

Battery Show Europe in Stuttgart

Marquardt Presents Components for Hydrogen Fuel Cell Systems

- Battery systems transferable to fuel cells
- Cell voltage measurement in real time
- High-voltage sensor prevents overcurrent
- H₂ leakage sensor measures hydrogen leakage

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Rietheim-Weilheim, Germany, June 2024 - The energy transition will not be achieved with green electricity alone. Green hydrogen is a versatile alternative, not least because of its advantages in terms of storage and transportation. In addition to its measurement and control systems for battery cells, Marquardt therefore also offers components for hydrogen fuel cells. At the Battery Show Europe in Stuttgart, the electromobility supplier will be demonstrating what these components are and what functions they fulfill.

When developing components for hydrogen fuel cells, Marquardt benefits from its many years of experience with battery management systems, some of whose functions can be transferred to fuel cell systems. There are many similarities, especially in the hardware, where almost identical components are used. For example, the system developed by Marquardt for the cell monitoring of batteries in electric cars can be adapted for monitoring fuel cells. The components of the automotive fuel cell are scalable for stationary applications such as heating systems or for use in energy storage systems.

Improved Stack Lifetime through Cell Voltage Monitoring

The Cell Voltage Monitoring System (CVM) and the Cell Voltage Pick-Up (CVP) are used to record cell values directly. The Cell Monitoring System continuously monitors the voltage of the individual cells and provides real-time data on the performance and condition of the cells. This enables the compact CVM to improve stack service life, increase efficiency and detect cell malfunctions at an early stage, thereby

avoiding expensive repairs to the fuel cell stack. The Cell Voltage Pickup (CVP) ensures reliable connection and contacting of the bipolar plate with the CVM.

High-Voltage Sensor Measures Extremely Quickly and Accurately

A crucial component for the safety of electric cars, fuel cell vehicles and stationary battery systems is the high-voltage sensor from Marquardt, which was originally developed for HV battery systems. Compared to conventional sensors, it measures current and voltage extremely quickly and accurately. As current measurement is also relevant for fuel cells, Marquardt can offer an attractive and safe solution with the HV sensor. Thanks to its scalable design and synergies with battery systems, the new HV sensor can be adapted for use in fuel cell systems at low cost.

H₂ Leakage Sensor and Water Level Sensor

The new H₂ leakage sensor measures hydrogen leakage in fuel cells. It reliably detects concentrations between 0 and 4 percent of the highly volatile and flammable gas. This makes it an important safety-relevant feature for the storage and operation of hydrogen systems. The possible applications are diverse and range from monitoring and securing heating systems to electrolysis and use in drive systems. With a new water level sensor, Marquardt also offers the option of contactless level measurement. The new sensor detects the fill level of product water tanks in internal fuel cell vehicles, for example, without contact with the medium and indicates when they are empty.

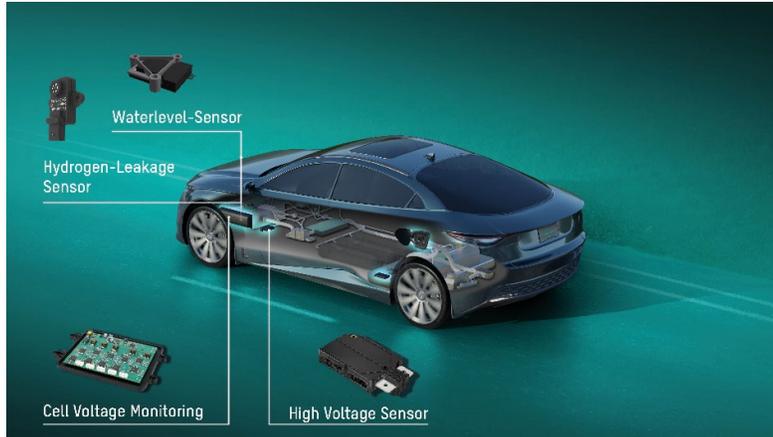
Interested parties can find out more about Marquardt's components for hydrogen fuel cell systems at the Battery Show from June 18 to 20 in Stuttgart.

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Press Photos:



Marquardt-Fuel-Cell-Portfolio.jpg

The fuel cell portfolio from Marquardt.

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About Marquardt

Marquardt, a family-run company founded in 1925 and based in Rietheim-Weilheim, Germany, is one of the world's leading manufacturers of electromechanical and electronic switches and switching systems. The products of the mechatronics expert are used by many well-known customers in the automotive industry and include operating components, vehicle access, driver authorization systems and battery management systems. The company's systems are also used in household appliances, industrial applications and power tools. Marquardt Group employs around 10,000 members of staff worldwide at 22 locations in four continents. Turnover in the 2023 financial year was just under 1.4 billion euros. Each year, Marquardt invests around ten percent of its revenues in research and development.

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