

CYLINDER BATTERY WITH DECLINING PRESSURE TECHNOLOGY

WATER
MIST
SYSTEMS



CLOSED NOZZLES

SECURE AND ECOLOGICAL EQUIPMENT

RG W-FOG UAC



The High Pressure Water Mist system with cylinder battery, RG W-FOG UAC, and wet piping, meaning, with closed nozzles, utilizes the latest technology to control, suppress or extinguish the fire occurred in the protected area. For this purpose, it has the most efficient nozzles, manufactured with the highest quality standards and tests in the most prestigious international laboratories according to regulations and strictest guidelines for each application.

In the system RG W-FOG UAC the closed nozzles detect the source of the fire and they generate the water mist, the water cylinders store said element and the inert gas cylinders propel the water to the nozzles, carrying out the correct distribution and misting of the agent in the protected area.

The water mist utilizes a natural element as an extinction agent, water, but in the most efficient manner, protecting the protected area and

extinguishing the fire, reducing the damages caused to a minimum. It is a completely ecological system that employs an inert gas, naturally present in the air we breathe and which has no greenhouse effect nor damages the ozone layer.

It is especially recommendable when there are people involved that work occasionally or permanently in the protected area, also, the water mist absorbs the decomposing particles and the toxic gases and irritants created by the fire.

OPERATION PRINCIPLES

DETECTION:

In systems with closed nozzles, the activation of the extinction system is triggered by the breaking of the nozzle's thermal bulb, which is set to a determined temperature. When there's a fire in the protected area, the nozzle's thermal bulbs break upon reaching the set temperature, giving rise to a depressurization of the piping network that triggers the activation of the RG W-FOG UAC extinction system.

ACTIVATION:

Once the extinction system has been activated, the nitrogen cylinders are activated, which discharges the propelled gas in the water cylinders, pressurizing them and forcing all the water to travel through the piping network and discharge over the protected area through the nozzles. These nozzles have been designed, tested and manufactured for the area they are protecting and they are the responsible for carrying out the correct water misting.



DECLINING PRESSURE TECHNOLOGY:

RG-Systems offers a unique protection system with High Pressure Water Mist by means of cylinder batteries and wet piping, with declining pressure technology, in which, the nitrogen cylinder discharge pressurizes the water cylinders and they carry out the correct water impulsion through the distribution network to the diffusers.

COMPONENTS

A cylinder system with wet piping consists of:

- Water cylinders at atmospheric pressure (with volumes of 67, 80 and 140 liters).
- Cylinders of N₂ loaded to 200 bar (with volumes of 67, 80 and 140 liters).
- Pilot control cylinder SIEX-WF-TH1 or SIEX-WF-TH2.
- Discharge collector to collect the propelled water and direct it to the network.
- Retention valves for the correct orientation.
- Network of pipes, accessories and closed nozzles, for the correct misting.
- Distribution blocks and direct tees to facilitate installation.
- Pressure gauges, pressure gauges with electric contacts, switches, etc.
- Pressure switches, flow switch, etc.
- Trigger hoses, discharge hoses, adapters, etc.
- Electric, manual, pneumatic, etc. discharge headrests.
- Weighing systems for the water and nitrogen cylinders.



The High Pressure Water Mist system RG W-FOG UAC is formed by two types of cylinders, some contain water at atmospheric pressure and others contain the nitrogen utilized as propelled gas, which takes care of the water pressurization and to discharge it through the closed nozzles.

The utilized nozzles are closed, designed and tested specifically for the hazard in question. The water cylinders and the piping network, as well as all the accessories (from hoses to switches) are common so much for the technology of constant pressure as for the technology of declining pressure.



The only difference between the two technologies are the nitrogen cylinders propellant valves. When it comes to the pressure system, the valve unloads the agent with the water propellant, varying the discharge pressure during discharge duration.

PILOT CONTROL CYLINDER SIEX-WF-TH1 OR SIEX-WF-TH2:

The pilot control cylinders are especially designed for pressurizing the piping network in systems with closed nozzles or wet piping and to activate the extinction system when necessary. They are loaded with inert gas IG-100 (nitrogen) to 100 bar as the pressurization agent of the piping network. The water network must be filled previously with filtered water. These control cylinders can require additional components such as non-return valves, shutoff valves, etc., for the correct system pressurization.

These pilot cylinders have the same form of pressurizing the piping network, but they have a different way to activate the extinction system. The pilot cylinder model SIEX-WF-TH1, has two pressure switches, one regulated to 60 bar and another to 30 bar, when the pressure switch goes over 60 bar it indicates that the pilot cylinder has low pressure, and when it jumps over 30 bar it automatically activates the extinction system. Said discharge is carried out through the fire department,

which is why the system requires one. On the other hand, the pilot cylinder model SIEX-WF-TH2, does not require of a fire fighting department to activate the extinction system, this is carried out through the pilot cylinder upon detecting a low pressure in the piping network.

It is highly recommendable to test leaks in the piping network prior to the installation of these pilot control cylinders, since a leak can deactivate a system when it's installed.

SPECIAL COMPONENTS:

All of the electric components used in this system can be substituted for electrical components with explosive atmosphere classifications.

That is to say, when the equipment is installed or is protecting a special area that has, be it a temporary or permanent, an atmosphere with the possibility of an explosion due to the presence of a spark or a electrical heat source, the possibility of substituting the electric components of our system by others (also approved) that are protected against these atmospheres.

Said electric components have different classifications for atmospheres more or less restrictive and are approved by different agencies such as ATEX, UL, CSA, IEC Ex, KOSHA, NEPSI, etc.



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