Hydrogen applications with electrical pressure measurement

Description

Due to hydrogen diffusion into the sensor structures, signal drift can occur over time. The time until the occurrence of a relevant signal drift and the size of the signal drift depend mainly on factors such as the temperature of the hydrogen, the hydrogen content in the medium, and the diaphragm thickness of the pressure sensor used. The diaphragm thickness is significant for the nominal pressure. It is recommended that users test the selected product version in their specific application environment for suitability.

Scope

This technical information is a supplement to the following data sheets with the corresponding restrictions with respect to the measuring range:

Data sheet	Model	Wetted material	Measuring ranges
PE 81.58	IS-3 [1) 2)]	Austenitic steels, 2.4711	0 ... 25 to 0 ... 1,000 bar [0 ... 400 to 0 ... 15,000 psi]
PE 81.61	S-20 [2)]	Austenitic steels, 2.4711	
PE 86.05	UPT-20	Austenitic steels, 2.4711	0 ... 60 to 0 ... 1,000 bar [0 ... 700 to 0 ... 15,000 psi]
PE 86.06	IPT-20	Austenitic steels, 2.4711	
PE 81.27	E-10	Austenitic steels, 2.4711	0 ... 40 to 0 ... 1,000 bar [0 ... 500 to 0 ... 15,000 psi]

1) Only applies to connections that are not flush.
2) During configuration, select the suitability for hydrogen.

Other measuring ranges on request.

Wetted parts

For wetted parts, only those materials are used which are suitable for permanent hydrogen pressure measurement.

Long-term drift (per IEC 61298-2)

Deviating from the specifications in the respective data sheet, a higher long-term drift can occur.
Typical: ≤ 1 % of span/year
Maximum: ≤ 3 % of span/year

Valid at a temperature of up to 30 °C [86 °F].
For higher temperatures, the sensor must be tested by the customer for suitability for the application.

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