

## BUS & COACH FIRE PROTECTION

### HYDROGEN LEAK DETECTION SYSTEM

With government bodies, manufacturers and operators alike working towards a cleaner, more sustainable and economical public transport, hydrogen fuel is set to shake up the future of commercial transport.

Hydrogen vehicles bring additional challenges that need to be considered to ensure buses and coaches remain safe and efficient. With a high propensity to leak through any seals and a wide flammability limit, the risk of hydrogen fuel leaks needs to be addressed.

The Forman Hydrogen Leak Detection System identifies wasteful and potentially explosive hydrogen leaks by continuously monitoring hydrogen levels. Using advanced catalytic sensors, the system can detect even minute amounts of hydrogen.



#### High accuracy

The system detects levels of hydrogen up to 100% of the Lower Flammability Limit (LFL).



#### Warning and alarm notifications

The system provides a warning and an alarm at two levels, in accordance with HSE RR1123.



#### Operation without vehicle power

An internal back-up rechargeable battery allows detection of hydrogen while the vehicle is off.

## How it Works

The Forman Hydrogen Leak Detection System uses high-quality catalytic sensors capable of detecting hydrogen levels from 0% to 100% of the Lower Flammability Limit (LFL).



Hydrogen Leak Detection System Sensor

When the catalytic sensor comes into contact with hydrogen gas, it reacts with the hydrogen, resulting in a change in resistance. If the hydrogen level reaches 10% LFL, this change in resistance triggers a warning notification. If the hydrogen level reaches 25% LFL, an alarm notification is given.

The sensor is mounted to a module which contains a back-up, rechargeable battery power supply, allowing detection of hydrogen gas while the vehicle is off. In addition, the module is housed in a rugged, anodised aluminium case to protect the sensitive components.

## Integration with Forman VMMS and Forman VCM

Up to four Hydrogen Detector Zones, with multiple sensors per zone, can be integrated with the **Forman VMMS Vehicle Multi-Message System** and **Forman VCM Fire Suppression System Control Module** to deliver warning and alarms notifications.

When integrated with the Forman VMMS, the driver will receive voice messages alerting them of a warning or alarm condition if hydrogen levels reach the predetermined levels.

## Key Features

- Long operation life, up to 5 years
- Sensitive to hydrogen, methane, and LP gas
- Low pre-conditioning period  $\leq 30s$
- Rapid periodic testing checks and recalibration
- Billet aluminium enclosure
- Ability to have additional sensors with no impact on the wiring harness
- Internal rechargeable battery with over 72 hours battery life
- Resistant against cross-sensitive organic vapours and silicon compounds in harsh environments

To find out how we can help you enhance the safety of your vehicles, call us on

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