

China Auto MEMS Pressure Sensor Market Report, 2008-2009



Automobile is one of the primary applications for MEMS pressure sensors. A high-end passenger car needs to install over one hundred sensors of all kinds. Nearly 30 of them are the MEMS sensors and about five to six are the MEMS pressure sensors which consist mainly of the intake manifold pressure sensor (MAP Sensor), barometric pressure sensor (BAP Sensor), hydraulic tank sensor, TPMS pressure sensor, airbag pressure sensor and ESC/ESP pressure sensor. Currently, TPMS pressure sensor and ESC/ESP pressure sensor are rendered as the two applications of best outlook.

MEMS Sensor's Application to Auto Key Parts

MEMS Sensors	Auto Parts	Application
Pressure sensor	Engine assembly	To reflect the air-intake volume and control the fuel injection
Pressure sensor	Engine assembly	To measure the internal pressure of cylinder
Oxygen sensor	Engine assembly	To reflect the concentration of the engine's combustible gas
Crankshaft position sensor	Engine assembly	To reflect the engine crankshaft speed and angle and the top-dead-center piston position
Throttle position sensor	Engine assembly	To reflect the engine load
Speed sensor	Engine assembly	To reflect the auto speed and control the fuel injection
Water temperature sensor	Engine assembly	To measure and control the engine coolant temperature as well as the fuel injection
Acceleration sensor	Air bag	To test and control the airbag popping-up time
Pressure sensor	Air bag	To test and control the inflation pressure
Pressure sensor	Braking system	To control the oil pressure of the braking system
Pressure sensor	Suspension system	To test and control the suspension hydraulic pressure system
Pressure sensor	Tire	To test the tire pressure
Wheel speed sensor	ABS/TCS/ESP	Traction control
Tilt sensor	Chassis systems	To measure and control the vehicle seat angle
Gyro	Navigation equipment	To measure and control the angular velocity

Source: ResearchInChina

The auto MEMS sensor market scale amounted to over 400 million units in 2006 and will hit 800-900 million units from 2011 to 2012. The auto MEMS sensor's CAGR will stand around 7-8% in the next few years.

Apparently, the developed countries have more opportunities to develop the auto MEMS pressure sensor market since their advanced technologies and favorable policy support. Though the application of auto MEMS pressure sensor takes a rising proportion in China, the market still cannot see the fast development in a short term.

Most MEMS pressure sensors' policies will be expired in 2012, which means TPMS and ESC sensors will be the standard configuration in developed countries' auto markets after 2012. China-made automobiles exported to EU and the USA have to be provided with the above sensors, so do the automobiles imported from the European and American markets, which will beyond doubt greatly improve the application of the MEMS pressure sensor.



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