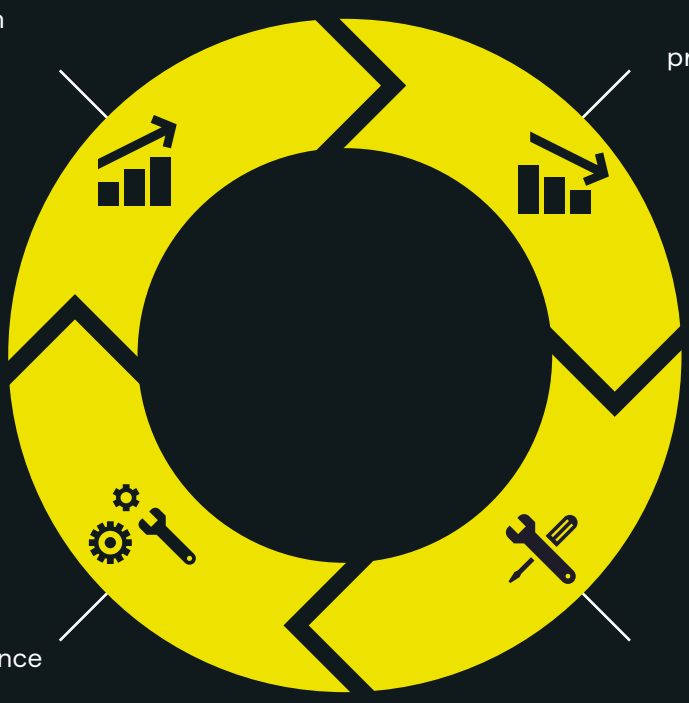
INNOMOTICS

Power Rectifier Innomotics PR160 Powering H2

Your investments.

When making an investment in green hydrogen solutions, it is important to consider factors such as:



Additionally, the longevity of the system should be considered to ensure that it can be relied on for up to 30 years, even in challenging environmental conditions and infra-structure. The ability of the system to perform under these conditions is a true test of its "best-in-class availability".

Requirements in green hydrogen solutions

High efficiency, availability, reliability in operation, and cost effectiveness

Fast diagnosis of system conditions, minimal planned downtimes, and premium service

Fast installation and commissioning

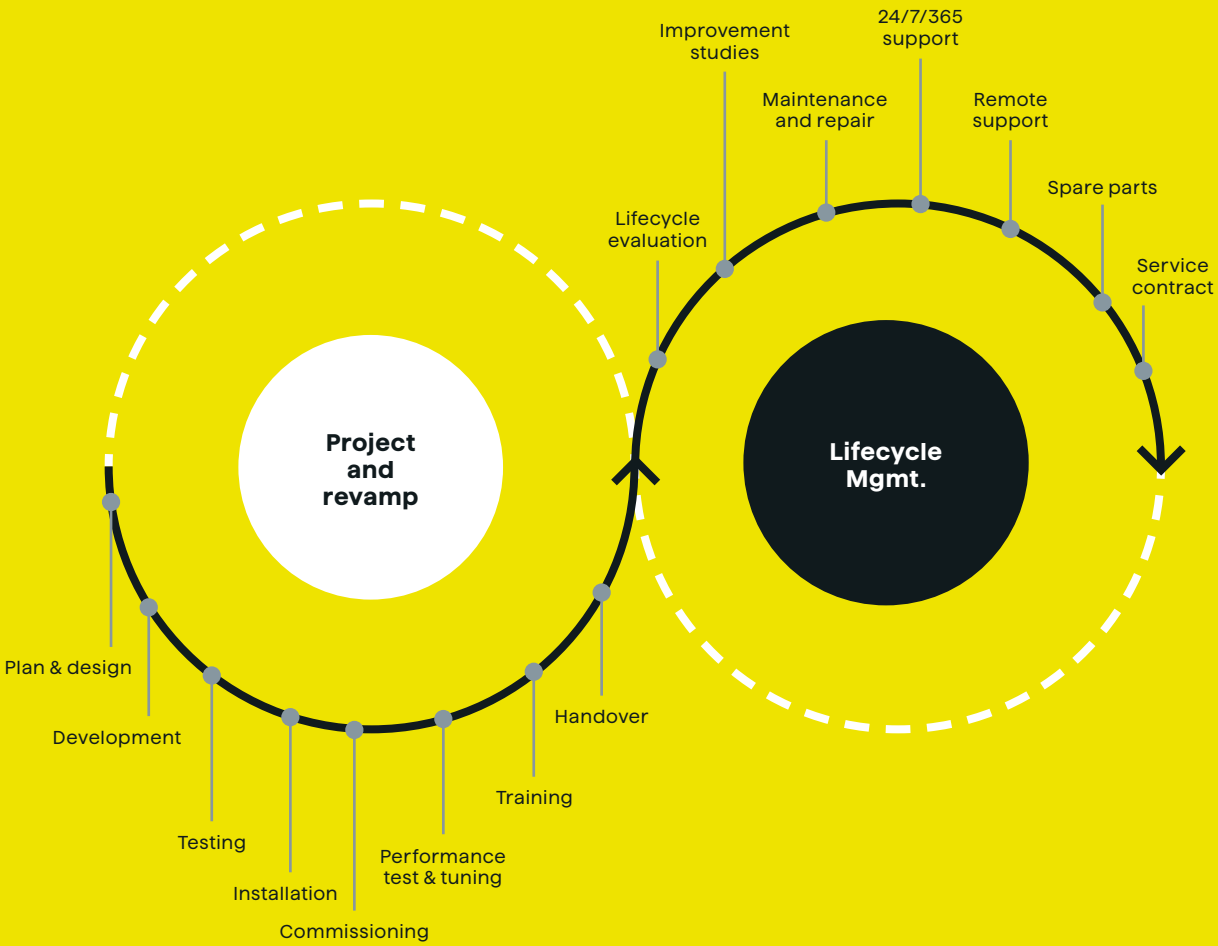
Maximum safety for both staff and equipment

Optimal customized system design with maximum standardization for high-quality components

The least possible grid distortion

Long-term upgradability, spare parts availability, and strong technical support

Operational challenges



With decentralized and renewable power on the rise, grid operators, as well as industrial clients, are facing new challenges. Power major consumers must comply with stricter regulations regarding the power quality of their rectifier systems. At the same time, it is essential to reduce the ecological footprint of industrial processes and respect the carbon dioxide balance.

Innomotics PR160 – The Road to Green Hydrogen

1. Producing Green Hydrogen via water electrolysis will play a key role in the transition to sustainable energy sources.
2. It allows the production of hydrogen as a chemical energy carrier from renewable electricity sources.
3. It also facilitates the use of clean energy in applications where direct electrification is not possible.
4. This makes hydrogen a key element in achieving the sustainability goals set by both governments and businesses.

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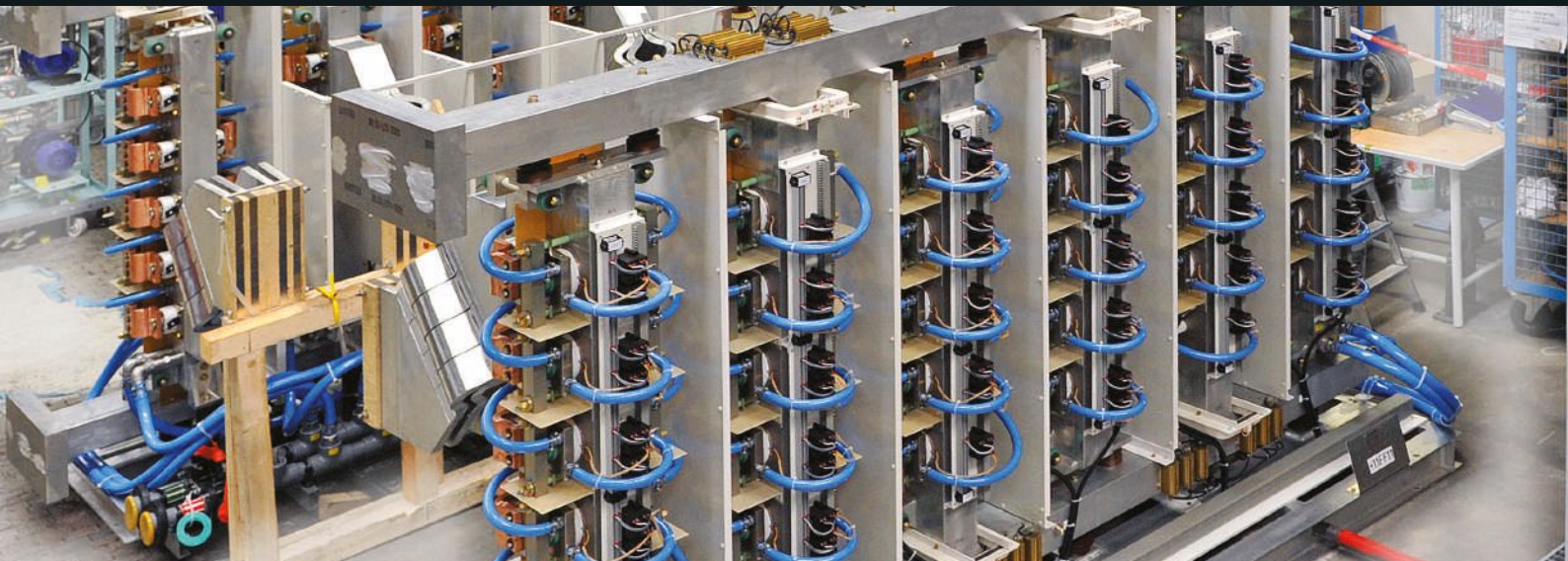
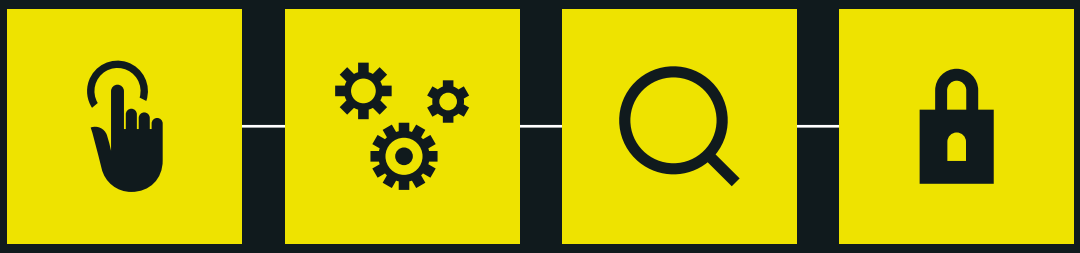


Innomotics PR160 embodies the most advanced electrical and mechanical engineering available, with features that include

- High efficiency with proven design and optimal power factor due to proximity of rectifier unit to transformer per IEC 60146 recommendations
- Excellent system safety thanks to extra-long creepage paths, wide air clearances, and careful separation of phases
- Easy and maintenance-friendly design with readily accessible vital components like semiconductors and fuses
- Use of long-life standard components for the industry – like SINAMICS DCM and the world's leading PLC system, SIMATIC, ensuring high reliability, long-term compatibility, and availability
- Long maintenance-free intervals for the entire system
- Nickel plating on all contact surfaces – for low and stable long-term ohmic resistance across the contact surface
- Efficient and virtually wear-and-tear-free cooling system with a high overload capacity
- Robust ironless current transformers on AC terminals feeding signals to the Innomotics PR160



DC measurement with high accuracy

Constant current control

Reverse current detection

Overcurrent protection

Why choose Innomotics PR160?

Innomotics PR160 powers your production – reliably and with global 24/7/365 support!

Get exactly the performance you need

Our Innomotics PR160 platforms come in three designs: vertical, horizontal, and compact. These scalable options ensure the highest cost-effectiveness in terms of DC capacity and space needs. Each system is customized to match the current and power needs of your electrolysis process at various operating points, utilizing optimal tap-changer, thyristor firing angle, and a saturable core reactor.

98 percent speaks for itself

Innomotics PR160 offers the highest efficiency*, with values exceeding 98 percent, an optimal power factor, and reduced grid distortion through the use of minimal harmonics. All of this is controlled, monitored, and protected by the flexible Innomotics PR160. In case of a safety event, the control system automatically provides information “at your fingertips” for the entire rectifier group. This helps shorten downtimes to a minimum, as well as maximize system availability with the easy-access arrangement of all rectifier components. Even during installation and commissioning, the pre-tested systems and largely standardized components help you to start operations quickly.

Reliable support for continuous operation

With Innomotics’ world-class services in virtually every country, you’ll never walk alone. Whether you need quick remote help or on-site support – we’re at your side to enable your operation to move forward as quickly as possible.

*According to IEC 60146

Our service offerings include

Innomotics Remote Services via telephone or Internet/VPN

On-site services in case of emergency

Planned services during scheduled maintenance phases

Service contracts

Success over the decades

With over half a century of experience and nearly 1,000 high-current rectifier systems installed, our specialists bring their expertise to every project to design the best system for any electrolysis plant. We are committed to continuously improving rectifier technology to meet ISO 9001, 14001, and 18001 standards, resulting in solutions that blend technical innovation with safety and ease of maintenance.

How Innomotics PR160 benefits you – at a glance

- Most suitable system design – with three scalable platforms
- Minimized footprint, but never pushed to the limits
- Stay informed about the status of your entire rectifier group through autonomous information “at your fingertips”
- The option to participate in energy markets – with a remote power management system

Technical Data

DC voltage rating	<1500V*
DC current rating	<100kA*
Semiconductor types	Diode or thyristor
Semiconductor size	3 and 4 inch
Rectifier configuration	DB or DSS
Parallel rectifiers	Yes
Number of pulses per rectifier group	6, 12, or 24*
AC-measurement system	Simezu with Rogowski coil
Voltage output control	OLTC* in combination with transductor or thyristor
Cooling	Deionized water or glycol mix
Installation	Indoor and container, IP class on request

*Other per request

INNOMOTICS

Redefining reliable motion for a better tomorrow

Innomotics GmbH is a globally leading supplier of electric motor and large drive systems which unites the power of deep engineering expertise and leading innovation in electrical solutions across industries and regions. With its trusted legacy of more than 150 years of engineering expertise, the company has been the backbone of reliable motion for industries and infrastructure worldwide. By combining the company's most efficient products and proven expertise with ground-breaking innovation, Innomotics is persistently scaling up industrial efficiency, electrification, sustainability, decarbonization and digitalization for its customers.

Innomotics has its operational headquarters in Nuremberg, Germany, and is a wholly owned subsidiary of Siemens AG. The company employs about 15,000 people worldwide. With 16 factories and a comprehensive sales and service setup in 49 countries, Innomotics operates a well-balanced global footprint across regions and industries in a resilient and growing market.

Further information is available at **innomotics.com.**

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