
ARTICLE

ABB's AVC provides a solution to ongoing sags and expensive costs in recovery



ABB has successfully provided a turn key solution for a petrochemical plant based in China. With more than 10 sags per year, with three-four causing shutdown, the customer saw this as a necessity to adopt ABB's PCS100 AVC to protect their production line.

Petrochemical manufacture is a serious production process. Unexpected shutdown can cause extreme financial loss, which includes raw material wastage and lengthy time recovery. The production recovery may take several hours, even days and with a factory with more than 10,000 employees and an annual sales volume of more than US \$10 billion, it was vital that these issues be addressed.

Outweighing the competition

The plant had suffered ongoing voltage sags and shutdowns since it was first established in 1995. Therefore, they were always looking for a good solution to combat production loss, financial and time issues. However nothing in the market could meet their expectations due to high cost and low performance.

When ABB's AVC technology was introduced, the customer showed interest and concluded that it would be the best solution to use due to ABB's AVC unique compact size, and a very low ongoing cost.

Another advantage that in choosing ABB's product was that it included maintenance, training, and came with spare parts should parts need replacing.

Solution chosen

After identifying these advantages, the petrochemical plant decided to purchase an AVC to protect one existing production line to begin with. The installed AVC protected the VSD drive of pelletizer and feeder for polypropylene processes. One month after installation, results proved that the AVC protected the load from one deep voltage sag, which saved the plant US \$30,000 as well as several hours of shutdown time. With ABB having an AVC in stock, the lead time was much shorter than normal and thus potentially preventing a shutdown for major voltage disturbance.

ABB's technology

ABB's PCS100 AVC technology is available in load capacities from 160 kVA-30 MVA. It has an operating efficiency exceeding 98%, and offers full correction and fast response to three phase sags down to 70%, and single phase sags down to 55% on the AC supply network. All PCS100 AVC models provide continuous regulation within +/- 10% of the nominal mains voltage and also remove voltage unbalance from the supply.

When choosing the solution, the customer highlighted a great importance in time issues and the reliability of their production line. Therefore they selected ABB's PCS100 AVC 30% 400 kVA due to its competitive cost and the innovative features it offered.

Key features and flexibility

- Full correction, three-phase sags down to 70% remaining voltage and single-phase sags down to 55% remaining voltage
- Partial correction, three-phase sags down to 30% remaining voltage
- Partial correction, single-phase sags down to 0% remaining voltage
- Continuous "ONLINE" regulation
- Correction for voltage vector phase angle errors created by faults in the supply