



Synchronous Condensers

Hyundai Ideal Electric Co. has built synchronous condensers for over fifty years. Our expertise, combined with high quality materials and manufacturing processes, results in a reliable, cost-effective condenser with high performance and low operating costs.

Synchronous condensers are fundamentally a synchronous motor that is not connected to any driven load. Once started and connected to the electrical system it operates at full leading power factor to put VAR's into the network to support the system voltage or maintain the system power factor at the desired level.

Benefits

Power Factor Correction

Synchronous condensers are used as an alternative or supplement to fixed capacitors. Condensers are not affected by harmonics.

Voltage Support

Synchronous condensers provide voltage support when starting large loads or transmission of power over long distances.

Lower Utility Charges

Synchronous condensers improve plant power factor to reduce penalties for low power factor and lower power bills.

Excitation System

Hyundai Ideal Electric Co. brushless exciter uses a high-frequency design to ensure minimum ripple in the rectified DC current supplied to the Condenser field and to provide faster response times. The AC current is rectified by hermetically sealed diodes, which can be fused and supplied in parallel for critical applications.



Synchronous Condenser installed in Japan

Accessories

Hyundai Ideal Electric Co. can provide a complete condenser package including:

- Full voltage or Reduced voltage starters
- Starting Pony motors with variable frequency drive
- Excitation equipment
- Protection equipment
- Condenser output breaker switchgear

Mechanical Features

Rotor Construction

Quality materials and manufacturing techniques optimize stability and allow Hyundai Ideal Electric Co. condensers to perform dependably under all conditions. Vibration

problems are minimized with a very rigid frame construction, and by pre-balancing the rotor.

Rotor Shafts are forged high-quality steel. HIEC 4-pole designs use integral pole laminations that are bolted together under pressure before being shrunk-fit and keyed to the shaft.

Bearings

Hyundai Ideal Electric Co. offers heavy duty sleeve bearings as standard. Our bearing design can accommodate thrust, if required, and can be flood oil lubricated or self-lubricated depending on the rating or application.

Enclosures

A variety of enclosures is available for every type of installation or classification including those that meet NEMA/IEC standards.

Electrical Features

Sealed Insulation System

HIEC offers full Class F insulation, epoxy VPI system, from our in-house VPI facility.

Testing

Hyundai Ideal Electric Co. condensers have been rigorously tested in our factory – and, more importantly, in the field – to ensure each condenser is mechanically and electrically sound. HIEC has responded to the demand for increased testing by adding a state-of-the-art test floor to our manufacturing facility. The test floor allows for full load testing up to 10 MVAR at voltages from 480 volts to 13.8 kV and at 60 Hz and 50 Hz.

Summary

There are significant annual savings that can be realized by installing power factor correction devices. There are some potential harmonic and voltage transient problems associated with capacitors. Rotating synchronous condensers are reliable and very cost effective. When capacitors are operating in a system with harmonics, their life expectancy can be in the 3-5 year range or less, while condensers have a life expectancy of 20-30 years or more. Condensers offer many advantages that other options cannot provide. Considering condensers for power factor correction and voltage support is recommended.

For More Information

For more information on synchronous condensers, or any other HIEC product, contact Hyundai Ideal Electric Co. headquarters or your local HIEC representative.



15 MVAR Synchronous Condenser



Synchronous Condenser switchgear line up

OUR MISSION

Our mission is to produce the highest quality product, satisfy customer requirements, and provide rewarding employment in a profitable growth environment, while supporting the community.



This eco-friendly product is printed using soy-based inks on paper which is acid-free, contains 50% recycled content including 25% post-consumer waste, is bleached without using chlorine and the wood pulp is harvested from sustainable forests.



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