

CONTAINERIZED DC POWER SYSTEMS UP TO 5 MW

Plug & Play DC Supply for Hydrogen Projects.

Power range: 100 kW up to 5 MW DC per unit.

Hydrogen projects increasingly require complete, pre-engineered systems rather than individual components. That's why plating electronic delivers containerized and skid-mounted DC power supply systems—engineered, integrated and documented as one complete package for reliable plant operation.

Integrated scope:

- DC Power Supplies (Switch Mode- or SCR-technology)
- Control, monitoring & power distribution
- Protection and safety components
- Cooling system
- Optional: transformer, harmonic filtering / reactive power compensation, DC smoothing choke
- Optional: redundancy concepts and scalable expansion architecture

Key technical features (typical):

- 100% duty cycle for continuous 24/7 operation
- Constant current / constant voltage control (optional: power control)
- High efficiency (up to 98%, depending on configuration)
- Low ripple for stable electrolysis operation
- Remote monitoring and integration via industrial fieldbus / PLC interface



YOUR PARTNER FOR RELIABLE HYDROGEN DC POWER SYSTEMS

Hydrogen projects demand reliable DC power, grid compatibility and clear technical responsibility. Since 1987, plating electronic has delivered tailored DC power supply solutions for electrochemical processes, including electrolysis and Power-to-X applications.

Switch-mode SiC technology

Efficient and proven high-frequency technology for demanding industrial applications. Water- or air-cooled DC and pulse power supplies can be flexibly integrated into system concepts.

Digital control, DSP-based

Very high control accuracy and very low ripple, with fast connection to control units or common fieldbus interfaces.

Active Front End, AFE technology

Improved grid quality with THDi < 3%, high power factor and reduced phase current.

Thyristor technology, SCR

Robust and proven technology for high power levels and currents in demanding industrial applications. Suitable for processes where stable performance, long-term availability and reliable operation are essential.

This means for you:

- Stable processes and repeatable results
- Compact solutions with a small footprint
- High efficiency and options for improving grid quality
- Flexibility through parallel connection
- Service as part of the solution, from engineering to lifecycle support

For hydrogen projects, plating electronic supports sizing, system architecture, integration into EPC and plant control structures, commissioning and lifecycle service worldwide.



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DC Power Supply Systems for Hydrogen Production

Scalable, Reliable,
Engineered for
Industrial Electrolysis

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POWER ARCHITECTURE FOR MODERN ELECTROLYZER PLANTS

Hydrogen production requires more than individual rectifiers. It requires stable, scalable DC power architectures designed for industrial electrolysis.

Electrolyzer stacks typically operate between 1–5 MW. At plant level, capacities of 50 MW and above are increasingly targeted. This makes scalability, grid compatibility and system integration critical.

plating electronic designs DC power supply systems that support:

- Modular expansion
- Parallel configurations
- High-current and high-voltage applications
- Stable operation under dynamic load conditions

Switch Mode- and SCR-technology are available depending on stack design and project requirements.

DC POWER SOLUTIONS FOR HYDROGEN ELECTROLYSIS

From modular power supplies to integrated cabinet systems

POWER STATION systems from plating electronic support scalable hydrogen DC supply concepts, from modular power supply modules to centralized cabinet solutions. Both system approaches are designed for reliable integration into demanding electrolyzer and plant environments.

POWER STATION pe4606 series

Flexible power supply modules for scalable hydrogen DC supply systems.

Typical performance range per module:

- 6–48 kW DC output power
- Up to 2,200 A, depending on variant
- Up to 600 V, high-voltage variants
- Up to 160 V, high-current variant

Key characteristics:

- Switch-mode technology
- Regulation accuracy < 1 %
- Ripple < 1 %
- Efficiency up to 96 %
- Wide mains input 380–460 VAC ± 10 %
- Air- or water-cooled variants

Parallel connection allows flexible adaptation to stack voltage and current requirements.



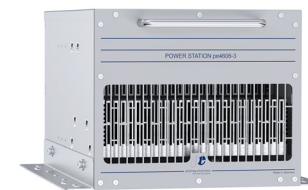
pe5910-W



pe4606-1



pe4606-2



pe4606-3



pe4606-4

POWER STATION pe5910-W

Cabinet system for higher power requirements and centralized hydrogen DC supply concepts.

Typical performance range:

- Up to 240 kW
- Up to 10,000 A
- Up to 1,000 V

Key characteristics:

- Switch-mode technology with digital control
- Constant current or constant voltage control
- Ripple < 1 %
- Water-cooled variants
- Multiple outputs possible
- Optional: electronic polarity reversal, AFE technology

Designed for demanding industrial plant environments.

BATTERY AND FUEL CELL TESTING SYSTEMS

Dynamic DC power for demanding testbench applications

Battery and fuel cell testing systems from plating electronic are based on modular, grid-connected power converter technology. They are designed to provide a stable DC link for testbench components and support highly dynamic operation with low grid interaction and high efficiency.

Battery testing system

The battery testing system consists of a grid-feed-in cabinet with protective devices, a dynamic power inverter and several racks for the integration of individual power modules.

High-performance, water-cooled plug-in modules combine high output power, high current ranges and precise control in a modular design. The system is suitable for demanding battery and component testbench applications requiring high power density and dynamic power delivery.

Fuel cell testing system

The fuel cell testing system consists of a grid-feed-in cabinet with protective devices and a dynamic power inverter.

The grid-connected power converter is designed to provide a stable DC link for testbench components and supports dynamic power delivery with low grid interaction, combined with high efficiency.

Key characteristics:

- Switch-mode technology
- High power: 250 kW / 500 kW per system
- High current capability
- Adjustable DC parameters
- Ripple simulation up to 15 Hz
- Bidirectional operation
- High dynamics for current increase up to 0.4 ms
- High efficiency up to 98 %
- Scalable system design
- DC source / DC load
- Measurement accuracy for current and voltage: 0.03 %
- Active Front End, AFE technology

