

REFERENCE CASE STUDY

The PCS100 UPS-I protects Samsung's mega-investment in China



Samsung's new \$3 billion liquid crystal display production facility in Suzhou is the biggest single investment ever made by a South Korean company in China.

01 Providing power protection throughout China

The state-of-the-art facility is safeguarded from potentially crippling power disruptions by an ABB power protection solution – one of many that ABB has supplied to semiconductor companies in Asia. Situated at Samsung's huge production complex at Suzhou Industrial Park in Jiangsu province, the new 7.5 generation fabrication line is capable of producing 100,000 glass substrates a month. Each substrate can be divided into eight 42-inch panels, six 46-inch panels, or three 55-inch panels, which is enough to produce between 300,000 and 800,000 LCD TVs a month. Production at the new plant is expected to start in the first half of 2013. Together with Samsung's existing LCD module production plant at its Suzhou complex, the new LCD line enables Samsung to create an integrated LCD production base for China – by far the world's largest market for LCD televisions. To ensure that production at its multi-billion dollar plant is not brought to a standstill by power failures, voltage sags and other electrical disruptions, Samsung selected ABB to provide a power protection solution.

The solution comprises eight ABB PCS100 UPS-I low voltage uninterruptible power supply (UPS) units, which have a combined protection capacity of 16.5 megavolt amperes (MVA) of electric power. The PCS100 UPS-I is a single conversion UPS with an ultra-capacitor energy storage system, coupled to a

back-up inverter system to allow the downstream load to remain operational through short power outages and very deep voltage sags.

Among the many differentiating features of the PCS100 UPS-I, the solution for semiconductor applications are:

- Short payback time, typically less than 12 months
- Large low voltage power capacity of 16.5 MVA (most other solutions require medium voltage systems)
- Ultra-fast transfer time of less than 2 milliseconds
- Exceptionally small footprint
- 50 percent smaller than competing solutions
- Long and more economical operating life
- Comprehensive customer support

Recently, Samsung also selected 22 PCS100 UPS-I units for its latest mega-investment in China – the \$7 billion NAND flash plant in Xi'an. The facility will have a monthly output of 100,000 nanometer chips and is expected to become fully operational towards the end of 2013. NAND chips are primarily used in memory cards, USB flash drives, solid-state drives, and similar products for data storage and transfer. To date, over 680 MW of PCS100 power protection has been supplied to the high tech semiconductor and flat panel LCD manufacturing facilities.