

FOGMAKER

INTERNATIONAL AB

Protect Lives and Equipment Fire Suppression for Buses



Pure Performance with Triple Action

Safety shouldn't be a Compromise

THE CHALLENGE...

A fire in a bus engine or enclosed compartment can be devastating for both driver and passengers and can result in unwanted downtime, stand-still on a highway, and complete destruction of the bus.

Most fires in vehicles with combustion engines start in the engine compartment - a place where a fire may not be discovered until it is a blaze and almost impossible to suppress with a hand-held fire extinguisher.

In battery-electric buses, both thermal runaway and components can be fire initiators, but research presented at the 2023 FIVE conference shows 50-60% of EV fires never involve the battery itself. The most common reasons for a vehicle's battery to start burning are collisions or external fires.

Fogmaker works through preventing a fire from reaching the battery, and if a battery should catch fire, the Fogmaker system cools it and gives time to evacuate. The mist will not penetrate components with an IP class of IP66 or higher.

Buses with fuel cells have similar risks and a fire can lead to a devastating gas explosion. Here too, proactive fire suppression is needed.

...AND SOLUTION

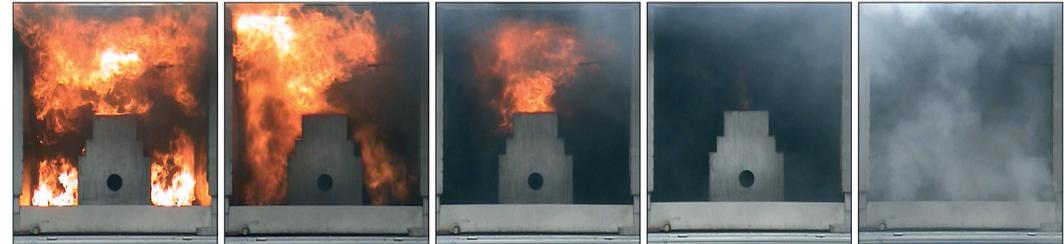
Fogmaker has decades of experience in detecting and suppressing fires, and the system will provide the best possible fire protection performance if there is an emergency. The system is tailored to each bus model and energy source.

The specially formulated water-based mist protects engines, hydraulic components, and similar at-risk areas. **The system is always active, fully automatic, and independent of electricity. It has a great cooling effect due to a long emptying time, and this prevents re-ignition.**

The Fogmaker system has a large number of international certifications and our new Eco1 Fluid is 100% PFAS free, Greenscreen Certified™ at the silver level, and R107 approved.



"From 870 °C to 136 °C in 10 seconds!"



+870 °C
0 sec

5 sec

+136 °C
10 sec

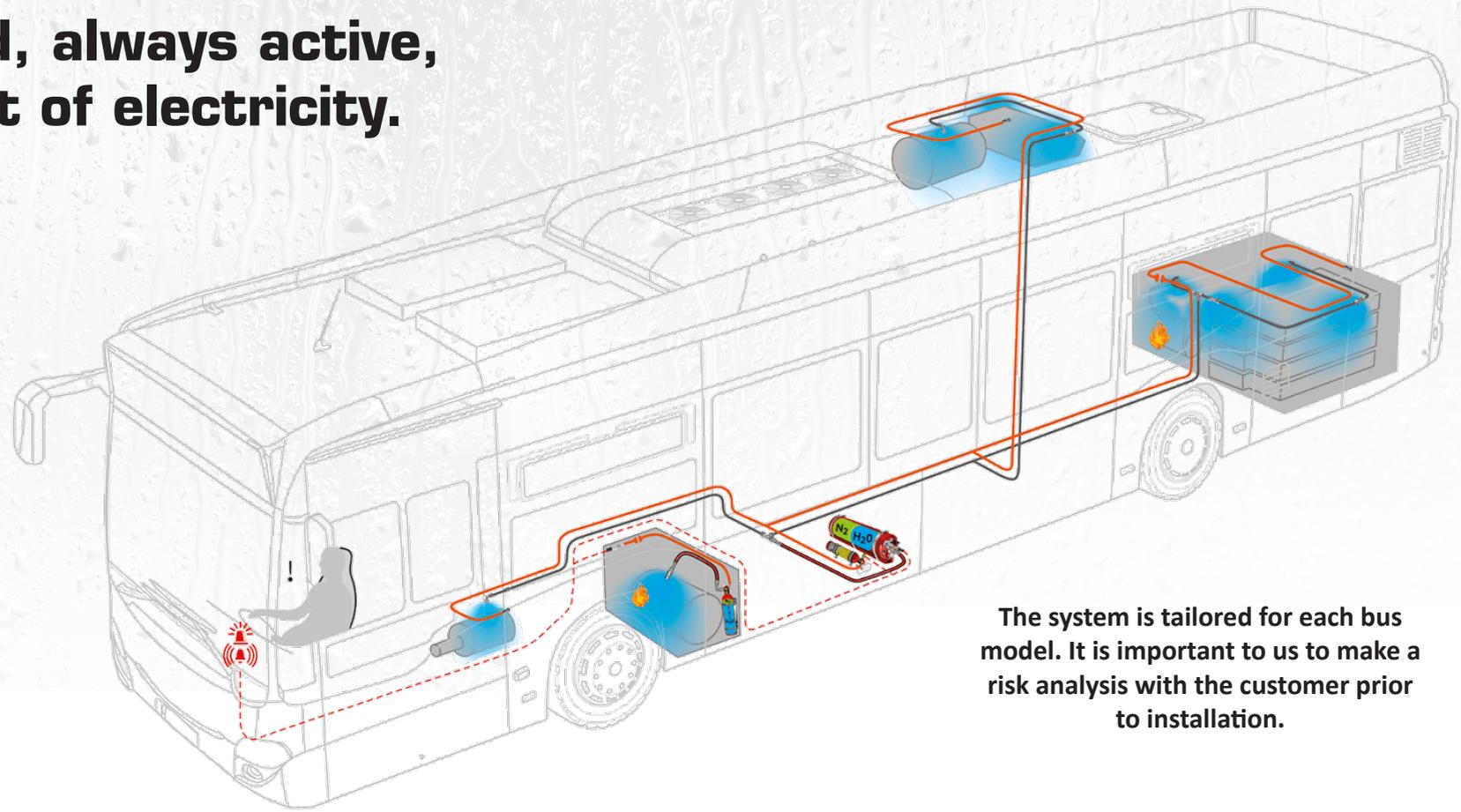


Unique cooling effect; temperature reduction of 734 °C in 10 seconds!

Fire suppression test in a simulated engine compartment with a volume of 2,5 m³. The fire source consists of four 20 x 40 cm trays filled with diesel. Diesel spray is also applied at a rate of 2 liters per minute at a pressure of 5 bar. The heat effect reaches approximately 1,600kW. The pictures are taken with 2 second intervals. During the whole interval, 10 seconds, approximately 7 dl suppressant is used.



Fully automated, always active, and independent of electricity.



The system is tailored for each bus model. It is important to us to make a risk analysis with the customer prior to installation.

Fogmaker Benefits



Choice between several piston accumulator sizes for greater flexibility.



Easy installation.



Simplicity – no power supply, position independent, and requires minimal space.



Triple Action³ – attacks all three sides of the fire triangle.



Automatic engine shutdown (optional).



Great cooling effect and long emptying time, which prevent re-ignition and down-time.



System monitoring – activity, low pressure, and fire alarm.



Low Life Cycle Cost – annual inspection, 5 year service, 10 year service.



Quality and environmental certifications. IATF-16949.



Free technical support.



Global network via Certified partners.



Certified Partner and OEM training courses via Fogmaker Academy.



ACTIVE 24/7

The system is always ready. No power supply needed for activation or system monitoring.



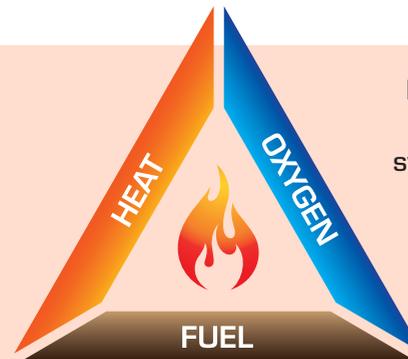
MINIMAL DOWNTIME AND LOW TCO

Quick and easy maintenance and quick recharging.



SIMPLICITY

The system works without electricity and regardless of orientation.



Fogmaker's fire suppression system handles all three sides of the fire triangle: heat, oxygen, and fuel. The system deploys when the protected area becomes too hot, and sprays a water-based mist that expands and chokes the fire. The mist also cools the area for a long time - at least double compared to other certified systems* - which prevents reignition.

*Result of the SP4912 testing method

THE IMPORTANCE OF SERVICE

The Fogmaker Fire Suppression System is designed to save lives and protect property. The system is sturdy and reliable, but requires regular service to ensure it will be deployed when needed. Service can only be done by accredited technicians.

Service intervals can vary depending on type of machinery, but most systems require an annual service, a five-year service, and a more extensive ten-year service. Some systems installed in heavy-duty environments may need to be serviced more often.

It is important to adhere to these intervals. If there is a fire, many insurance companies will not pay if the fire suppressing system hasn't been maintained. Also, Fogmaker gives a two-year warranty from the manufacturing date, but the warranty is void if the system hasn't been serviced.

Accredited technicians have gone through a course at Fogmaker Training Academy, and will be able to show an ID card or a certificate. If you need help finding a technician, visit www.fogmaker.com to find our partner in your country. They can help you locate a technician near you.

The Fogmaker system has a low Total Cost of Ownership, and following the service guidelines will ensure that your system will last and be reliable for many years to come.

You can budget for service, but not for a fire!

SERVICE SCHEDULE

1

The Annual Service

Must be performed the first time within a year ± 2 months after installation date.

5

Five Year Service

Five years after the manufacturing date. The service includes replacement of fluids and pressure gauge.

10

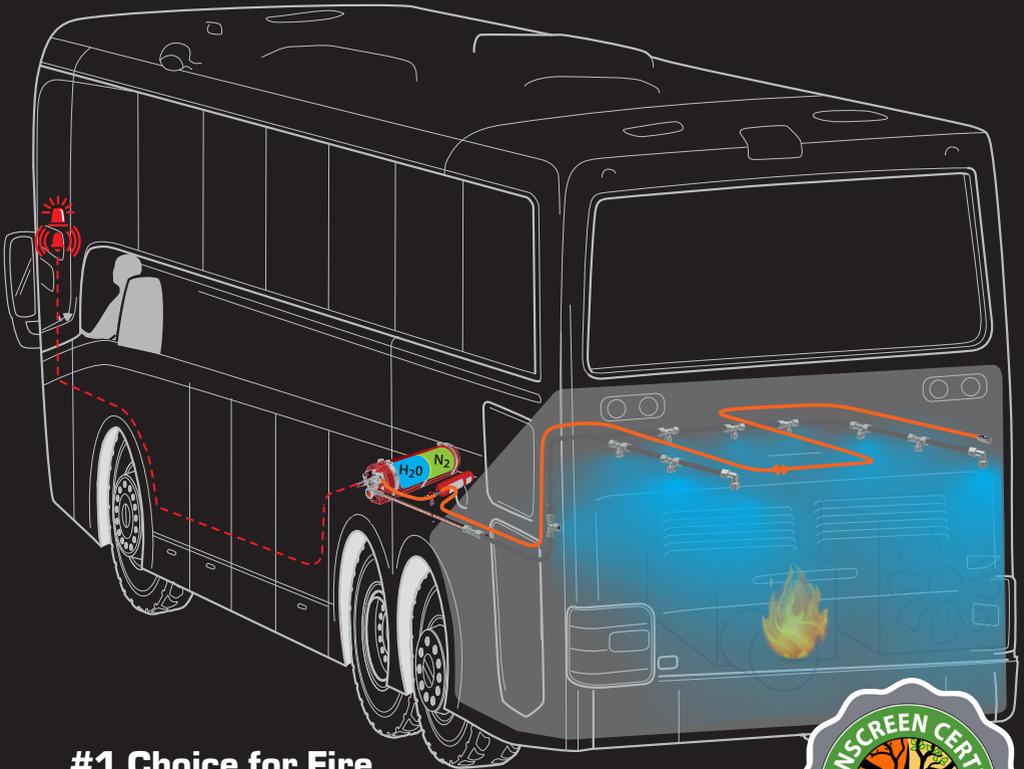
Ten Year Service

Ten years after the manufacturing date. During this service, items like detector bottle and gaskets are replaced.



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#1 Choice for Fire Suppression for Buses

Outstanding choking and cooling effect, at least double compared to other certified systems (SP4912 method test result), prevents re-ignition and gives time for a safe evacuation.



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