

London trains saving energy by using electronic leveling valve to control the air suspension

RESULTS

- Energy savings of up to 50% of the air consumption
- Significant reduction of operating costs: Demand-based control saves up to €150 on compressed air per year and valve
- Reduced environmental burden
- Quicker boarding and exiting at every station



APPLICATION

Customized electronic leveling valve to control the air suspension

CUSTOMER

Siemens Mobility – Germany

The Mobility division offers modern, networked, and IT-based mobility solutions including the full range of vehicles for rail transport.

CHALLENGE

Due to more people using public transport in London, trains have to be quicker, more efficient and more reliable than ever. For this reason, the train transport operator Thameslink together with train manufacturer Siemens Mobility developed a new vehicle series named Desiro City. But complicated mechanical air suspension can cause long maintenance periods and waiting times at every train station. An electronic and customized solution was required.

SOLUTION

Emerson engineers integrated an electronic leveling valve to control the air suspension, especially customized for the needs of Desiro City. It consists of one proportional and two switching valves, as well as control electronics with sensors. Practically no compressed air is required during travel – except in the event of load changes. Thanks to the integrated pressure sensor, the assembly is capable to measure and monitor the transport load. It requests air pressure based on the demand in order to keep the distance between bogies at an optimal level.

Even in the event of valve power failure, the trains can continue their journeys. This results in a significant decrease in train power consumption and lowers operating costs. Overall, this modern electrification of the air suspension function enables quicker adjustment of train height to platform level ensuring faster boarding and exiting at every station.

“Emerson customized not only the solution, but also the assembly hardware and software to the requirements of the customer.”



The AVENTICS Electronic Leveling Valve was used to control the air suspension