

H₂ – Medium Pressure Sensor MPS

803285 • 30 bar • SENT • standard accuracy



Fields of Application

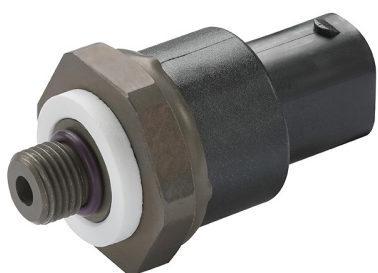
Hydrogen pressure regulators • stationary hydrogen storage • FCEV and HICE vehicles

Product Description

Our medium pressure sensor MPS is specially developed for use in hydrogen (H₂) applications, such as fuel cells and pressure regulators.

The sensor, with its variants for the different pressure ranges up to 300 bar, is designed for measuring pressure in stationary and mobile applications.

Materials that come into contact with fluids have been selected in accordance with the requirements for use with hydrogen and withstand the high stresses of use in hydrogen environments, even over long service lives. Although not required by law, the sensors are EC79 and HGV 3.1 tested.



Features

Monolithic measuring element without welds

Proven track record of reliability in the field

Very good hydrogen compatibility

- Use of fluid-compatible materials
- Tested according to standards EC79 and HGV 3.1

Technical Specification

Measurement range	
Nominal pressure	0–30 bar
Pressure type	relative
Max. allowed pressure	41 bar
Min. burst pressure	90 bar

Operating temperature range	
Media temperature	–45–85 °C
Media temperature extended	85–125 °C ¹
Ambient temperature	–40–125 °C
Compensated temperature	–40–125 °C

Output signal	
Type of output signal	SENT (SAE J2716 Rev. 3 or higher)
Accuracy (–10–50 °C)	+/- 1.0 % FSS ^{2,3}
Accuracy (–45–10 °C/50–85 °C)	+/- 1.5 % FSS ^{2,3}
Accuracy (85–125 °C)	+/- 2.0 % FSS ^{2,3}
Long-term stability	max. 0.05 % FSS ³ /a ⁴
Response time (t90)	< 5 ms

Electrical characteristics	
Supply voltage	4.75–5.25 V
Supply current	max. 10 mA
Electrical isolation resistance	10 MOhm @ 500 VDC ⁵

Electrical characteristics

Max. allowed over voltage	18 VDC
Reverse voltage protection	Yes
Short circuit protection	Yes
Power-on time	< 10 ms

Interfaces

Electrical connections	MQS-Connector, 3-pole, Code B Contacts silver coated
Process connections	M10x1

Mechanical characteristics

Material in media contact	Stainless steel 1.4435 EPDM (peroxide cross-linked)
Housing material	Stainless steel 1.4435
Vibration (EN 60068-2-64)	3 g rms @ 5–2000 Hz
Mechanical shock (EN 60068-2-27)	50 g (11 ms)
Protection class (EN 60529)	IP6K6K / IP6K7 / IP6K9K ⁶
Weight	60 g

Certifications

EC79-2009	tested acc. EC79-2009
HGV 3.1-2015	tested acc. HGV3.1-2015
RoHS / Reach	yes
Functional safety	QM

Accompanying documents

Technical specification No.	E_1100352 ⁷
Handling specification No.	E_1100345 ⁷

¹⁾ limited to max. 5 % of life time

²⁾ total error including non-linearity, hysteresis, repeatability, zero point and final value deviation (according to IEC 61298-2) excluding long-term stability; valid at stationary temperature conditions

³⁾ FSS = Full Scale Span (difference between output signal at the minimum and maximum specified pressure)

⁴⁾ life time tested with 1.000 h @ 125 °C

⁵⁾ test conditions: 60 s, R > 10 MΩ

⁶⁾ tightness only ensured with sealed mating connector

⁷⁾ in the latest version

⁸⁾ unspecified tolerances according to ISO 14405- ©, ISO 2767-2:1989mK, Dim. < 0,5 = ± 0,1

Dimensions⁸

