Humans got Senses
Systems got i2s

H_2-Pressure Sensors LPS, MPS, HPS

For hydrogen systems and tanks

DESCRIPTION

The pressure sensors LPS, MPS and HPS are specially designed for the use in hydrogen applications (H_2), such as fuel cells, filling stations and high pressure tanks.
This product family comprises three versions that measure pressures up to 6 bar (LPS) and 30 bar (MPS) as well as high pressures up to 900 bar (HPS). Hence, these sensors perfectly fulfill all measuring tasks in stationary and mobile hydrogen systems and tanks.
All wetted materials are selected to comply with the high standards set for the use in hydrogen applications so that the sensors withstand the harsh environmental conditions of fuel cells and hydrogen tank systems and provide reliable, precise measurements over their entire life time. Therefore, the H_2-pressure sensors are certified according to EC79 or HGV 3.1.
For an optimal integration in systems the LPS, MPS and HPS is available with different analog and digital (SENT/LIN) output signals.

FIELDS OF APPLICATION

- Systems for the production, usage and storage of hydrogen (H_2)
- For industrial and automobile applications
- Fuel cells
- High pressure tanks, storage and filling stations, hydrogen stations
- Measurement and testing technology

© iStockphoto.com - audioundwerbung

KEY FEATURES	BENEFITS
Hydrogen pressure measurement up to 900 bar	· Robust for pressure ranges up to 900 bar · Mono-part sensing element without welded parts
High level of hydrogen compatibility	· Use of media-tested materials · Burst proof and high durability · Freezing robust design · Certified according to EC79 and HGV 3.1
Numerous design versions available	· Analog output voltage and SENT and LIN output · Different mechanical connectors available (metric and UNF) · High pressure sensor with cone seal

Humans got Senses
Systems got i2s

Technical specification

H_2-Pressure Sensors LPS, MPS, HPS

Measurement range	
Nominal pressure	0…6 bar, absolute [1] (LPS) 0…30 bar, relative [1] (MPS) 0…900 bar, relative [1] (HPS)
Overpressure	2x nominal pressure (LPS, MPS), 1,050 bar (HPS)
Bursting pressure	3x nominal pressure (LPS, MPS), 1,750 bar (HPS)

Electrical characteristics	
Supply voltage	5 ± 0.5 V (analog, SENT) 9…18 V (LIN)
Supply current	typ. 10 mA
Output signal	0.5…4.5 V, ratiometric SENT LIN 2.1
Overvoltage protection [2]	± 30 V
Reverse polarity protection [2]	± 30 V

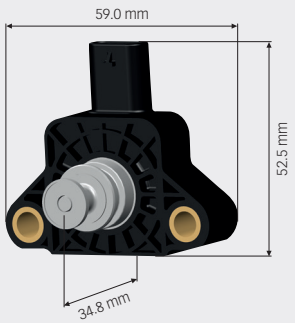
Mechanical characteristics	
Measurement element	Stainless steel (MPS, HPS) Silicon with stainless steel membrane and oil filled (LPS)
Case material	Stainless steel
Pressure connection [3]	Flange w. o-ring sealing (LPS) HEX27, M10x1, 7/16-20UNF (MPS) HEX27, M14x1, 7/16-20UNF, 3/8-24UNF (HPS)
Electrical connection	MQS plug, MLK plug [3]
Installation position	Arbitrary [4]
Weight	Approx. 50 g (LPS) Approx. 58 g (MPS, HPS)

Accuracy	
Total error [5] (Standard version)	± 1% FS (0…85 °C) ± 2% FS (-40…125 °C)
Total error [5] (High-precision version)	± 0.5% FS

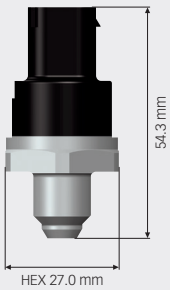
Environmental conditions	
Operating temperature range	-40…85 °C (125 °C)
Media temperature range	-50…85 °C (125 °C)
Media compatibility	Hydrogen, air, coolant (DI-water, ethylene glycol)
ESD (DIN EN 61000-4-2) [2]	± 8 kV to contacts ± 15 kV to case
EMV (ISO 11452) [2]	250 V/m 200 mA (BCI)

Dimension

LPS



MPS, HPS



1) Other pressure ranges available on request
2) Depending on the output signal and application
3) Other pressure connections and electrical connections available on request
4) With moisture/condensate in the system – please note installation recommendation
5) Covers repeatability, hysteresis, non-linearity (TBL), calibration and temperature effects; depending on the pressure and temperature range

Version Sept. 2020

Intelligente Sensorsysteme Dresden GmbH | Zur Wetterwarte 50 | 01109 Dresden / Germany
Phone +49 (0) 351 / 88 596 - 0 | Fax +49 (0) 351 / 88 596 - 36 | info@i2s-sensors.de | www.i2s-sensors.de