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MDPT differential pressure sensor

For exhaust aftertreatment

DESCRIPTION

The mathematical differential pressure sensor (MDPT) was specially developed for measuring differential pressure in diesel particulate filters (DPF). The MDPT consists of two robust independent pressure sensors, which measure pressure upstream and downstream of the filter. The pressure difference is determined by means of a patented mathematical method with the help of a micro-controller. This setup makes it possible to output the system pressure in addition. With its innovative concept, the MDPT also supplies accurate and stable measurement data over the entire lifecycle, even under adverse operating conditions. The design with properly configured pressure connections guarantees installation that is resistant to freezing. Developed for the utility vehicle industry, the MDPT of course also meets all industry requirements with respect to EMC and ESD.

FIELDS OF APPLICATION	
Exhaust aftertreatment · Monitoring of diesel particulate filters · Enhanced emissions monitoring (OBD) · Protection of the motor against overpressure	

KEY FEATURES	BENEFITS
Measurement via two independent pressure sensor modules	· High degree of accuracy due to mathematically calculated and corrected output values · Measurement and output of the differential and system pressure possible
Use of materials resistant to exhaust emissions	· Excellent media compatibility · Resistant to corrosion and hydrolysis
Application-specific evaluation electronics	· Automobile-tested EMC / ESD durability · Enhanced diagnostic and protective functions

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Technical specification

MDPT differential pressure sensor

Pressure ranges	
Differential pressure	200 … 800 mbar [1]
System pressure	max. 10 x differential pressure
Overpressure	1.5 x system pressure
Bursting pressure	2.5 x system pressure

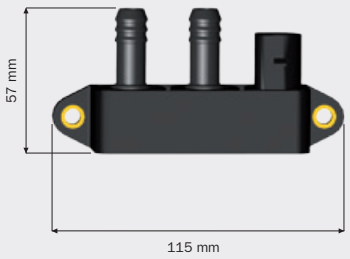
Electrical characteristics	
Supply voltage	5 V
Supply current	max. 25 mA
Output signal [2]	0.5 … 4.5 V, ratiometric PWM
Overvoltage protection	± 16 V
Reverse polarity protection	± 16 V
Short-circuit protection	± 16 V

Mechanical characteristics	
Measurement element	Selection by application and measuring range (ceramic – Si – stainless steel cell)
Material case	PBT
Pressure connection [3]	Hose connection
Electrical connection [3]	DIN bayonet HDSCS plug
Weight	Approx. 150 g

Accuracy	
Total error [4]	± 0.2 % FS (25 … 80 °C)

Environmental conditions	
Operating temperature range	-40 … 125 °C
Media compatibility	Exhaust, compressed air, diesel fuel, motor oil
ESD (DIN EN 61000-4-2)	8 kV (severity level 4)
EMC (ISO 11452)	200 V/m (Stripline) 150 mA (BCI)

Dimension



1) Other pressure ranges available on request
2) Various digital and analogue output signals available on request
3) Other versions available
4) Covers repeatability, hysteresis, non-linearity (TBL), calibration and temperature effects

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