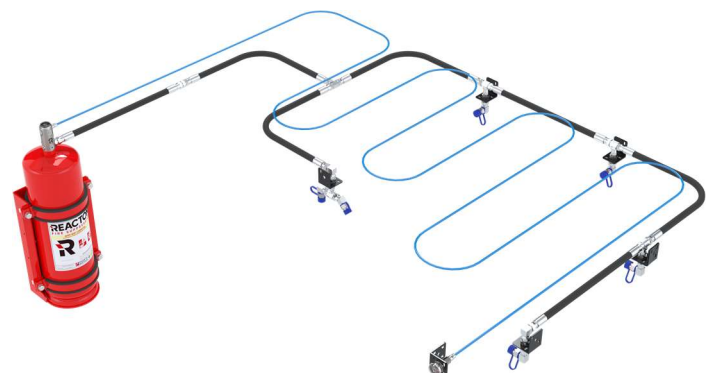
These can present themselves as a spray fire (burst hydraulic hose), pool fire (collection of diesel from a fuel line), short circuit (faulty/damaged wiring loom) and/or fuel leakage (Faulty connections dripping oil on to a hot surface).

All these fire conditions are covered by the On Road & Off Road Vehicle Dual Agent system from Reacton®.

All systems can be easily scaled up or down to suit the large range of On Road & Off Road Vehicles.

Types of Applications include but are not limited to:

- Wheel Loaders
- Excavators
- Cranes
- Telescopic Handlers
- Forestry Machines
- Haulage Trucks
- Mining Equipment
- Draglines



## **NO ELECTRICAL POWER**

The majority of systems on the market rely on a constant source of power to detect and activate the system. At Reacton® through over 30 years of experience we know that relying on a constant supply of electricity on mobile equipment for detection and activation is not ideal.

Many systems on the market fail to detect and activate due to loss of power to the control panel, relying on the operator to activate the system.

The Reacton® system is constantly in automatic mode regardless of the power method of the machine.

## **SUPPRESSION METHOD**

Dual Agent systems are an outstanding fire suppression method due to combining the individual features of Dry Powder & Wet Chemical in to one extremely effective solution.

Not only can the system provide the rapid flame knockdown of Dry Powder with the cooling & blanketing properties of Wet Chemical the system is economical and significantly smaller than that of a Wet Chemical only system.

**Dry Powder Method** – Dry Powder provides a large suppression area due to its particle size, it can quickly cause a fire to expend its energy heating up the particles and therefore provide a “cooling effect”. The Dry Powder will also provide chemical inhibition, reacting with the radicles and arrest the chemical combustion process.

Combined with the superior layering, flame knock-down and barrier effect Dry Powder is globally recognised as the extinguishing medium for Vehicles.

**Wet Chemical Method** – Reacton’s Wet Chemical has durable film forming and blanketing properties separating oxygen from the fuel source. Being a liquid, it will flow into the same locations as flammable liquids providing protection in essential areas.

The Reacton® Wet Chemical solution features superior cooling along with a 20-30 second application rate. This is a highly effective form of preventing re-ignition from superheated surfaces.

## **SYSTEM OPERATION**

The Reacton® On Road & Off Road Vehicle Dual Agent system utilises the CTX Indirect™ valve technology. This technology employs the Reacton® Detection Tube to automatically detect the fire and actuate the system(s).

The tubing is installed in and around the fire risk areas within the protected area, the tubing is pressurised and in communication with the valve which holds it in the closed position. When a fire occurs, the tubing will burst at the point of highest heat, the pressure loss in this process causes the valve to open. (This pressure loss function can be simulated through the use of a manual actuator).

The result of the valve opening allows the extinguishing agent to be delivered through a network of discharge hoses leading to strategically placed nozzles within the hazard.

Due to the speed of the detection and suppression fires are suppressed quickly & safely ensuring minimal damage and downtime. quick and complete fire protection for your valuable assets.

## **SYSTEM DESCRIPTION**



The On Road & Off Road Vehicle Dual Agent system from Reacton® is an automatic pre-engineered pneumatically operated fire suppression system with a fixed nozzle set up.

It is available to protect hazards in both local application & total flood situations.

All Reacton® On Road & Off Road Vehicle Dual Agent systems utilise the pneumatic detection tube to detect and then release the system. The Reacton® Detection Tube can also be configured to support & provide additional functions such as battery isolation, manual activation, In-Cab Monitoring & delayed engine shutdown.

All systems consist of official Reacton® components that are all specifically designed to offer the reliable & proven protection for your On Road & Off Road Vehicle.

The range of approved components can be found in a Reacton® On Road & Off Road Vehicle Dual Agent system are shown below:

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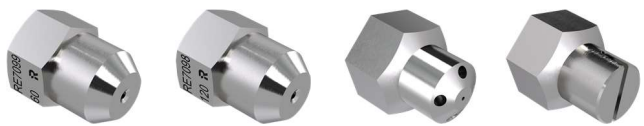
**CTX Indirect Dual Agent Cylinders** – consisting of a high-grade welded steel cylinder painted RAL 3000. A CTX Indirect Valve assembly & all necessary safety plugs and labels. All cylinder assemblies have a temperature range of -20 °C to + 60 °C and are superpressurised with Nitrogen to 15.0bar @ 20°C (217.5psig @ 68°F) or 25.0bar @ 20°C (362.6psig @ 68°F) All systems are supplied factory filled by Reacton® and are available in 4 sizes (4.0kg, 6.0kg 9.0kg & 18.0kg).

**Heavy Duty Bracket** – Wall or floor mounted powder coated heavy duty brackets are used to secure the systems in the correct orientation in demanding environments.



**Discharge Nozzle** – Available in four types either the LR Type & FF Type for Dry Powder and the FC60 Type FC120 Type for Wet Chemical. The selection of the nozzle type is based on the application. All nozzles control and distribute the agent throughout the protected risk(s) in a uniform, predetermined pattern and rate.

All nozzles must incorporate a high-grade silicone cap to stop the ingress of unwanted debris or environmental contaminants.



**Discharge Hose** – The Reacton® branded flexible 3/8" hoses have female swivel fittings at each end. All hoses are double braided to endure high impact conditions and maintain discharge performance in high temperatures or fire environments. Fully oil & weather resistant.

**Detection Tube** – Reacton® Detection tubing is the pneumatic detection system specifically manufactured by Reacton® solely designed for the use in fire suppression systems. These tubes rupture at specific temperatures to help trigger the release of suppressants.

The Reacton® Detection Tube is used as a non-electrical detection system. This will trigger the release of the extinguishing medium through a separate discharge pipe network.

The Reacton® Detection Tube is designed to withstand ambient temperatures up to 110°C. It is pressurised with Nitrogen to 15.0bar @ 20°C (217.5psig @ 68°F) or 25.0bar @ 20°C (362.6psig @ 68°F)



**Manual Actuator** – The Manual Actuator provides means of actuation through manual intervention. The device allows for initial charging, commissioning and system pressure checks. All devices have an internal Schrader valve that allow for the safe removal of gauges and charging adaptors.



**In-Cab Monitoring System** – The In-Cab Monitoring System is to be used in situations where a sounder and physical indication of the status of the fire suppression system is required. The push button is connected to a manual release venting solution where the system can be manually actuated.

**Battery Isolation Unit** – The Battery Isolation Unit is controlled and triggered with the use of Reacton® Detection Tube. The Battery Isolation Unit is used to isolate a power source for minimising the chance of fire re-ignition.

**Engine Shutdown** – In certain applications engine shutdown or delayed engine shutdown is required, if specified this can be carried out by utilising the optional functions available in the In-Cab Junction box.

**SPECIFICATIONS**

In order for the On Road & Off Road Vehicle Dual Agent Fire suppression system from Reacton® to carry a valid warranty and offer its strict performance characteristics the system shall be fully designed, installed & maintained in accordance to the approved Design, Installation, Operation & Maintenance Manual. Only approved Reacton® components shall be used on all systems whether it is for an initial, service or replacement installation.

All placement and routing of components shall meet the recognised limitations and specifications set out in the approved Design, Installation, Operation & Maintenance Manual. For further reference please see the relevant Design, Installation, Operation & Maintenance Manual.

**APPROVAL**

- P-Mark to SPCR 199
- Approved - UNECE Regulation No.107
- CE Marked
- PED 2014/68/EU
- Designed, manufactured & tested in ISO 9001: 2015 certified facilities

**SPECIFICATION TABLE – UTILISING 5.4, 7.5 & 12.0LTR CYLINDERS**

DESCRIPTION	DRY POWDER	WET CHEMICAL	OPERATING TEMPERATURE	OPERATING PRESSURE
8 KG DUAL AGENT SYSTEM	4.0 kg [8.8 lbs]	4.0 kg [8.8 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
12 KG DUAL AGENT SYSTEM	6.0 kg [13.2 lbs]	6.0 kg [13.2 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
18 KG DUAL AGENT SYSTEM	9.0 kg [19.8 lbs]	9.0 kg [19.8 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
27 KG DUAL AGENT SYSTEM	18.0 kg [39.7 lbs]	9.0 kg [19.8 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
36 KG DUAL AGENT SYSTEM	27.0 kg [59.5 lbs]	9.0 kg [19.8 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
45 KG DUAL AGENT SYSTEM	27.0 kg [59.5 lbs]	18.0 kg [39.7 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
54 KG DUAL AGENT SYSTEM	36.0 kg [79.4 lbs]	18.0 kg [39.7 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]

**SPECIFICATION TABLE – UTILISING 24.0LTR CYLINDERS**

DESCRIPTION	DRY POWDER	WET CHEMICAL	OPERATING TEMPERATURE	OPERATING PRESSURE
36 KG DUAL AGENT SYSTEM	18.0 kg [39.7 lbs]	18.0 kg [39.7 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
54 KG DUAL AGENT SYSTEM	36.0 kg [79.4 lbs]	18.0 kg [39.7 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
72 KG DUAL AGENT SYSTEM	54.0 kg [119.1 lbs]	18.0 kg [39.7 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
90 KG DUAL AGENT SYSTEM	54.0 kg [119.1 lbs]	36.0 kg [79.4 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]
108 KG DUAL AGENT SYSTEM	72.0 kg [158.8 lbs]	36.0 kg [79.4 lbs]	-20 °C to +60 °C [-4°F to + 140°F]	15.0 or 25 bar [217.5 or 362.6 psig]

# REACTON

## FIRE SUPPRESSION

Protecting your future, today



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### REACTON SYSTEMS PROTECT

- On-Road and Off-Road Vehicles
- Residential Kitchens
- Manufacturing and Machining Equipment
- Industrial Equipment
- Heavy Equipment
- Power Generation
- Data Centres
- Electrical Control Cabinets

