



Superior data center fire protection



Water mist fire suppression system for data centers

The power behind **your mission**





Advantages of the AquaMist ULF Solution for Data Centers

Ventilation is no longer a problem

Data centers are ventilated to maintain an optimum operating temperature. This creates one of the greatest challenges for fire systems to overcome. Smoke and heat are transported by the ventilation system, delaying operation and impacting efficient system performance.

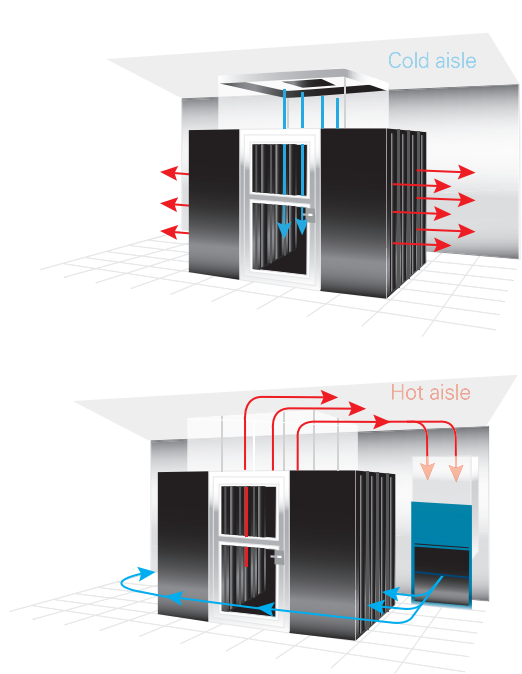
Shutting down ventilation is not viable because of the impact this will have on the operational efficiency of the data center.

The AquaMist ULF Data Center solution has been tested and approved to operate in ventilated conditions, thus allowing operators total freedom in designing ventilation arrangements.

AquaMist ULF guarantees rapid detection and discharge in a range of ventilated conditions. This means operators no longer have to choose between fire suppression and cooling.

Protecting your Data Center when it contains fire-propagating cables

A Data Center typically contains a high density of cables in trays located above servers and below the raised floor. Previously, fire protection systems only provided protection for non fire-propagating cables. AquaMist ULF solution is approved by FM to further protect against the additional hazard inherent in fire-propagating cables, this allows greater flexibility in cable selection.



An FM/VdS Approved solution for the complete data center

The AquaMist ULF solution for data centers has been full-scale fire tested by FM/VdS in multiple scenarios, including areas above and below raised floor, hot aisle and concealed spaces. We offer AM28, AM29 and AM30 nozzles with activation temperatures of 57°C (135°F) and some with 68°C (155°F), providing more flexibility in design. For all other areas, such as storage and loading bays for example, we can offer the AquaMist ULF FM/VdS approved LH/HCI/OH1 and AquaMist ULF FM approved Machinery Spaces system in combination



with FM/VdS approved sprinklers. This provides a complete FM/VdS solution for the whole data center building with only one common water supply (tank) and only one pump skid unit.

The architecture of every data center building is unique. If you believe your installation is complex enough to require a custom solution, please contact us. We will be happy to provide an expert appraisal or survey that will help you decide on the right solution for your business needs and requirements.

Continuous protection

In general, water mist systems do not require treated water or additives, so the system can be supplied by potable water or water storage tanks.

A pre-action solution to minimize risks

Aquamist ULF for Data Centers is designed as a pre-action system, which reduces the risk of damaging electrical equipment when compared to traditional wet pipe nozzle systems. In a wet pipe system, damage to nozzles or an accidental discharge results in immediate introduction of water to areas containing electrical equipment.

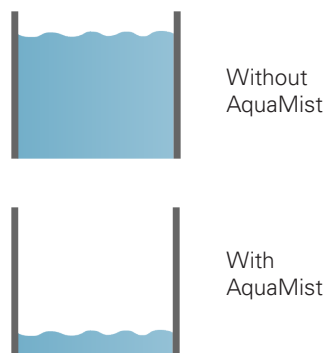
A pre-action system operates differently as water does not enter the piping network until a fire has been detected and verified. The pre-action AquaMist ULF solution for data center will provide complete protection of the equipment while minimizing the risk of collateral water damage.

Environmentally conscious solution: save space and up to 80 percent of water

Is floor and ceiling space limited in your data center? Would you like to decrease water demand and decrease pipe sizes in your design? The AquaMist ULF solution for data centers is the answer.

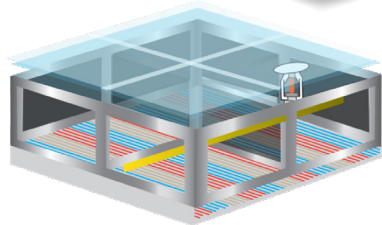
The Water Mist alternative to traditional pre-action systems can reduce water demand by up to 80 percent making it possible to reduce supply piping and water storage tanks.

Fire protection water tank for data center



Suitable for below-floor and concealed spaces

AquaMist ULF offers design flexibility for different layouts and has been extensively tested to provide flexible protection below floors, in cable voids or wherever cable trays are located.



AquaMist ULF – the complete system for data centers

1 Pump Skid Unit simplifies your system installation

- Pre-assembled, self-contained control center for the AquaMist ULF system.
- Pre-wired and pre-piped for easy installation and reduced time and labour.
- Available in a variety of configurations with variable water flow rates and pressures required for the system design.
- AquaMist ULF MCC: FM
- AquaMist ULF EMCC: CE marked, FM
- AquaMist ULF EMCC: CE marked, EN14972, NFPA20, EN12845, VdS CEA 4001



2 Pre-Action System with DV-5A Deluge Valve Single Interlock

Pre-Action System with Electric Actuation utilizes automatic AquaMist nozzles and a supplemental detection system. Actuation of the detection system automatically operates (releases) the FM and VdS approved DV-5A Deluge Valve, allowing water to flow into the water mist pipe network to be discharged from any water mist nozzle that may be open.

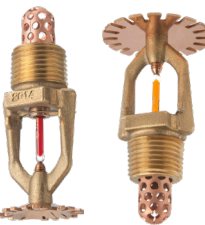
This is a suitable system to protect areas where there is a risk from water damage. Pre-action systems can avoid accidental water damage because the system is only filled with water in the event of fire detection and only discharges water when the nozzle is activated by heat.

The one-piece, diaphragm-style design of the DV-5A is one of the most respected and hassle-free fire protection valves in the industry.



3 Discharge nozzles located within the protected area: AM28, AM29 and AM30

- The AquaMist ULF nozzles Type ULF AM28 (VdS), AM29 (FM) and AM30 (VdS/FM) are closed (automatic) nozzles intended for use with engineered water mist systems.
- AM28, AM29 and AM30 are low-pressure nozzles that utilize a single fluid jet impacting on a diffuser to produce a spray having a range of water droplet sizes suitable for the control of cable fires.
- The nozzles' excellent suppression capacities have been demonstrated in full-scale fire tests. Specifically, the ULF room nozzles have a very low flow rate of only 24 l/min. This low flow rate will cause only minor collateral damage.



4 Flexible Hose connection and G-Press piping

- The Fastflex Flexible Hose is a unique FM and VdS Approved drop assembly comprising a branch line adapter nipple, stainless steel flexible hose, reducer and a lightweight ceiling bracket.
- The Flexible Hose can be installed in false ceilings without cutting pipes associated with installing a drop, armover and elbows.
- Once the ceiling grid is in position, the hoses can be reshaped to suit the final nozzle location.
- A Flexible Hose is installed quickly without large and expensive tools.
- This allows complete flexibility, particularly important where cabinet locations regularly change.
- Stainless Steel G-Press system is FM and VdS Approved and has a 10-year limited warranty from Johnson Controls.



5 FM and VdS Approved detection equipment

- Johnson Controls offers a full range of FM and VdS Approved AquaMist and detection solutions for data centers. Contact us to identify the best option for your data center.





About Johnson Controls

At Johnson Controls, we transform the environments where people live, work, learn and play. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most. We deliver our promise in industries such as healthcare, education, data centers and manufacturing. With a global team of 100,000 experts in more than 150 countries and over 135 years of innovation, we are the power behind our customers' mission. Our leading portfolio of building technology and solutions includes some of the most trusted names in the industry, such as Tyco®, York®, Metasys®, Ruskin®, Titus®, Frick®, Penn®, Sabroe®, Simplex®, ANSUL® and Grinnell®.

For more information, contact your regional Fire Suppression product representative, or visit www.tycoaquamist.com

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