

Pocking, 8 September 2022

H₂ detection in battery container from LG Energy Solution, South Korea

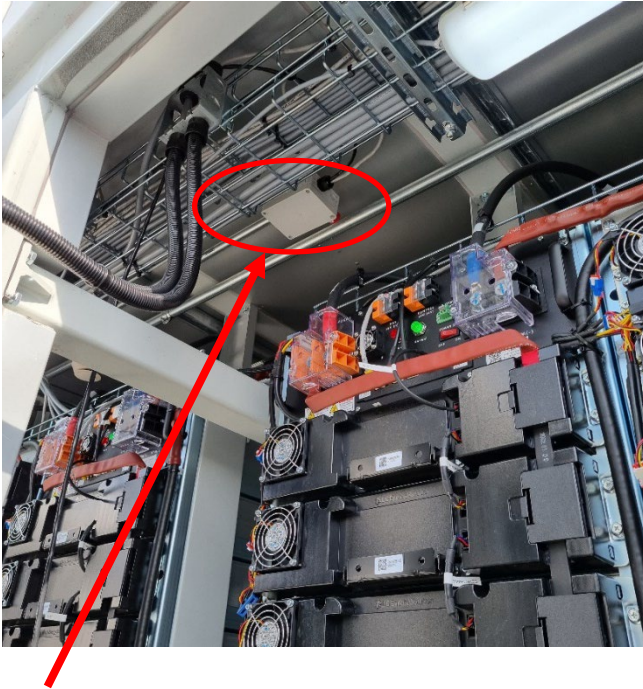
Reliable gas detectors from MSR-Electronic enable safe [H₂ gas monitoring](#).

LG Energy Solution is the global market leader in the manufacture of energy products. In the production of battery containers in South Korea, LG uses reliable gas warning devices from MSR-Electronic.

Almost 600 hydrogen gas sensors are employed. For maximum protection and highest performance, each battery container is assigned a warning and sensor board (WSB2) including an H₂ gas sensor, thus ensuring reliable detection of hydrogen at all times.



Further applications for battery containers / battery storage systems



H₂ gas warning device WSB2 from MSR-Electronic

Battery storage units are used, for example, in solar, wind power and photovoltaic systems to save surplus energy and feed it back in when needed. Battery storage is also used for peak shaving, for example in charging stations for vehicles or for industrial production facilities in order to absorb expensive peaks in electricity consumption. Battery storage systems are also used in a variety of ways in the navy, for example in ro-ro ships and ferries.

Formation of hazardous gases in battery containers

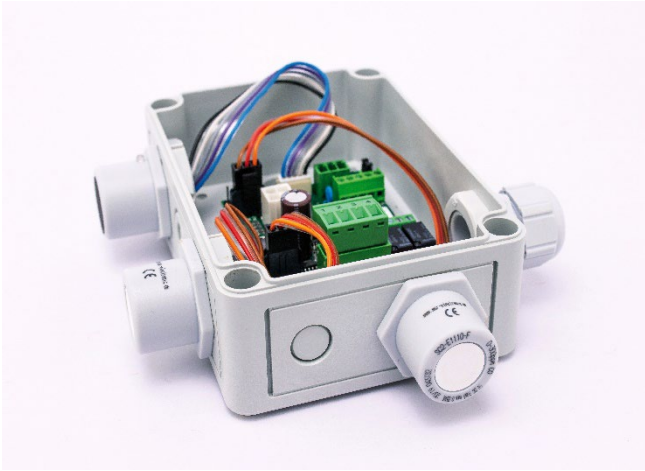
Hazardous gases are generated during the overcharging of batteries in the form of the oxyhydrogen gas H₂ or during thermal runaway, where gases escape from the batteries due to excessive heat generation. This thermal runaway can cause a fire and destroy the battery. The predominant gases are H₂, CO and VOC.

Measures against a thermal runaway

The time span between the escape of gases and the thermal runaway is approx. 10–15 minutes. This is where the MSR gas warning system intervenes immediately. By shutting down the system or cooling the battery through the fire protection system, poisoning and explosions can be prevented. Gas sensors from MSR-Electronic detect these gases at an early stage to protect systems and, above all, human life.

Solutions from MSR-Electronic for reliable gas detection in the battery container

The gas warning device WSB2 incl. gas sensor SC2 is used for gas detection.



The WSB2 Warning- and Sensor-Board with RS-485 interface, 4–20 mA output and alarm relay detects gases at an early stage thanks to its innovative gas sensor. The power supply to the sensors is provided by the board and the measured values of the sensor head are processed for digital communication. The optional alarm relays can be controlled by the DGC-06 controller or locally via the measured values. The communication with the DGC-06 controller is done via the RS-485 fieldbus interface

with DGC-06 protocol. The digital input for the acknowledgement function and other options, such as various communication protocols for direct connection to higher-level BMS, ensure adaptation to the wide range of applications in gas measurement technology.

BENEFITS

- Digital measurement value processing incl. temperature compensation
- Internal functional control with integrated Hardware Watchdog
- Up to 3 different sensor heads (2 identical SC2 possible)
- Analog input, 4–20 mA for 1x analog sensor
- Software according to SIL compliant development process
- Modular technology (plug-in and replaceable), IP65 version
- Easy maintenance and calibration by exchange of the sensor or by comfortable on-site calibration
- Serial RS-485 interface with protocol for DGC-06 or Modbus
- 4–20 mA analog output
- 1x alarm relay with change-over contact, potential-free max. 30 V AC/DC, 0.5 A (option)
- 1x fault relay, configurable as an alarm relay in addition, change-over contact, potential-free max. 30 V AC/DC, 0,5 A (option)
- Display (option)

