



INDUSTRIAL-SCALE GREEN HYDROGEN

20 MW Pressurized Alkaline Electrolyser Module

The 20 MW module combines four pressurised alkaline stacks and shared process systems in a compact industrial-scale building block. Compared with conventional electrolyser plant designs, the modular architecture reduces site footprint, system interfaces and plant complexity, helping lower balance-of-plant costs and overall project CAPEX.

Based on the same modular design philosophy as the 10 MW module, the 20 MW module combines higher production capacity with shared systems, reduced installation scope and lower project complexity.

Modular alternative to conventional plant design

Compared with conventional building-based solutions, the modular architecture simplifies plant design and helps lower overall project CAPEX.

Latest generation PERIC stacks

Includes next-generation PERIC alkaline stacks designed for high efficiency, operational stability and large-scale hydrogen production.

Smaller footprint and lower project CAPEX

Up to 30% lower steel structure costs, up to 50% lower piping-related costs and up to 70% lower area-related infrastructure costs.



Compact 20 MW architecture

Four pressurised alkaline stacks integrated in a compact multi-level configuration, reducing footprint and making more efficient use of available site area

Reduced project risk

One supplier responsible for engineering, integration, automation, erection and commissioning.

Integrated automation

Process control, plant automation and integration with existing plant systems delivered as a tailored project solution.



Alkaline electrolyser module 20 MW

The 20 MW module combines four pressurised alkaline stacks with shared process systems, purification, cooling and automation in a single industrial-scale hydrogen production unit.

PARAMETER	SPECIFICATION
Nominal capacity	20 MW
Energy consumption	From approximately 4.6 kWh/Nm ³ H ₂ , equivalent to approximately 51 kWh/kg H ₂ , at nominal load.
Hydrogen production rate	4,000 Nm ³ /h, based on four 5 MW stacks, each producing 1,000 Nm ³ /h.
Electrolyser configuration	4 × 5 MW pressurized alkaline stacks
Gas-lye separation	20 MW gas-lye separator
Gas purification	20 MW gas purification system
Power conversion	4 transformers and 4 rectifiers, one conversion train per 5 MW stack.
Hydrogen output pressure	Up to 30 bar before compression
Hydrogen purity	≥99.8 vol.% (≥99.999 vol.% after optional purification)
Load range	25–110% of nominal capacity
Process control	PLC control system
Cooling system	Integrated cooling system
Installation	Indoor or outdoor
Scalability	Parallel deployment beyond 500+ MW
Stack design lifetime	>80,000 operating hours
Compliance	CE marking, European manufacturing standards

Metacon's scope of supply

Metacon designs and delivers hydrogen production systems tailored to site conditions, process requirements, and downstream integration needs. Acting as a single point of contact, Metacon supports projects from engineering and implementation through startup, training, and long-term service.

Long-term service agreements

Metacon offers an optional LTSA covering scheduled maintenance, stack health monitoring, spare parts management, and performance support throughout the system lifetime. Customers benefit from a single service partner and point of contact for long-term plant operation.