



# Generator Switchgear & Controls

Hyundai Ideal Electric Co. has long been known as a responsible and solution-oriented manufacturer of quality motors and generators. We are unique in that we are the only U.S. manufacturer that is capable of producing both motor or generator and switchgear.

This allows for sole sourcing of a coordinated electrical package by utilizing our rotating machine expertise in the design of generator switchgear and controls, as well as motor starters. We custom design and build equipment for prime power, cogeneration, peak shaving, stand-by power and parallel operations with utilities.

Our controls are designed to interface with any type of prime mover, including gas and steam turbines, reciprocating engines and hydro turbines.

Coordination of the generator, switchgear and controls with the prime mover is a service HIEC engineers have successfully supplied to industry for years.

Our ability to identify possible problems and offer solutions early in the design has earned us a reputation as a team player with our customers.

## Custom Engineering

One of the main problems facing today's prime mover producers is coordination of the rotating, switchgear and control equipment, which may be split between several manufacturers. This can result in incomplete drawings, incorrect and misplaced parts, inadequate engineering experience with rotating equipment and inadequate coordination between the components.

Today, end users are looking for system responsibility from their equipment suppliers.

In response, engine and turbine vendors appreciate HIEC's total package approach – one manufacturer furnishing the generator, switchgear and control system. Our rotating equipment engineers work closely with our switchgear engineers to provide a coordinated system offering proper prime mover and generator protection.

Our controls are ergonomically designed, with operator interface maximized.

Hyundai Ideal Electric Co. works with consulting engineers, operating personnel and prime mover suppliers from project conception through commissioning of equipment to ensure coordination and reliability. This approach has proven successful in installations domestically and throughout the world.

## Switchgear

Generator switchgear is metal-clad design and is available in 4.16, 7.2 and 13.8 kV ratings. Interrupting ratings of 250, 350, 500, 750 and 1000 MVA are available.

Continuous current ratings of 1200, 2000 and 3000 amperes are standard. All switchgear is built to meet the applicable requirements of ANSI, IEEE and NEMA standards.

Switchgear lineups are engineered around the latest designs in OEM components available on the market today. HIEC can, and regularly does work with a wide variety of OEM-component manufacturers to produce designs best suited to our customers' needs. Custom in-house cubicle



Generator Protection & Excitation Panel

fabrication affords us the ability to be flexible in switchgear designs while still maintaining strict metal clad integrity, the basis for most generator switchgear applications.

Enclosures can be built for indoor, outdoor walk-in and outdoor non-walk-in. Switchgear lineups can be as simple as a single generator breaker or as complex as a series of breakers with instrumentation, protective relays, synchronizing equipment and controls.

## Instrument & Relaying Cubicles

When generator switchgear must be remotely mounted from the prime mover control panel, it is often desirable to have generator protective relays, instrumentation and synchronizing equipment located adjacent to the prime mover control panel, or in yet a third location.

Hyundai Ideal Electric Co. regularly engineers and manufactures these systems in panels or console mount configuration. Relays and instrumentation can be selected by the customer or HIEC can recommend reliable and cost-effective devices.

## Turbine & Engine Control Panels

Interfacing prime mover controls can be simplified with our line of turbine and engine control panels.

Hyundai Ideal Electric Co. offers control for steam, hydro and gas turbines, as well as engine starting panels and governor control panels.

Integration of prime mover controls, temperature and vibration monitoring and generator controls is an effective means of providing single point operation of the complete system.

HIEC can produce as complete a set of drawings as our customers require, from single line diagrams through detailed wiring and interconnection diagrams.

A thorough testing program is available to meet customers' requirements prior to shipment.

## Experience

Many electrical equipment manufacturers have come and gone over the years. Hyundai Ideal Electric Co. prides itself on being one of the most stable rotating and switchgear manufacturers in the industry. We have been manufacturing rotating equipment since 1903, and switchgear since 1924.

As a result, our customers can rely on our experience in applying the best-suited switchgear and protection for their projects, and can be sure that equipment will continue to be supported for years after it is installed.



Turbine/Generator Control Panel with Dual Excitation System

Over the years, Hyundai Ideal Electric Co. has been involved in hundreds of generator switchgear applications, so our engineers have experience suggesting solutions to customer problems.

Hyundai Ideal Electric Co. generator switchgear is used in power generating plants, cogeneration facilities and buildings requiring highly dependable emergency back up power. You will find this equipment operating in conjunction with steam, gas and hydro turbines, as well as gas and diesel engines. Markets served by HIEC include:

- o Electric Utilities
- o Independent Power Producers
- o Petro-Chemical
- o Municipal
- o Telecommunications
- o Mining and Metals
- o Pulp and Paper
- o Automotive

## Start-Up Service

Job site coordination between the prime mover and generator/switchgear manufacturers is simplified with Hyundai Ideal Electric Co.

Protective relaying, prime mover monitoring and generator interface are all available through HIEC Field Service Engineers.

This assures the end user of a system-responsible vendor who has reduced the commissioning time and has supplied a coordinated package of power producing equipment.

## For More Information

For more information, contact Hyundai Ideal Electric Co. headquarters or your local HIEC representative.



Medium Voltage Switchgear

## 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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