

**INSTANT SAVINGS
RAPID ROI**



SSAPFC

Solid State Active Power Factor Corrector

Wall mount & Floor mount

Available in
**15, 30, 50, 75,
100 & 150 KVAR**



What is Samudra's SSAPFC?

- ◆ A Solid State Active Power Factor Corrector (SSAPFC) is a modern device used in electrical systems to manage reactive power.
- ◆ Reactive power is energy that doesn't do useful work but is necessary for operating equipment like motors and transformers.
- ◆ Too much reactive power can create problems like unstable voltage, higher energy losses, and poor power quality.

How does SSAPFC help?

- ◆ It dynamically adds or removes reactive power as needed to keep voltage levels steady.
- ◆ It helps maintain a good power factor (close to 1), making the system run efficiently.
- ◆ Compared to traditional systems, SSAPFC's work faster and are more effective, preventing issues like overheating and fire.

Purpose of SSAPFC

- ◆ Conventional power factor correction systems tend to operate slowly and are often ineffective.
- ◆ These systems can lead to issues such as overheating and, in extreme cases, may even result in fires.
- ◆ SSAPFC represent a modern alternative that provides faster and more efficient performance.

For enquiry, Please contact us at



info@samudraled.com



www.samudraled.com



Samudra House, Sr. No. 105/1/1, Opposite Wisdom Hospital, Radha Chowk, Baner, Pune - 411045, MH, India.

How does SSAPFC work?

◆ Reactive Power Detection

The SSAPFC continuously monitors the electrical system's parameters, such as voltage and current.

◆ Phase Angle Adjustment

If it detects that the load current is lagging (inductive load) or leading (capacitive load) compared to the voltage, it generates a compensating current.

◆ Voltage-Source Inverter (VSI)

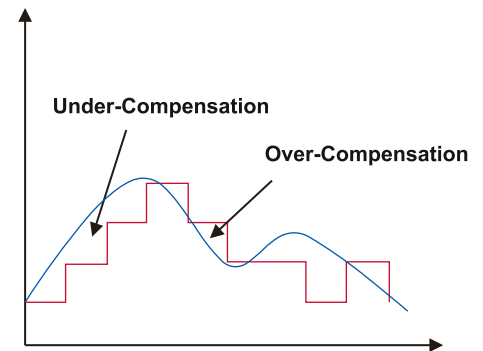
The core component of an SSAPFC is a Voltage-Source Inverter. This inverter converts DC power into AC power and injects it into the system to balance reactive power.

◆ Dynamic Compensation

By injecting or absorbing reactive power instantly, the SSAPFC stabilizes voltage levels, improves the power factor, and reduces losses in transmission lines.

Features of SSAPFC

- ◆ Excellent power factor correction performance
- ◆ Instantaneous real-time compensation
- ◆ Corrects lagging & leading
- ◆ Corrects load imbalance
- ◆ SSAPFC modules can be parallel connected
- ◆ Operates in all 3 phases
- ◆ Not affected by resonance & harmonics
- ◆ Can work with & enhance existing capacitor bank system
- ◆ Can operate at low voltages



Over-Compensation and Under-Compensation produced by conventional capacitor banks

Application

SSAPFC's are widely used in various industries and sectors where maintaining high-quality electricity supply is critical:

- ◆ Industrial plants with heavy machinery.
- ◆ Renewable energy facilities like solar & wind energy.
- ◆ Power grids for stabilizing transmission systems.
- ◆ Distribution networks for balancing loads.

In essence, an SSAPFC plays a vital role in ensuring efficient energy usage while maintaining stability and reliability in modern electrical systems.



SSAPFC Range

Wall mount SSAPFC



Capacity: 15 KVAR

Size: 500(W)x465(H)x180(D) mm



Capacity: 30 KVAR

Size: 350(W)x465(H)x100(D) mm



Capacity: 50 KVAR

Size: 500(W)x510(H)x190(D) mm



Capacity: 100 KVAR

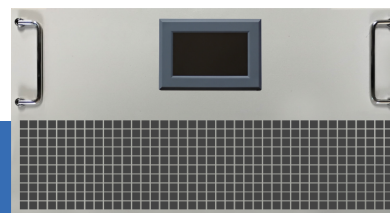
Size: 500(W)x550(H)x269(D) mm

Floor mount SSAPFC



Panel Size: 800(W)x2000(H)x1000(D) mm

SSAPFC Rack Mounted Cabinet



Capacity: 50 KVAR

Size: 500(W)x190(H)x550(D) mm

Capacity: 100 KVAR

Size: 500(W)x269(H)x575(D) mm

Capacity: 150 KVAR

Size: NA

Panel Features & Capacity

The Samudra's SSAPFC panel is designed with five integrated horizontal rack slots, allowing for flexible configuration. Various combinations of the specified capacity cabinets can be utilized to meet specific operational requirements. The maximum reactive power compensation capacity of the SSAPFC system is 500 kVar.

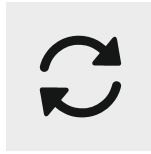
Benefits

A Solid State Active Power Factor Corrector (SSAPFC) is an advanced device that improves power quality by controlling reactive power. Here are its key benefits:



Voltage Stability

Maintains a steady voltage level, preventing fluctuations that can damage electrical equipment.



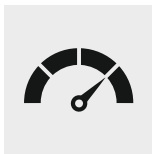
Power Factor Correction

Enhances power efficiency by reducing unwanted reactive power, leading to better utilization of electricity.



Saving Your Money

Lowers electricity costs by minimizing energy losses and improving system efficiency.



Better Equipment Performance

Protects electrical machines, transformers, and inverters from voltage instability, extending their lifespan.



Optimized Solar Power Utilization

Enhances the integration of solar energy by stabilizing voltage fluctuations caused by variable sunlight.



Low Maintenance Cost

The SSAPFC reduces heat on the electrical system, resulting in greater longevity and lower maintenance costs.

Technical Support


For new installations, our team can assist in designing the ideal power quality solution for your system. If you're looking to evaluate your power factor, our experts can conduct an on-site assessment using specialized equipment. We'll analyze the situation and provide a detailed report with tailored recommendations for improvement. **Feel free to call Samudra to discuss your requirements with our technical support team.**



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Radha Chowk, Baner, Pune - 411045, Maharashtra, India.

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