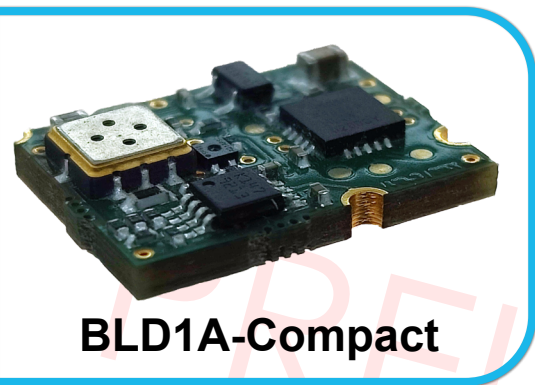
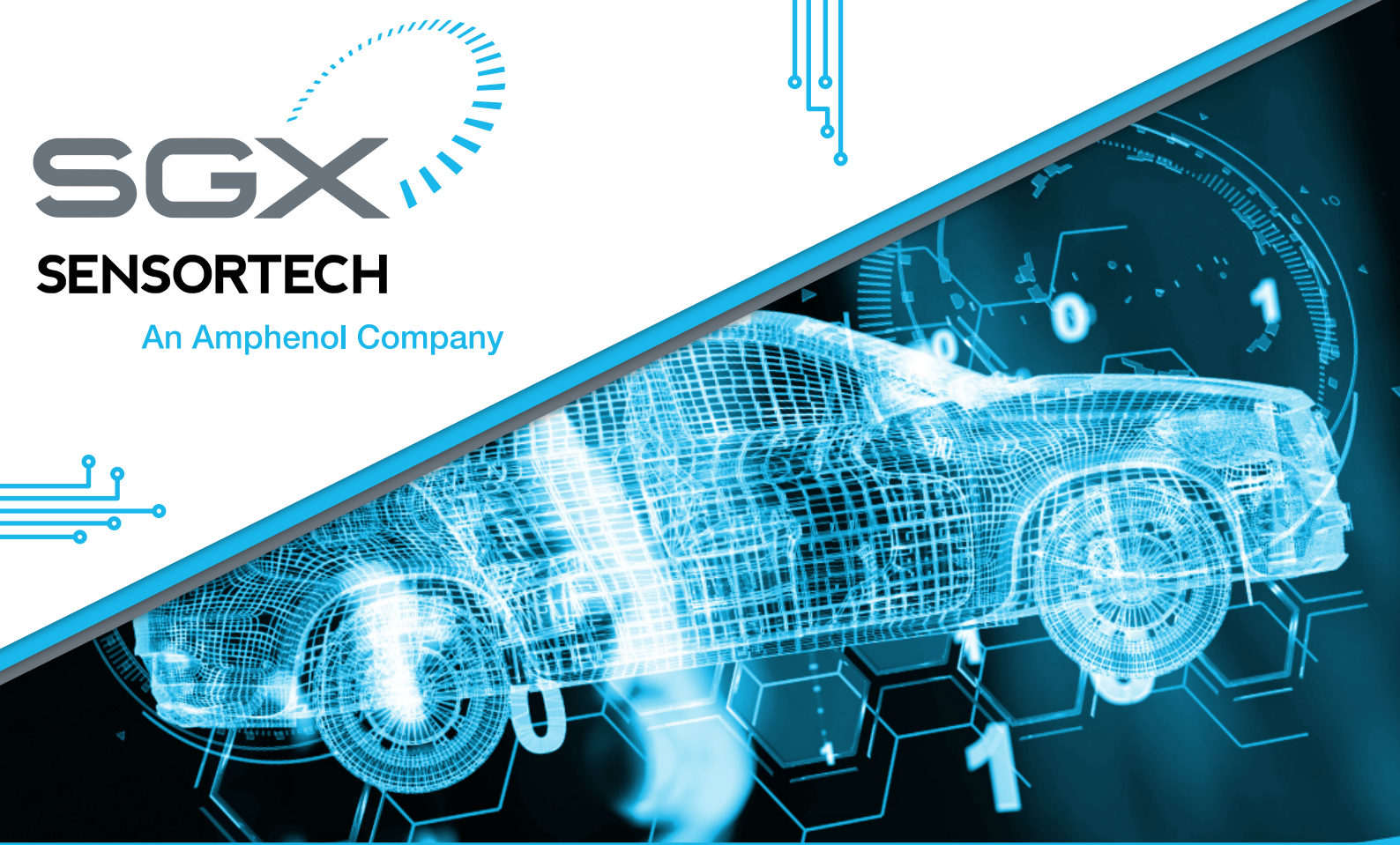


SGX

SENSORTECH

An Amphenol Company



BLD1A-Compact

Hydrogen and Battery Leakage Detection Sensor

Datasheet

BLD1A-Compact is a Battery Failure Detection sensor that measures Hydrogen, Temperature and Humidity level when different battery leakage occur.

The module has to be placed in the battery enclosure allowing to detect a failure mode.

BLD1A-Compact is a solution to allow Battery Management System (BMS) monitor the safe operation of the battery and send an Early Warning Signal when a Thermal Runaway event occurs to give time to passengers to leave the vehicle safely.



Quality, Safety, Responsibility

Functional specifications

Features

- Small size
- Fast response time (< 1s)
- MEMS sensor technology for Hydrogen
- High sensitivities to gases Hydrogen
- Analog output
- PCBA that can be soldered



Principle

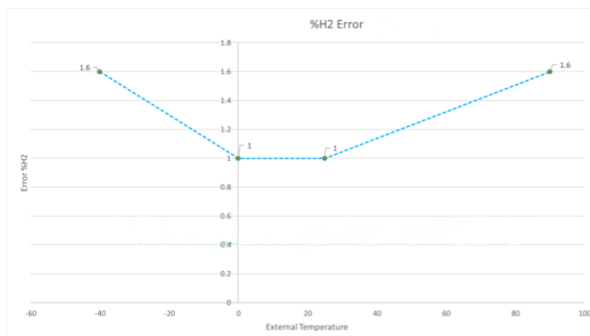
There are different failure mode during the battery life time that could occur. To prevent any injury to the passengers, one solution is to send an alarm as soon as possible to the passenger to leave the car when there is any leakage detection. Our sensor is able to detect different hydrogen before a thermal runaway.

Main technical characteristics

| | |
|--------------------------------|--|
| Temperature and humidity range | 0~95% RH -40°C to +85°C |
| IP level | To be insured by customer |
| Fixing | PCB soldered |
| External dimensions | 17 mm x 13 mm x 2.5 mm |
| Weight | < 10 g |
| Power supply operating range | 3.3V |
| Power consumption | <25 mA for A sample |
| Output signal | Analog 0.3 – 3.3V Corresponds to 0-6% Hydrogen |
| H ₂ detection | Accuracy: 1.0 - 1.6% (in accordance with the table below ¹) Equivalent in Voltage: ± 0.5-0.8V Resolution: 0.23% |
| On board temperature sensor | Range: -40/+85°C Resolution: 1°C Accuracy: ±3% |
| On board humidity sensor | Range: 0 to 100% Resolution: 0.0019% Accuracy: ± 3% RH (max), 0–80% RH |
| Start-up time | < 400ms |
| Lifetime | 10 years or 13'000h ² |

¹ Under 500mL/s airflow and stable condition point

² Can be higher with a lower measurement frequency and depend on detection time target



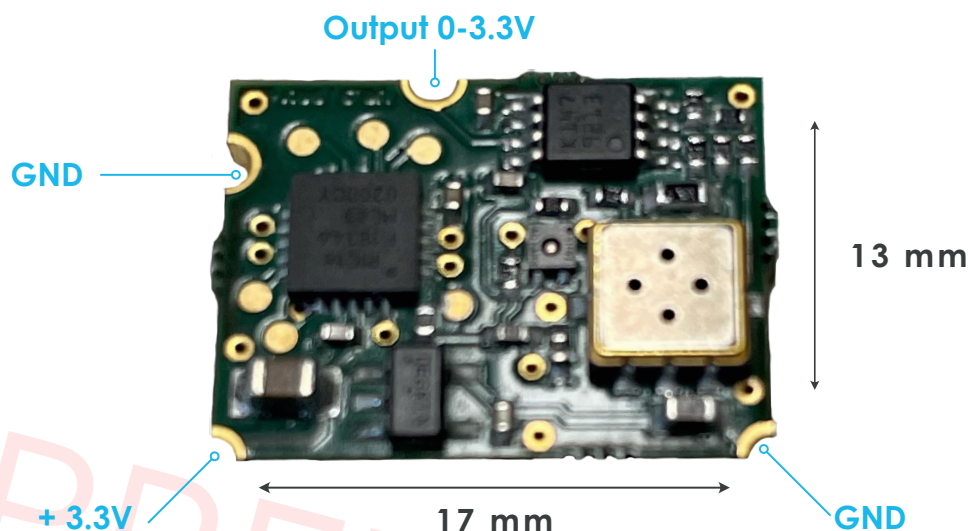
BLD1A-Compact

Interface and integration

Principle

Soldering is done by the 4 fixation point.

3 of those points are connexions to GND, +3.3V, and analog output



Recommendation for integration

The sensor must be exposed to measure the air from the **battery pack only**.

DISCLAIMER:

SGX Europe Sp. z o.o. reserves the right to change design features and specifications without prior notification. We do not accept any legal responsibility for customer applications of our sensors. SGX Europe Sp. z o.o. accepts no liability for any consequential losses, injury or damage resulting from the use of this document, the information contained within or from any omissions or errors herein. This document does not constitute an offer for sale and the data contained is for guidance only and may not be taken as warranty. Any use of the given data must be assessed and determined by the user thereof to be in accordance with federal, state and local laws and regulations. All specifications outlined are subject to change without notice.

SGX Europe Sp. z o.o. sensors are designed to operate in a wide range of harsh environments and conditions. However, it is important that exposure to high concentrations of solvent vapours is to be avoided, both during storage, fitting into instruments and operation. When using sensors on printed circuit boards (PCBs), degreasing agents should be used prior to the sensor being fitted. SGX Europe Sp. z o.o. makes every effort to ensure the reliability of its products. Where life safety is a performance requirement of the product, we recommend that all sensors and instruments using these sensors are checked for response to gas before use.

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