

PURE POWER PURE HYDROGEN



Technology & Design
Made in Germany

Hydrogen Generation System

PRODUCT NAME

HyMax

PRODUCT CODE

HPS-AW-25-SEP-AUX

PRODUCT TECHNOLOGY

Alkaline

PRODUCT PACKAGE

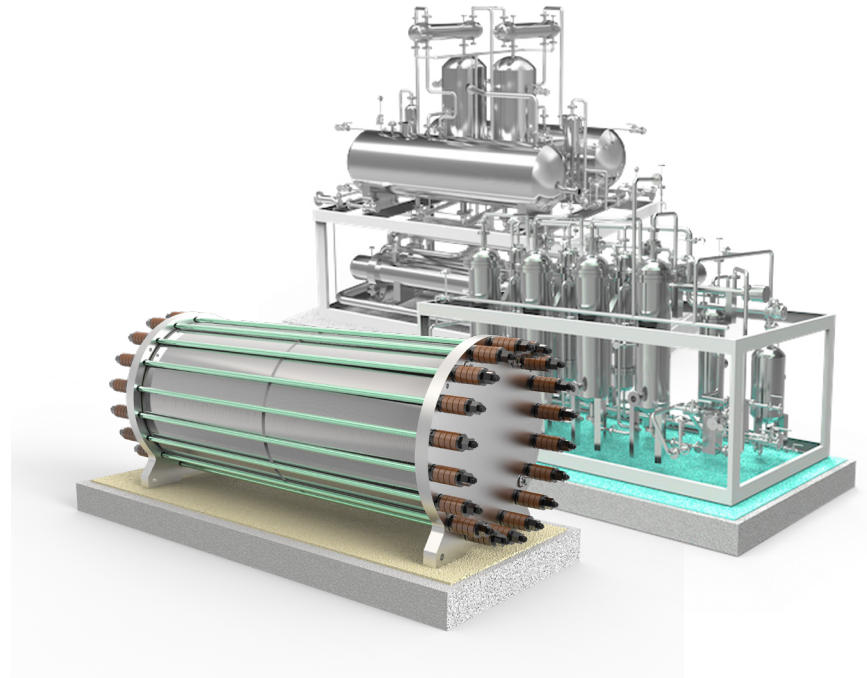
Electrolyzer Stack, Gas-Liquid Separator, Purification, Auxiliary system, Power supply unit

Definition of the System

Efficient and reliable Alkaline Water Electrolyzer (AWE) complete with Gas-Liquid Separators, Purification Systems, and Auxiliary Units.

Single stack systems offer production capacities up to 1000 Nm³/h. For higher production capacities, multiple modules can be connected, achieving outputs up to 20 MW each.

System & Product Certificates



EFFICIENT, RELIABLE, & SCALABLE HYDROGEN PRODUCTION

Key Features



High Efficiency

Industry-leading efficiency in converting electricity to hydrogen.



Comprehensive Integration

Combines electrolyzer stack, gas-liquid separators, purification systems, and auxiliary units in one solution.



Scalable Design

Modular architecture allows easy scaling from small to large production capacities.



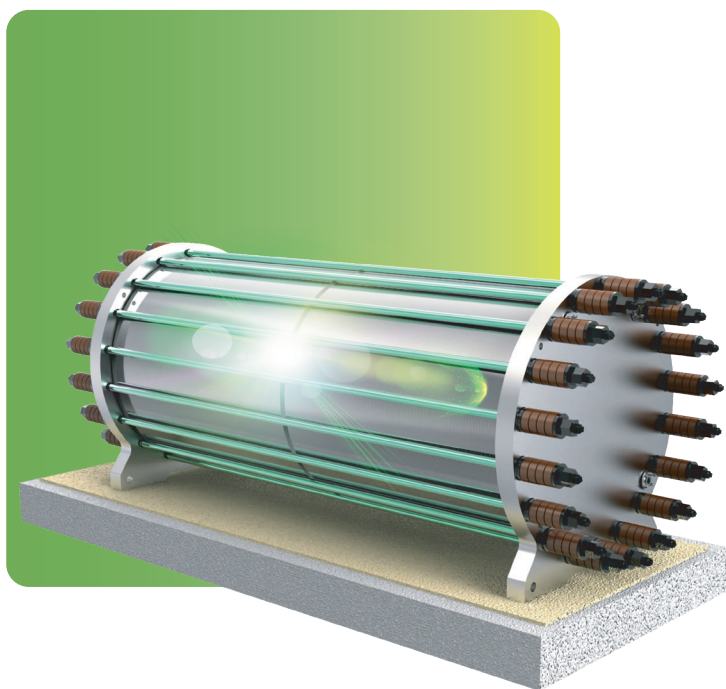
High Purity

Produces hydrogen with >99.999% purity.

The details and main characteristics outlined in this datasheet may exhibit minor variations. In light of continuous innovation and research and development improvements, RCT GH retains the authority to modify the information provided here at any time without prior notice. It is recommended to consistently acquire the latest version of the datasheet, which will be considered an integral part of the contractual agreement governing all transactions associated with the acquisition and sale of the described products.

Electrolyzer Stack

HyMax



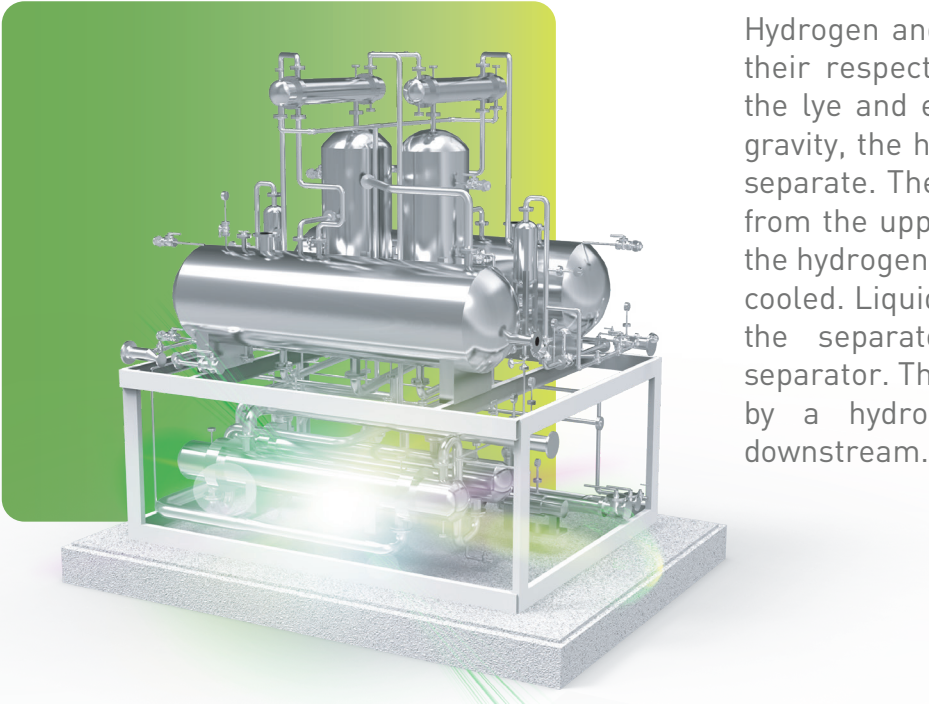
The electrolyzer stack features a series structure with one positive and two negative connections, operating at a pressure of 1.6 MPa. The alkaline electrolyzer stack provides substantial hydrogen production, high purity hydrogen, extended equipment lifespan, reliable operation, and low operational and maintenance requirements.

Technical Parameters

Item	Unit	200/1.6	500/1.6	1000/1.6
Hydrogen production	Nm ³ /h	200	500	1000
Operating pressure	MPa(G)	1.6	1.6	1.6
Operating temperature	°C	85-92	85-92	85-92
Rated current	A(DC)	3500	6500	13000
DC Power consumption(BOL)	kWh/(Nm ³ H ₂)	4.0-4.3	4.1-4.4	4.1-4.4
DI Water consumption	l/h	≤180	≤450	≤900
KOH electrolyte concentration	wt%	30	30	30
Electrolyzer weight	kg	14700	35200	50000
Dimensions of electrolyzer	mm	3200*1649*1639	4200*2440*2355	6900*2440*2355

Gas-Liquid Separation System

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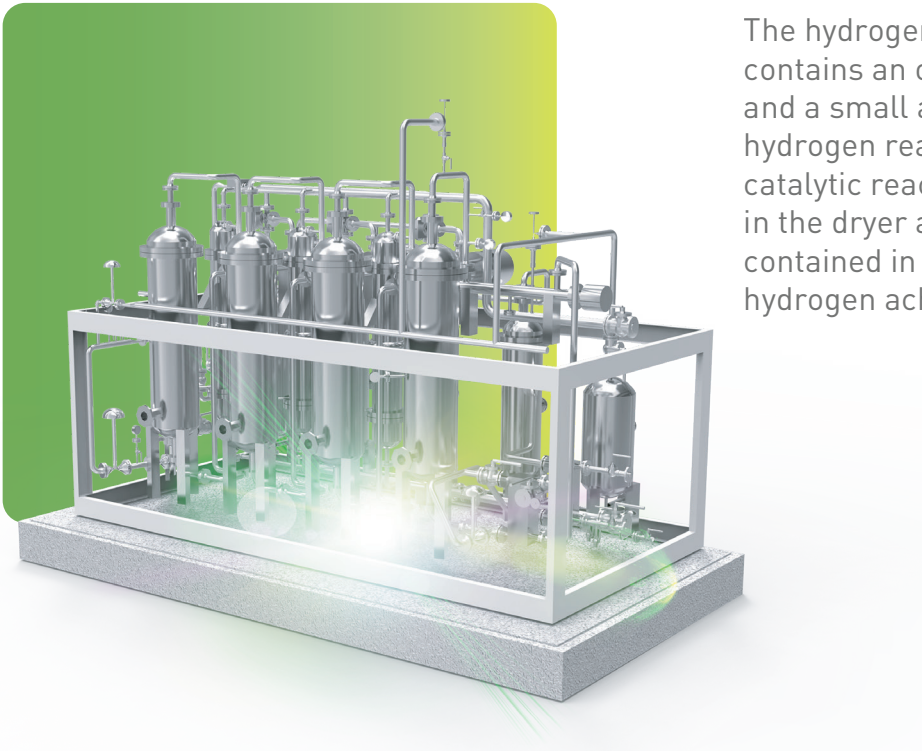
Hydrogen and oxygen exit the electrolyzer through their respective convergence channels along with the lye and enter the gas liquid separator. Due to gravity, the hydrogen (or oxygen) and lye settle and separate. The separated hydrogen (or oxygen) exits from the upper part of the separator and moves to the hydrogen (or oxygen) heat exchanger, where it is cooled. Liquid droplets are removed from the top of the separator through the hydrogen washing separator. The hydrogen pressure is then regulated by a hydrogen regulating valve and directed downstream.

Technical Parameters

Item	Unit	200/1.6	500/1.6	1000/1.6
Hydrogen treatment capacity	Nm ³ /h	200	500	1000
Purity of hydrogen at the outlet	%	≥99.8	≥99.8	≥99.8
Purity of oxygen at the outlet	%	≥98.5	≥98.5	≥98.5
Temperature of hydrogen at the outlet	°C	<40	<40	<40
Dimensions of Gas-liquid separation skid	mm	3000*2700*3800	5400*3200*3950	4800*3600*5800
Weight of Gas-liquid separation skid	kg	8000	11000	20000

Hydrogen Purification System

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The hydrogen generated by water electrolysis contains an oxygen impurity, typically below 0.2%, and a small amount of saturated water. Oxygen and hydrogen react rapidly to produce water through a catalytic reaction in a de-aerator. Molecular sieves in the dryer are used to adsorb the residual water contained in the hydrogen. After purification, hydrogen achieves a purity level of 99.999%.

Technical Parameters

Item	Unit	200/1.6	500/1.6	1000/1.6
Hydrogen treatment capacity	Nm ³ /h	200	500	1000
Purity of hydrogen	%	≥99.999	≥99.999	≥99.999
Dew point of hydrogen	°C	≤-70	≤-70	≤-70
Temperature of hydrogen	°C	≤40	≤40	≤40
Oxygen content in product	ppm	≤5	≤5	≤5
Dimensions of Purification Skid	mm	4000*2200*2500	4400*2350*3300	5600*3000*3500
Weight of Purification Skid	kg	6000	9000	15000