

ARTICLE

PCS100 AVC - Automotive giant breaks new ground with ABB technology



ABB has applied technical know-how in order to provide a turnkey solution for an automotive giant, located in Changchun City China. ABB's PCS100 Active Voltage Conditioners (AVCs) are protecting the welding robots and control systems used in the headquarters plant, for a new model series production line. This installation is the largest PCS100 AVC to date for the automotive industry.

The automotive industry in China has seen significant growth since 2008. It is currently the largest in the world, measured by automobile unit production, and exceeds that of the European Union, or that of the United States and Japan combined. Of the automobiles produced, 44.3 percent were local brands which included this leading car manufacturer, producing more than one million cars on an annual basis.

Obtaining the most effective solution

The new welding plant had experienced voltage sags since it first began operation in 2012. In order to produce a continuous production output without any interruptions, the company sought a power protection solution that was reliable, highly efficient, and complete with a small modular design to fit into their switch room. ABB provided two PCS100 AVCs; 750 kVA and 900 kVA to provide voltage protection for two of the four transformers in the plant. This ultimately protected the sensitive loads of the robots and control systems used to produce the new car series. This was essential to ensure complete protection, as the time frame associated to reboot the function of the facility was enough to cause downtime in production output.

Setting performance levels to a new high

Since installation, the PCS100 AVCs are providing many advantages. The small footprint in design makes the PCS100 AVCs able to fit into small confinements such as the switch room, whilst providing high reliability with the integrated bypass. This allows fail-safe protection for the facility's load. Another unique feature is no energy storage requirement (no batteries or capacitors) as it draws the additional current required to make up the correction voltage from the utility supply. This reduces CAPEX and OPEX, creating future benefits such as return on investment.



Proven results

Since the commissioning date in September 2013, the automotive giant has seen an exceptional change in performance of their production processes. Process shutdowns that occurred due to voltage sags, have been reduced by more than 90 percent. With this company being one of the largest automotive companies in China, the new plant needed a safe and secure solution, such as the power protection solution provided by ABB.

The number of registered cars, buses, vans, and trucks on the road in China reached 62 million in 2009, and is expected to exceed 200 million by 2020. Experts have forecasted that China's car market will grow tenfold between 2005 and 2030.



Making head waves in the automotive industry

Recently ABB delivered eight PCS100 AVCs (4 x 165 kVA and 4 x 250 kVA) to a major motor factory in Slovakia. ABB's power protection products have been successfully applied to the motor production lines, pressing and painting workshops for a range of automotive manufactures and have devoted time, know-how and resources in developing market leading low voltage solutions, specifically designed to improve quantity and quality of businesses.

To find out more about ABB's power protection solutions:

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