

Temperature Sensor CTS

803274 • 100 bar • SENT • high accuracy



Fields of Application

High-pressure hydrogen tanks for mobility • fueling stations • stationary hydrogen storage • FCEV and HICE vehicles



Product Description

Our CTS temperature sensor is specially designed for the use in hydrogen (H₂) applications, such as filling stations and high pressure tanks, as well as measuring and testing technology.

Due to the compact design and the use of media compatible materials, the CTS achieves excellent results in applications where space is critical, as well as under harsh environmental conditions. The sensor boasts fast response times and a high degree of accuracy. The sensors are available in a resistive design with a PT1000 element.

Features

Fast response times

High accuracy

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 temperature	–60–120 °C
Max. allowed pressure	1050 bar
Min. burst pressure	1750 bar

Operating temperature range	
Media temperature	–60–120 °C
Media temperature extended	–65–120 °C ¹
Ambient temperature	–50–120 °C
Compensated temperature	–65–120 °C

Output signal	
Type of output signal	Pt1000, DIN EN 60751, class f0.15
Accuracy (–65––40 °C)	+/- 1.2 K
Accuracy (–40–100 °C)	+/- 1.0 K
Accuracy (100–120 °C)	+/- 1.2 K
Long-term stability	max. 0.1 K /a ²
Response time (t90)	5 sec ³

Electrical characteristics	
Electrical isolation resistance	10 MOhm @ 500 VDC ⁴

Interfaces	
Electrical connections	MQS-Connector, 3-pole, Code A Contacts silver coated
Process connections	M14×1 with Cone sealing (Metal / Metal)

Mechanical characteristics	
Material in media contact	Stainless steel 1.4435
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 ⁵
Weight	50 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_1100357 ⁶
Handling specification No.	E_1100358 ⁶

¹⁾ limited to max. 5 % of life time

²⁾ life time tested with 1.000 h @ 125 °C

³⁾ Measured with 50 % Water / 50 % Glycol, volume flow = 76 l/min

⁴⁾ test conditions: 60 s, R > 10 MΩ

⁵⁾ tightness only ensured with sealed mating connector

⁶⁾ in the latest version

⁷⁾ Cone dimensions for new parts for information only

Dimensions⁷

