

Industry: Plant Automation

Products Used: Frequency Inverters FR-F700

Outstanding Car Wash Performance

"The fewer water drops there are on a car after it is washed the better", says Peter Spies, CEO of BEST CARWASH Gebrüder Spies GmbH in the German town of Iserlohn. In the past really drop-free drying performance just wasn't possible, even with the latest dryer systems. In addition to this the dryer motors were switched on and off much too abruptly between cars, and if the gaps were short they just kept running at full blast, wasting electricity. The task was to find a way to optimise the performance and power consumption of the dryer fans despite strongly-fluctuating demand caused by seasonal factors and the weather. The solution was the installation of Mitsubishi Electric frequency inverters of the FR-F700 Series, which now control all four dryer blowers.



The frequency inverters successfully optimised the performance of the car wash system's four dryer fan motors for the demands of the drying process. "All frequency inverters of the FR-F700 series have Mitsubishi's OEC technology as a standard feature," explains Wolfgang Plum, electrical engineer with the company IWP in Iserlohn that configured and installed the system. "This very reliable technology guarantees maximum utilisation of drive system capacity, even with the American 60Hz motors installed at BEST CARWASH.

And it also achieves very significant energy savings." Power consumption can also be reduced still further – in the double-digit percentage range – by installing a mains power choke upstream from the inverter.

The drive frequency and thus the fan motor speed are regulated automatically and reduced when possible. As soon as the next car enters the blower section the frequency inverter registers the current fan motor rotation speed and accelerates it up to the required rpm rate. "For us this also has the positive side-effect that it increases the mechanical service life of the controlled motors," enthuses Peter Spies. "In turn, this means that we can wait much longer before having to schedule expensive downtime for servicing and repairs."

In the case of the FR-F700 the service life expectancy is over ten years. This is made possible by a number of innovative design features and newly-developed components. The entire project was completed in a single "long weekend."

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Our dryer fans are significantly more efficient with the FR-F700. In addition to this our electricity and maintenance costs have also gone down considerably.

Peter Spies,
CEO BEST CARWASH Iserlohn

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Application story provided by BEST CARWASH Iserlohn, Gebrüder Spies GmbH, March 2005