

Water Mist System for Bus occupant Compartment Fire Protection System

A Fire Protection and Alarm System (FP&AS) for standard bus passenger (or, occupant) compartment has been designed and developed by Centre for Fire Explosive and Environment Safety (CFEES), as a spin-off technology.

Based on fire risk assessment of the standard bus the heat and smoke in the passenger compartment is controlled, thus providing additional evacuation time through effective thermal management during fire incidents, by providing FP&AS.

A water-mist based fire protection and fire alarm system for buses has been designed to manage the temperature in the passenger compartment upto 50°C. The developed system in the passenger (occupant) compartment includes a network of tubing with suitable number of atomizers linked to a water tank of appropriate capacity, along with a pressurized nitrogen cylinder. The fire alarm system comprises of smoke detectors wired to a control panel which is to be installed near the driver seat with the provision of an audio-visual alarm in case of fire.

The system developed by CFEES for occupant compartment reduces the risk to life and property and give active protection measure on its implementation and complies with AIS-135 for occupant compartment. The same is being implemented in the Occupant Compartment in 'Type III' Vehicles (those are designed and constructed for long distance passenger transport, for seated passengers) and School Buses.

This technology is available for transfer to the interested industry for commercialization.