

Linear Displacement Sensors in a Car

Using displacement sensors to monitor the movement of the suspension allows electrical signals (indicating the position of the dampers) to feed back to the logging/telemetry system and then display a graphical representation of the car's performance around a track. Using the data, engineers can easily recognise areas where improvements can be made, and fine-tune the car by adjusting ride heights and stiffness, to suit a particular track and driver.

Movement of the suspension can be sensed by a linear displacement sensor such as a LVDT, attached alongside or in close proximity to the suspension damper. The sensor ideally needs to be protected from ingress of fluids and particles. The LVDTs will provide a longer, maintenance-free service life.

For closed-loop control of the paddle mechanism a linear displacement sensor such as a high integrity, short stroke LVDT, is attached to the clutch actuator to provide position feedback information to the engine management system.

The movement of the brake caliper piston is sensed by a very small LVDT embedded in the caliper body.

Other sensing applications that are helping to improve motorsport include gear position selection (LVDTs) and oil reservoir level (LVDTs).