

## Article

## PCS100 RPC - ABB provides leading edge technology to protect a manufacture of electronic products in Malaysia

ABB have provided a manufacturer of electronics with a unique solution combining the first PCS100 UPS-I/PCS100 RPC (Reactive Power Conditioner) product to protect the irpolyimide film manufacturing line from voltage outages, sags and swells. This power protection package is a milestone for ABB in that the combination of the two PCS100 products enables sags and swells to be eliminated (via the UPS-I), whilst at the same time increasing the power factor of the load above 0.90 (via the RPC, which is a product derived from the PCS100 STATCOM development). In addition to dynamic power factor control, the PCS100 RPC also provides filtering of low order harmonics, further improving power quality. This value added concept was key, as protection of vital assets was essential to continuous output.

Polyimide materials are lightweight, flexible and resistant to heat and chemicals. They are typically used as a flexible printed circuit board, often called copper clad laminate. These properties are perfect for telecommunication devices such as cell phones, HDD wireless suspensions and optical pick-ups. ABB's customer uses their manufacturing line to supply polyimide film to the electronics world, and a power outage to this manufacturing process could result in huge recovery costs and production downtime.

ABB's solution was a 1050 kVA PCS100 UPS-I and a 323 kVAR PCS100 RPC. This turn-key solution meant that, if a power outage occurred, the PCS100 UPS-I would disconnect the load from the utility and supply the manufacturing line with full power for five minutes. Simultaneously, the PCS100 RPC would provide power factor control above 0.90. The company's expectations were that with a power outage, the UPS-I would supply power to the load of 1000 kVA. ABB's PCS100 UPS-I was able to go beyond that expectation and supply 1050 kVA to protect the load should a shutdown occur.

#### PCS100 UPS-I

After the manufacturing company had evaluated transition times, the PCS100 UPS-I passed their expectations. The PCS100 UPS-I also included a static switch, meaning that a faster transfer to stabilize the power flow would occur if an outage prevailed. After further evaluations were undertaken, the company found that no other competing products could provide this. The final deciding factor related to system efficiency, as the manufacturer was able to save a large amount on air-conditioning requirements, due to low heat loss from the PCS100 UPS-I. Along with the PCS100 UPS-I having an efficiency rate of 99 percent, it also has a small footprint.

#### PCS100 RPC

The PCS100 RPC technology is a hybrid solution that not only provides dynamic reactive power conditioning but also filtering of low order harmonics, all based on ABB's PCS100 inverter technology. Compared with other technologies, the PCS100



RPC has a number of benefits, including imbalance correction, fast dynamic power factor, and active filtering of harmonic currents. One of its salient characteristics is its modular construction, which makes the platform very reliable. If one of the power modules fails, the system will not trip, but will continue to operate at reduced capacity. Because the granularity is small, the manufacturer can get full redundancy at very small cost and this level of reliability at such low cost is unique in the industry.

With the features of the PCS100 UPS-I and RPC, plus the added benefit of ABB's global presence, the electronic products manufacturer can utilize this offering at any time.

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