

VST temperature sensor

For alternative drive and storage systems

DESCRIPTION

The VST temperature sensor is used in applications that require a high degree of flexibility and special adjustments. The compact design and use of media-specific materials makes the VST ideal for use in applications with critical installation space requirements and under harsh ambient conditions. The specially developed measurement element not only guarantees fast response times, but also highly accurate results. The sensors are available in a resistive configuration with an NTC element or PT100/ PT1000 element. As a transmitter version with a linearised, analogue output signal, the VST also offers electrical protective and diagnostic functions, which are typical for the automotive industry.

For the use in hydrogen applications, esp. for high-pressure tank systems with pressures up to 900 bar, a pressure-tight and media resistant version is available.



FIELDS OF APPLICATION

- Tank and storage systems
- H₂ application and special media
- Cooling water systems
- Fuel cells



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KEY FEATURES

Specially developed measurement element and evaluation electronics

Use of media-tested materials

Compact design

BENEFITS

- Fast response times
- High degree of accuracy
- Transmitter version with voltage output available

- Excellent media compatibility
- Suitable for high ambient temperatures
- EC79 certified version available

- Suitable for high media pressures
- Ideal for integration in applications with critical installation space requirements

Technical specification

VST temperature sensor



Measurement range

Measurement range	-55 ... 180 °C
Measuring element	NTC PT100 / PT1000

Electrical characteristics

Supply voltage ¹⁾	5 V
Output signal	NTC standard resistor signal ²⁾ PT100 / PT1000 0.5 ... 4.5 V, ratiometric
Overvoltage protection ¹⁾	± 30 V
Reverse polarity protection ¹⁾	for all pins

Mechanical characteristics

Material connector	PPS
Wetted parts	1.4404 stainless steel
Mechanical connection	HEX 19, M10x1 male thread ³⁾
Electrical connection	MQS plug ⁴⁾
Installation position	Arbitrary
Weight	Approx. 20 g

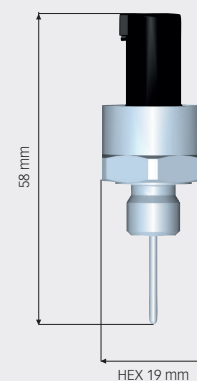
Accuracy

Total error	< 0.5 K (25 °C)
Response time (t ₉₀)	≥ 1.5 s (in liquid medium)

Environmental conditions

Media temperature range	-55 ... 180 °C ⁵⁾
Ambient temperature range	-40 ... 170 °C ⁵⁾
Media pressure range	0 ... 30 bar 0 ... 900 bar ⁶⁾
Media compatibility	Various oils, DI-H ₂ O, H ₂
ESD Handling (ISO 10605-5-2)	± 3 kV to contacts ± 8 kV to case

Dimension



- 1) Valid for the transmitter version with voltage output
2) NTC standard means RN at 25 °C in a range from 2 ... 100 kΩ; others available on request
3) Other threads available on request
4) Other electrical connections available on request
5) Only valid for resistance output
6) High pressure version