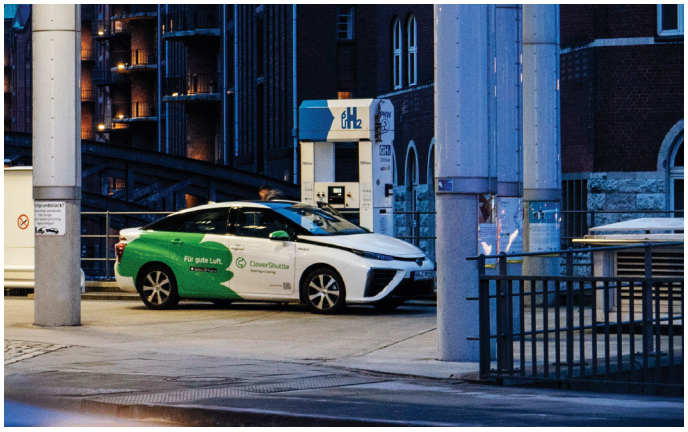
Hydrogen Ignition and Explosion Danger in Electric Vehicle Refueling

Keeping an eye on your safety

In the area of hydrogen vehicles, there is a risk of hydrogen ignition in fuel storage, fuel supply lines, and fuel cells. Hydrogen fires present specific risks, as they are almost invisible to the naked eye during daylight hours. In addition, they have low radiant heat, so the fire may not be detected until a person is actually close to or inside the fire itself.

Challenges

Although rupture of a fuel cell membrane would result in combination of oxygen and hydrogen, this would usually be detected by the control system, as the fuel cell would lose potential. The fuel cell also has a low operating temperature, so does not present a significant thermal ignition risk. However, the combination of hydrogen and oxygen on the catalyst surface is a possible source of ignition.



To maintain a minimized risk of hydrogen ignition, an effective flame detection solution should be installed.

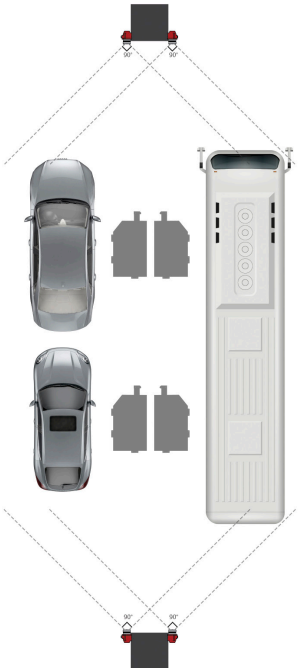
Solutions

Early detection and fire containment is the only solution.

- The goal is to prevent overheating, which could lead to combustion, by using ultra fast flame detectors that will alert in an instant to prevent a chain reaction
- Using Spectrex 40/40 Series Next Generation Quad-Sense flame detectors
- A detection speed of <50 milliseconds
- Long (90 m) distance detection to optimize the area coverage

The Next Generation of SharpEye™ Quad-Sense™ 40/40 Flame Detectors

- field-proven, reliable detectors that provide the fastest, longest distance detection to optimize the area coverage.



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