

According to several reports, the global pressure sensor market is projected to have significant growth, with many placing its compound annual growth rate from around 5% to even 10%. The high growth figures are attributed to the adoption of pressure sensors in different applications and fields.

MEMS (Micromechanical systems) technology helped show the potential of pressure sensors and drove its use in the automotive industry in the 1990s. The modern market has tapped into this resource to produce applications for other markets. [Pressure sensors from manufacturers like MicroSensor](#) are now widely used in oil & gas, medical applications, HVACs, the food and beverage industry, aerospace and defence applications, consumer appliances like smartphones, and general industrial processes.

According to the reports, the automotive industry will continue to be the biggest growth driver. As the industry adds more technology to cars, the use of pressure sensors is not just on safety but on comfort, entertainment, and convenience. Beyond traditional uses in the engine manifold, auto braking system, and front-facing airbags, the newest trends in the market see pressure sensors used elsewhere in the car.

For instance, they can now detect changes in the pressure in car tyres, and through monitoring any rapid changes in inflation, they can detect a puncture early. In the automotive sector, pressure sensors have spread far from the initial application for absolute pressure sensors inside the engine manifold. After helping to improve the fuel efficiency of petrol and diesel engines, sensors to detect changes in pressure moved into the tyres. There they watch out and warn of rapid changes in inflation that may point to a puncture.

Further, more car manufacturers will use pressure sensors to detect side impacts. These pressure sensors can detect when the space inside begins shrinking because of a broadside impact. The other field of growth in the automotive industry is self-autonomous and hybrid vehicles. These two forms of vehicles rely heavily on sensors to function and aid in information processing.

Hybrid vehicles, in particular, call for complex vapor pressure-measuring ecosystems. Focus will now be on designing IC pressure sensors that can measure and function in shallow pressures.

The Internet of Things (IoT) will further offer more growth opportunities, and with every environment and appliance going smart, pressure sensor makers will increase their market. The focus here is on smart homes, factories, buildings, and cities. Miniaturized consumer items like wearables are getting diversified, and pressure sensors of varying capabilities will be necessary to make the new devices work.

Another new trend is the growing demand for differential pressure sensors. The increase in the use of pressure sensors in medical applications significantly fuels this demand. The differential design makes it possible for pressure sensors to be used in ventilators and also in catheters to help detect fluid levels.

Mobile healthcare devices using pressure sensors are also set to increase, and their use goes mainstream and demand rises. Thanks to pressure sensors, hospitals can discharge patients earlier as they have tools that will provide comprehensive home-based care. Smart electronic healthcare devices make it possible for patients to self-track their condition's progression and alert their doctors in case of anything. Doctors can always rely on fluid measurements and respiratory data to gauge how well the patient is progressing.

Electronic pressure measurements will be used in systems that were previously quite basic as sensor technology continues to benefit from the miniaturization and cost reductions enabled by MEMS. One example is the smart inhaler, a gadget that can provide precisely measured doses of medication to manage chronic illnesses like asthma. Another trend will be the proliferation of optical sensors. These sensors use fibre Bragg gratings to detect the deflection in a glass fibre caused by any variations in its pressure. These sensors offer the advantage of suiting conditions where other sensors could deliver inaccurate readings because of electromagnetic interference or extreme temperature variations. The sensing fibre can also be placed at a distance away from the readout electronics. These advantages mean applications for harsh environments, like industrial processing or under road pavements for smart cities, will switch to these sensors.

Marketwise, North America remains the main market while Asia Pacific is the fastest growing market. There is also a trend to creating low-cost options, especially with the increasing use of drones and other consumer devices. These trends will continue to further expand the pressure sensor market size and shape the direction of the industry.