



Low & Medium Speed Synchronous Generators

Hyundai Ideal Electric Co. has been a leading supplier of low and medium speed synchronous generators for diesel engine applications for more than eighty years. Our experience and conservative design philosophy, combined with top quality materials and workmanship, result in a rugged, reliable, high quality generator that is among the best available in the world today

HIEC's Low & Medium Speed Synchronous Generator Output Range

- o 1,000 to 14,000 kW
- o 380 to 13,800 Volts
- o 50 or 60 Hz
- o 500 to 1,200 RPM

Mechanical Features

Hyundai Ideal Electric Co. low and medium speed salient pole synchronous generators employ proven construction techniques that greatly enhance reliability and service life.

◀ Rotor Construction

The field pole laminations are high strength steel sheet, and are securely riveted under pressure. The field coils are tension wound directly onto the poles, using insulated rectangular copper wire.

The wound poles are attached to the spider by one of two methods, depending upon speed. Low speed generators utilize a fabricated steel spider with bolted-on poles. Medium speed machines employ a laminated spider and dovetail pole attachment.

Aluminum supports are used to secure the field coils under all conditions of operation and the rotor assembly is shrunk and keyed to the shaft. The completed rotor is dynamically balanced to HIEC standards, which are



Horizontal Brushless Synchronous Generator

more stringent than those of most U.S. and international standards.

◀ Bearings

Hyundai Ideal Electric Co. low and medium speed generators incorporate split sleeve journal bearings as our standard design, either end-bracket or pedestal mounted.

These bearings employ a heavy bronze shell with a centrifugally cast babbitt lining.

All bearings are designed for self-lubrication via oil rings, and conservative bearing load limits and peripheral speeds assure cool operation and long life.

◀ Enclosures

Open dripproof enclosure with top air discharge (suitable for most indoor applications) is the most commonly used enclosure for engine-generator set applications.

Filters can be furnished on self-ventilated generators as conditions dictate, and generators can also be arranged for external forced ventilation through ducting.

For severe environments, totally enclosed generators with air-to-water heat exchangers are available.

Electrical Features

Our custom engineered design philosophy allows us to meet any unique or specified machine performance requirement (optimizing generator efficiency, designing for special reactances, or minimizing waveform deviation and voltage harmonics).

Sealed Insulation System

HIEC's standard insulation system includes Class F vacuum-pressure impregnation with polyester or epoxy resins. Both systems pass immersion and spray tests per NEMA 1-20.49.

Corona protection is provided as standard for stators above 6000 Volts.

Excitation Systems

Brushless excitation is the most popular choice for low and medium speed synchronous generators. It combines lower cost with performance

suitable for nearly all applications, and eliminates the problems of brush wear and maintenance.

HIEC's brushless exciter design combines a high frequency, three-phase out with full wave rectification, which assures minimum ripple current and faster response. The rectifiers are mounted on a copper heat sink, and redundant fused rectifiers can be furnished for critical applications.

A permanent magnetic pilot exciter can be furnished as an integral part of the exciter, for use as a power supply to the voltage regulator. The use of a permanent magnetic pilot exciter in place of a power transformer allows black start capability and forcing current under short-circuit conditions.

Voltage Regulators

HIEC furnishes a state-of-the-art electronic voltage regulator as part of our package. Features such as VAR/ Power Factor control, excitation limiting and motor operated control are also available.

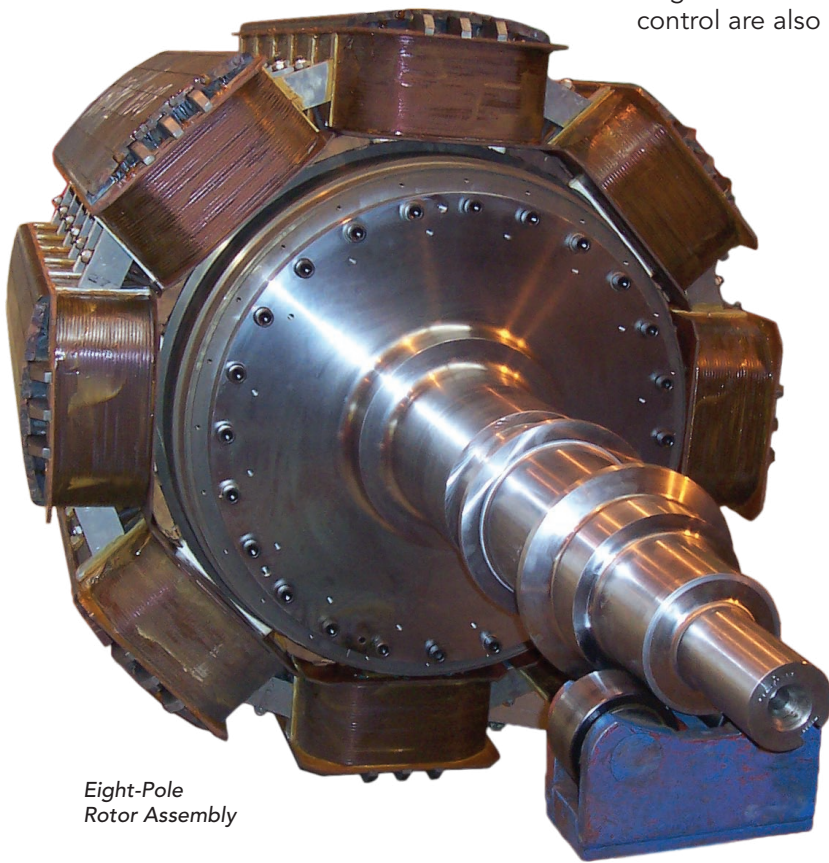
Industry Standards

HIEC manufactures generators to meet all current industry standards, including IEEE, ANSI, NEMA, API and IEC. Special certification is available through CSA, ABS, DNV, Lloyds and others upon specification.

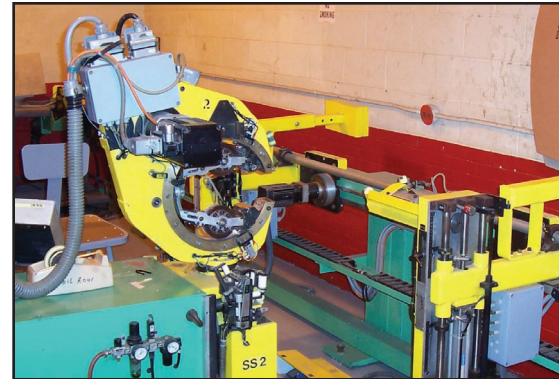
HIEC routinely designs motors for hazardous operation in Division 2 / Zone 2 environments with CENELEC / ATEX certification available.

For More Information

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



Eight-Pole
Rotor Assembly



Computer controlled tape machine for installing half-lap insulating tape on stator coils.

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.



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