

Datasheet

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H2 sensor (THS1023)

High-end Dual-type Hydrogen Sensor



Tempus Dual-type Hydrogen Sensor (THS1023)

Description

TEMPUS' THS1023 measures Hydrogen concentration and detect the leakage of H2 gas.

It is specialized for the early detection of very small amount of H2 gas and cab be applied to safety system for Electric Vehicle's battery thermal runaway, enabling the driver to be evacuated from a car at least 5 minutes before the battery-explosion.

THS1023 provides an innovative solution to Battery Management System(BMS) and Energy Storage System(ESS) at a reasonable price. Sensor performance including measurement accuracy and movement linearity is excellent and highly competitive.

Dual-type technology which has been combined Tempus' own unique experience of more than 10 years will provide you an opportunity to drive a much safer and reliable EVs.

Features and Benefits

- ❑ Fast and Accurate detection of H2
- ❑ Dual-type technology
(conduction & convection)
- ❑ Detects very small amount of H2 gas.
- ❑ Low Power Consumption
- ❑ Digital Interface: CAN
- ❑ Measuring Range: 0 ~ 4%
- ❑ Embedded Pressure Sensor :
260~1260hPa (Resolution 1hPa)

Applications Examples

- ❑ Detects different possible cases of a battery failure and provides warning.
- ❑ For Energy Storage System
- ❑ For Battery Management System
- ❑ Safety system for Electric Vehicle.

Key Specifications

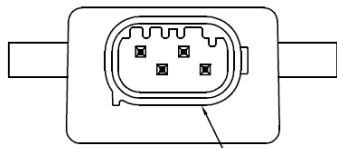
Operating Temperature	-40 ~ 85°C
Operating Humidity	0 ~ 95% RH
Storage Temperature	-40 ~ 120°C
Connector	4 pins Tyco Electronics AMP-1-0967640-1 coding A
External dimensions	58.4mm x 47.23mm x 19.5mm
Weight	< 50g
Power supply operation range	9 ~ 18V
Current consumption	< 30mA, @12V
Output Signal	CAN 500kbps
Measuring Gas & Range	H2 : 0 ~ 4 vol.% in air
Accuracy	H2 < 2% : ±0.1 vol.%(±1,000ppm) H2 > 2% : ±10%(of RV)
Response Time	< 1 sec
Warm-up Time	< 400ms
Lifetime	More than 10 years

CAN Frame Description

The Default ID is 0x256 and CAN frame layout is as shown below:

	7	6	5	4	3	2	1	0
0	Temperature_u8 msb							lsb
1	Humidity_u8 msb							lsb
2	atm_u8 msb							
3	msb							
4	Hydrogen_u16							lsb
5								
6								
7								

Dimension



Connector Type
TE AMP-1-0967640-1 Coding A

