



**TELEDYNE**  
**GAS AND FLAME DETECTION**  
Everywhere you look™



**ProDetec**

Measure . Prevent . Protect . Control

## Empower safety in Hydrogen Transitioning

Hydrogen will be at the heart of the energy transition. It sits at the crossroads, with so many ways to produce it and so many ways to use it. Green hydrogen is also a building block to green ammonia, e-fuels, and e-chemicals. In many applications, such as fertilizer production, hydrogen has been used for centuries. In others it will grow rapidly and displace fossil fuels.

Hydrogen will also play a role in the gas, heat and power utility sectors and a store of molecular energy and a decarbonised fuel. At ProDetec, our fixed and portable equipment and systems have been ensuring the safe use of hydrogen for decades. We are now enabling a safe and efficient energy transition.



**You focus on your hydrogen transition.**  
*We focus on your safety.*



# Teledyne Gas and Flame Detection Solutions



## OLCT 100 Series - SIL2

A range of housings and sensors for the full hydrogen value chain. Range extends to high temperature H<sub>2</sub> sensor.

### Electrochemical cell

H<sub>2</sub> range: 0 to 2 000ppm

Sensor life: 2 years

Temperature: -20 to +50 °C

Other gases\*: O<sub>2</sub>, NH<sub>3</sub>, CO, H<sub>2</sub>S

### Catalytic oxidation

H<sub>2</sub> range: 0 to 100% LEL

Sensor life: 5 years

Temperature: -40 to +60 °C

Other gases\*: Flammable gases

*High Temperature Version (remote sensor):*

### Catalytic oxidation

H<sub>2</sub> range: 0 to 100% LEL

Other gases\*: Flammable gases, CO, NH<sub>3</sub>

Temperature: -20 to +200 °C

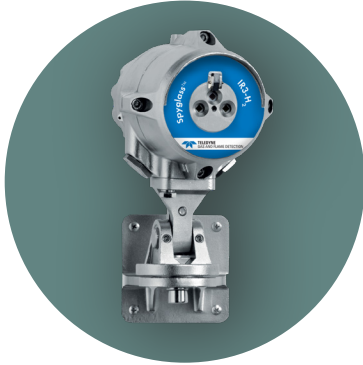
Sensor life: 5 years

## Teledyne Gas and Flame Detection

One-stop shop for fixed gas and flame detection and the required controllers to build integrated systems on larger sites

Wide range of sensors for the main gases in the hydrogen value chain: methane, ammonia, carbon monoxide, and carbon dioxide

# Fixed & Portable Equipment

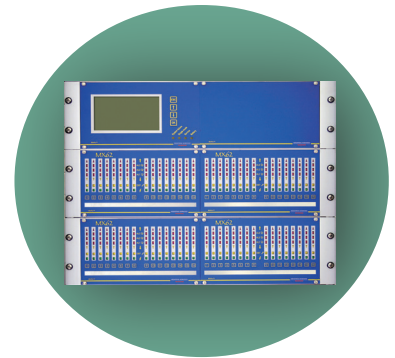


## Spyglass H<sub>2</sub> Flame detector - SIL2

Uses an advanced IR3 optical system capable of 'seeing' flames from inorganic molecules such as hydrogen and ammonia. HD video recording option.

## MX 62 Controller - SIL2

Build networks of wired or wireless gas and flame detection equipment to enable integrated site safety strategies. Compatible with fixed and mobile gas detectors. *MX62 model shown.*



## BM 25 Transportable area Gas Detector

Ideal for in-situ monitoring of maintenance and repair operations around hydrogen systems. Can communicate with compatible controllers using wireless technology for integration with fixed systems.

## Personal safety gas detectors

Range of wearable devices for monitoring up to 5 gases. Coverage of hydrogen, ammonia and all major gases related to the hydrogen value chain. *PS200 model shown.*



## For a safe transition to hydrogen

Our application engineering department provides end-to-end global safety solutions for gas, flame and fire detection.

Compatible range of controllers, services and GDCloud data management for remote monitoring and video footage storage

# Fixed Hydrogen gas and flame detection, let's ask the expert



## Is it necessary to use fixed flame detection in addition to fixed gas detection?

The requirements for gas and flame detection will be determined through processes such as HAZOP and LOPA during system design and engineering. The requirement for gas and flame detection will depend on the nature of the hazard and other available layers of protection.

## When should I use portable or fixed hydrogen gas detection systems?

Fixed gas and flame detection is required when hydrogen is produced, stored, compressed and used. Portable gas detection equipment is recommended for use by personnel that are working in locations where compressed hydrogen gas is present and may potentially leak.

## Is it true that the hydrogen molecule is so small that it can leak out of any system?

Hydrogen and helium are indeed both very small molecules. This property is exploited when these gases are used for leak detection with special 'sniffers'. They can indeed leak through joints that are not tight, but they do not permeate through solid metals at a dangerous rate.

## Is hydrogen really the most flammable gas in the universe?

Hydrogen has a wide flammability range in air: from 4% to 74% at atmospheric pressure. Our portable gas detection systems have an alarm at 50% of the LEL, or 2% hydrogen. Acetylene has a wider flammability range than hydrogen: from 2.4% to 83% in air.

## What are the combustion products of hydrogen and ammonia?

Hydrogen reacts with oxygen in the air when it burns. The flame is colourless. The only product of the combustion is water vapour. Ammonia burns in oxygen from the air to form nitrogen gas and water vapour. The flame colour is best described as a 'greenish yellow'.

## Will sunlight, floodlights or other bright lights activate my flame detection system?

The flame detection systems that ProDetec offers are tuned to respond rapidly in the case of hydrogen, ammonia, methane or methanol flames. They are also carefully designed to ignore 'false' triggers and tests have proven their effectiveness.

## Ready for the hydrogen economy

Enabling a safe and efficient energy transition

ProDetec stands for the safety of your people and security for your assets.



## A changing world of hydrogen production

The traditional processes to produce hydrogen are steam methane reforming of natural gas and gasification of coal. These release around 10 tonnes of CO<sub>2</sub> for each tonne of hydrogen they produce. The transition to green hydrogen produced through the electrolysis of renewable power is underway. Our fixed and portable gas and flame detection systems are ready for the energy transition.

You focus on your Hydrogen Transition  
We focus on your safety. *How can we help you?*



ProDetec Pty.Ltd.  
P. +61 (02) 9620 8700  
F. +61 (02) 9620 8755  
E. [info@prodetec.com.au](mailto:info@prodetec.com.au)  
A. 17/38 Powers Rd,  
Seven Hills NSW 2147  
[www.prodetec.com.au](http://www.prodetec.com.au)