Hydrogen Process Sensor

HPS-100

Fast and highly selective

The AppliedSensor HPS-100 Hydrogen Process Sensor is an accurate, fast-responding sensor designed for installation in harsh environments such as fuel cells, for example. The sensor will measure hydrogen in the range of 0-100% and will function up to 3 bar(a).

Low power and flexible packaging

The HPS-100 Hydrogen Process Sensor features reduced power consumption, provides increased packaging flexibility, and includes a CAN interface with a standard MQS four-pin connector. Self-testing at start up and advanced error handling ensure reliable operation. In addition, a short-start up time enables an intermittant mode of operation that minimizes current drain.

Tough and resistant

The HPS-100 Hydrogen Process Sensor will provide hydrogen detection and measurement for applications where conditions are harsh. With an IP6K9 rating and designed towards Atex Zone 2, this sensor can be installed almost anywhere.

Key Benefits

- 0-100% H_2
- Designed for humid environment
- Low cross sensitivity
- Fast response time
- Low power consumption
- Long-term stability and reliability
- Long lifetime

Applications

- Hydrogen gas measurement in fuel cell systems and other in-process applications

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HPS-100 Specifications

Target gas	Hydrogen
Concentration range	0-100% H_2 in nitrogen
Accuracy	+/- 2% typical
Resolution	0.5%
Speed of response (t90)	< 5 seconds
Speed of recovery	< 5 seconds
Cross-sensitivity	No detection towards HC, H_2S, N_2, CO, CO_2, NOx
	Humidity influence < 1% typical
Start-up time	5 seconds
Self test/Error handling	Developed in accordance to IEC 61508 (SIL2)
Explosion proof	Designed for Atex 100a, Zone 2
Expected lifetime	5 years or 3000 operating hours

Electrical

Supply voltage	8.5V – 16V
Supply current	70mA typical
Interface	CAN 2.0 ISO 11898
Connector	MQS 4-pin
ESD/Reverse polarity	Yes

Environmental

Operation temperature range	-40 -> +90° C
Storage temperature range	-50 -> +95° C
Humidity	5-100% R.H including condensation
Pressure	0.3-3 bar(a)
EMC	Automotive
Shock	Automotive
Vibration	Automotive

Mechanical

Dimensions	L = 93.5 mm, Ø = 30 mm
Weight	77g
Material	Stainless steel and PBT +30% GF
Gas filter membrane	Pall SUPOR 450R, 0.45 µm
IP code	IP6K7 and IP6K9K
Process connector	M14x1.5 (ISO-6149-3)

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