POWER FACTOR CORRECTION

FUSECO

- No Capacitor Banks
- Wall Mounting Solutions
- Load Balancing
- Dynamic Step-less Compensation

Sinexcel®

Static VAr Generators (SVG)

Key Features:

- **Excellent power factor correction performance**
  Can maintain a PF of 0.99 lagging or unity if required.
- **Compensates both inductive and capacitive loads**
  Corrects lagging and leading power factor.
- **Dynamic step-less compensation**
  Profiles the load and operates with a response speed of <15ms. No possibility of over-compensation or under-compensation, will only inject the kVAr that is needed in that moment.
- **Corrects load imbalance**
- **Not affected by resonance**
- **Wall-mount versions available**
  The 50kVAr units are available in a compact wall-mount version.
- **Can operate at low voltages**
- **Can be used with existing PFC systems**
- **Modular design**
  Available in 50kVAr & 100kVAr modules. Rack mountable in a Sinexcel cabinet or customer's solution. Easy to use, install, transport and maintain.
- **Ease of installation and commissioning ('Plug and Play')**
- **User-friendly interface and monitoring**
- **1 year warranty** (conditions apply)

Sinexcel Static VAr Generator (SVG)

Sinexcel SVG

The Sinexcel SVG represents the latest generation technology in the power factor correction field. It operates by detecting the load current on a real-time basis through an external CT (current transformer) and determining the reactive content of the load current. The data is analysed and the SVG's controller drives the internal IGBT's by using PWM signals to make the inverter produce the exact reverse reactive current of the corresponding load reactive content which is injected into the grid.

kVAr Capability vs Space

- Up to 50kVAr capability from a wall-mount solution
- Up to 100kVAr capability from a single rack-mount module
- Up to 400kVAr capability from a single standard cabinet solution
- Up to 500kVAr capability from a single 'drawer-type' cabinet solution

50kVAr Solutions

▲ 50kVAr Rack-Mounted SVG
500W x 510D x 190H (mm)
Weight: 35kg

▲ 50kVAr Wall-Mounted SVG
500W x 192D x 560H (mm)
Weight: 35kg

100kVAr Solutions

▲ 100kVAr Rack-Mounted SVG
500W x 520D x 270H (mm)
Weight: 48kg

Cabinet Solutions

▲ Standard Cabinet
- up to 400kVAr
capacity possible

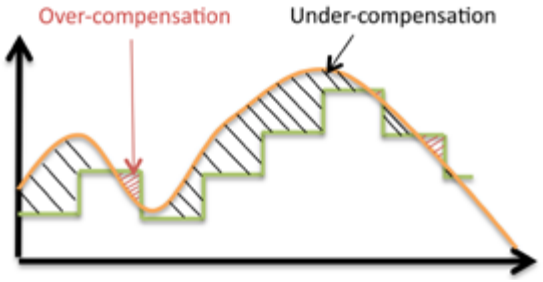
▲ Special Drawer Cabinet
- up to 500kVAr
capacity possible

FUSECO

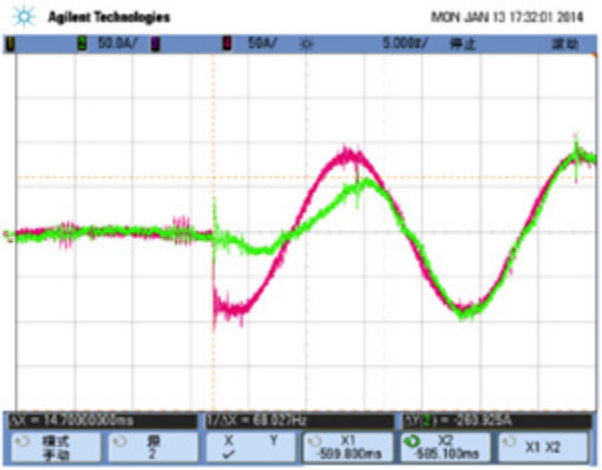
Advanced Performance

Dynamic Step-Less Compensation

- Profiles the load and operates with a response speed of <15ms
- Dynamic reaction time is less than 50µs
- No possibility of over-compensation or under-compensation
- Only injects the kVAr that is needed in that moment



Traditional capacitor type PFC systems take 20ms-40s to respond to a change in load. Their delay combined with the stepped response performance means that they are perpetually over or under compensating.

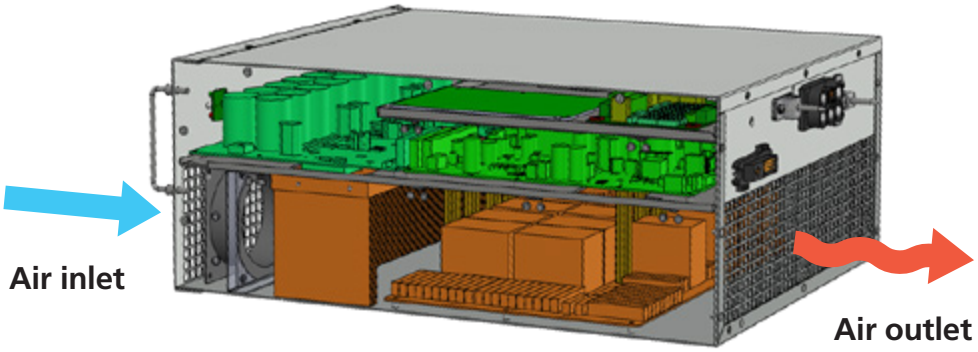


SVG Reaction Time <50µs, response time < 15ms

The Sinexcel recalculates the required load accurately and quickly. The IGBT technology switches with high speed, quickly matching the load requirement.

Designed for Efficiency & Minimal Maintenance

- Minimises dust ingress.
- Electronic components separated from heat producing components and housed in their own sealed compartment, resulting in greater protection from the effects of heat and dust ingress.
- Optimum heat dissipation.
- Heat sinks, IGBT's, inductors and other heat producing components housed in a separate compartment optimised for efficient ventilation and cooling.



Advanced Performance

Excellent Power Factor Correction Performance

- Can maintain a PF of 0.99 lagging or unity if required

Compensates both Inductive and Capacitive Loads

- Corrects lagging and leading power factor (-1 to +1)

Eliminating the Weakest Link – The Switched Capacitors

- The new method of PFC from Sinexcel takes away the most vulnerable and weakest link in a traditional PFC system – the switched capacitors. Various environmental conditions (eg. excessive temperature, over-voltage, harmonic distortion) may cause capacitors to rupture and ignite.
- The average life span of a switched capacitor is heavily dependent on the ambient temperature in which it is operated – requiring careful selection with respect to permissible operating temperature range. These temperature limits work well in colder climates but may not necessarily work well in Australia. The new generation technology in the SVG eliminates the operational limitations, safety concerns, space demands and life span issues of capacitor banks.

Operates in all 3 Phases

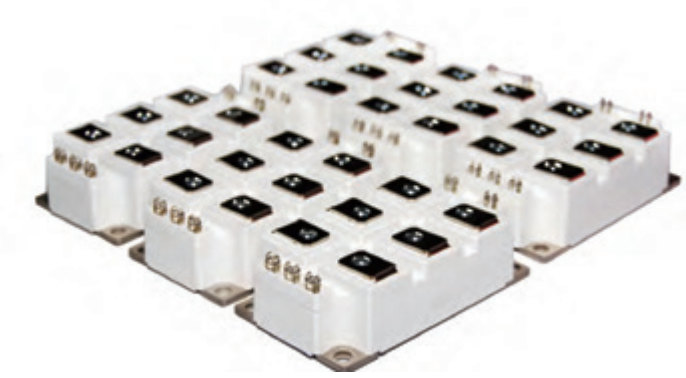
- A traditional switched capacitor type PFC system measures one phase and provides stepped kVAr compensation only to that phase, irrespective of what the other two phases need.
- The Sinexcel SVG measures and provides dynamic kVAr compensation throughout all three phases.

Greater Longevity

- With traditional capacitor systems, when smaller steps are needed for fine adjustment, the space required for either 6.25kVAr or 50kVAr steps is the same. The other disadvantage for having a small step for fine adjustment is that it gets over used (frequently switched). The PFC controller uses an algorithm that evenly distributes the work load amongst the available steps except when one or two of those steps are of a smaller capacity. This brings into play the actual useable lifetime of the components used, for example the life of the contactor!

Not Affected by Resonance

- The Sinexcel system is not susceptible to existing harmonics and therefore does not need a blocking reactor and is unaffected by resonance whereas for the traditional PFC system this is very much a problem.



Corrects Load Imbalance

Can Operate at Low Voltages