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Press Message

Pilz GmbH & Co. KG  
Felix-Wankel-Straße 2  
73760 Ostfildern  
Germany  
<https://www.pilz.com>

## **Automation solutions for the hydrogen industry: Clean, safe and reliable**

Ostfildern, 16.05.2024 - **Lambertus Monnee, Product Manager**

(Check against delivery)

Everyone is talking about hydrogen! The energy carrier plays a crucial role in the energy turnaround and climate neutrality. It is used in industry, for example, when steelmaking, in the glass industry, for mobility as fuel for transport vehicles or for electricity reconversion. However, there are safety risks involved with hydrogen because the gas is highly flammable, as well as colourless and odourless. Accidents during production, transport or use can have major consequences for human, plant and environment. So to make hydrogen sustainable, the way it is handled must be completely safe and secure. That is the only way to fully exploit the energy carrier's potential.

In the hydrogen industry, the solutions to safety tasks frequently involve material properties and mechanical dimensioning. The more robust the shut-off valves, for example, the safer they are to use. Proven solutions from automation technology can be a valuable addition to these classic safety functions. That's because they help to always consider safety as an integral function of the plant, machinery and the correlations in the process. Automation solutions can take on the task of dynamic pressure and temperature monitoring or safe adherence to the load limits of downstream structures, for example.

### **Safety from production through to use**

From the hydrogen production process through to its use – holistic safety solutions from Pilz offer added value for the whole added value chain for hydrogen. Our control systems reliably detect gas leaks through the evaluation of gas detectors. They safely monitor temperature, pressure, fill level, voltage and current. And in an emergency the systems initiate an emergency stop. They can detect faults within milliseconds and quickly initiate pre-defined safety measures.

These safety functions are essential on a hydrogen refuelling station, for example. This comprises a compression area in which the gas can be compressed up to 1000 bar, a cooling system, high-pressure storage tanks and finally the fuel pump. In France, our automation system PSS 4000 already guarantees safety when hydrogen is dispensed at several public filling stations.

### **Holistic approach to Safety and Security**

A holistic approach includes not just functional safety but also Industrial Security. This describes the protection of production and industrial plants from manipulation or misuse - whether intentional or otherwise. If attackers have the opportunity to penetrate automation and control systems, the safety of the plant, and ultimately the safety of human and environment also, can be put at risk. One example is a remote connection to a container for hydrogen production, to check the system status. This connection must be protected, otherwise the safety-related part of the system can be controlled or modified without authorisation. To protect humans and environment, functional safety must be guaranteed when handling hydrogen. Proven safety principles from the automation industry can achieve this, because they contribute to making hydrogen not just clean, but also safe and secure.

#### ***Caption:***

You can find texts and images for downloading at:

<https://www.pilz.com/en-INT/company/press/messages/articles/241317>

### **Pilz - The Spirit of Safety**

Pilz is a global supplier of products, systems and services for automation technology. As a pioneer of safe automation, Pilz creates safety for human, machine and environment. Founded in 1948, today the family business with its head office in Ostfildern is represented worldwide with 2500 employees in 42 subsidiaries and branches.

The technology leader offers complete automation solutions for Safety and Industrial Security on the machine. These include sensor, control and drive technology - as well as systems for industrial communication, diagnostics and visualisation. An international range of services with consulting, engineering and training completes the portfolio. Pilz solutions are used in many industries beyond mechanical engineering, such as intralogistics, packaging, railway technology, or the robotics sector for example.

### **Pilz in social networks**

In our social media channels we give you background information concerning the company and the people at Pilz, and we report on current developments in Automation Technology.



<https://www.facebook.com/pilzINT>



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**Contact for journalists**

Martin Kurth  
Corporate and Technical Press  
+49 711 3409 - 0  
[publicrelations@pilz.com](mailto:publicrelations@pilz.com)

Sabine Karrer  
Technical Press  
+49 711 3409 - 7009  
[s.skaletz-karrer@pilz.de](mailto:s.skaletz-karrer@pilz.de)