

## VSP pressure sensor

For oil pressure applications

### DESCRIPTION

One of our smallest pressure sensors, the VSP has a robust and submersible design which makes it a reliable partner for any oil pressure application in motor and commercial vehicles. The VSP is able to measure absolute or relative pressure in a nominal pressure range of up to 600 bar. The specially developed evaluation electronics make it possible to take very precise and stable measurements at temperatures of up to 150 °C, even under tough conditions. In addition, the VSP also complies with the high ESD and EMC standards applicable in the automobile industry. Our assembly machines have a wide range of flexible settings enabling a customised production of the sensor and an optimal adaption to the respective application.



### FIELDS OF APPLICATION

Oil pressure applications in motor and commercial vehicles  
 · Braking systems  
 · Powertrain  
 Measurement and testing technology



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### KEY FEATURES

Robust, minimised design

Specially developed measurement element and evaluation electronics

Numerous electrical connections and output signals available

### BENEFITS

- Submersible, oil-proof version available
- Compatible with standard oils used in the automotive industry
- Suitable for applications with limited installation space
- Optionally with lightweight aluminium housing

- High-precision version available
- For use at temperatures up to 150 °C
- Reliable, stable measurements over the entire life cycle
- Automotive-tested EMC/ESD resistance

- Simple and flexible integration, also in existing systems

## Technical specification

VSP pressure sensor



### Pressure ranges

Nominal pressure	0.2 ... 50 bar, absolute 0.2 ... 600 bar, relative <sup>1)</sup>
Pressure reference type	Relative and absolute pressure
Overpressure	2x nominal pressure
Bursting pressure	3x nominal pressure

### Electrical characteristics

Supply voltage	9 ... 30 V 12 ... 30 V 5 ± 0.5 V
Supply current	typ. 10 mA
Output signal	4 ... 20 mA, 2 wire system 0 ... 5 V, 1 ... 6 V, 0 ... 10 V 0.5 ... 4.5 V, ratiometric
Overvoltage protection <sup>2)</sup>	± 30 V
Reverse polarity protection <sup>2)</sup>	± 30 V

### Mechanical characteristics

Measurement element	Stainless steel Silicon sensing element (also with stainless steel membrane and oil filled)
Case material	Stainless steel, aluminium
Pressure connection	HEX 19, M10x1, G1/4" male thread <sup>3)</sup>
Electrical connection	MQS plug, Packard plug, M12x1 plug <sup>3)</sup>
Installation position	Arbitrary
Weight	Approx. 30 g (stainless steel) Approx. 15 g (aluminium)

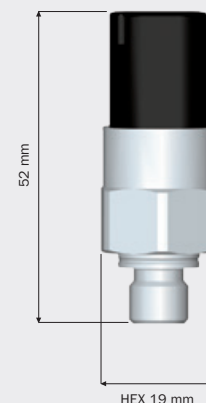
### Accuracy

Total error <sup>4)</sup> (Standard version)	± 1% FS (0 ... 90 °C) ± 2% FS (-40 ... 125 °C)
Total error <sup>4)</sup> (High-precision version)	± 0.2% FS

### Environmental conditions

Operating temperature range	-40 ... 125 °C (150 °C)
Media temperature range	-40 ... 125 °C (150 °C)
Media compatibility	Engine and gear oils, major- ity of liquid and gas media
ESD (DIN EN 61000-4-2) <sup>2)</sup>	± 8 kV to contacts ± 15 kV to case
EMC (ISO 11452) <sup>2)</sup>	250 V/m 200 mA (BCI)

### Dimension



1) Initial value of -1 bar possible for relative pressure

2) Depending on the output signal and application

3) Other pressure connections and electrical connections available on request

4) Covers repeatability, hysteresis, non-linearity (TBL), calibration and temperature effects; depending on the pressure and temperature range