High pressure sensor with flush media connection (DS300MPa)

For high-pressure applications above 70 MPa, thin-film technology on steel is predominantly used. Sensors with a flush media connection can only be realized with great effort using this technology. For this reason, a technology was developed for a sensor with a flush media connection with strict separation from the electrical side.

As part of the “DS300MPa” funding project, Si strain gages insensitive to transverse strain were joined to the side of the metallic pressure diaphragm facing away from the media using glass frit as demonstrators at the CiS Research Institute.

CHARACTERISTICS

The technology platform developed offers the following potential :

- Development of customized pressure sensor elements
- Use of piezoresistive Si chips (high K-factor, approx. 80)
- Various metallic materials can be used as forming bodies, including steel
- Realization of a small flush front surface < ∅ 5 mm, facing the medium
- Temperature range up to 200 °C
- Pressure range > 700 bar

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