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POWER CONVERSION SYSTEMS FOR **HYDROGEN PRODUCTION**

OVERVIEW

Hydrogen as a kind of Energy Storage Energy storage by Hydrogen production through electrolysis process, offer a promising synergy with non predictable energy source (renewable energy as solar, wind etc...).

Hydrogen as a fully Green Energy Vector

Hydrogen is 100% Green compliance

- No need for waste disposal
- No pollution due to its use (no greenhouse gases)

TECHNOLOGY

Power rate from 1 to 6 MW with high power density for large scale production

Modular PCS with Insulated Gate Bipolar Transistors (IGBT) and low harmonics content.

Scalable outdoor solution skid 20'/40' with transformer and rectifier for all the environment conditions

CE equipment labelled included all relevant IEC and IEEE Standards

APPLICATIONS

- Power to Gas Energy Storage Converting surplus renewable energy into hydrogen gas by rapid response electrolysis and its subsequent injection into the gas distribution network
- Electric power generation fuel cells
- Renewable Chemistry H2 as fundamental chemical block for a variety of commodity chemicals and fuels (ammonia, synthetic methane etc...
- Thermal power generation steam turbine
- Automotive refuelling station

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TECHNICAL DATA

ENVIRONMENTAL CONDITIONS	
Installation	Outdoor
Storage Temperature	-20°C to +55°C
Operational Temperature	-20°C to +40°C[1]
Relative Humidity	< 95% (not condensing)
Altitude above the sea level	< 1.000 m
IP Rating	IP54
INPUT ELECTRICAL DATA	
Input Frequency	50/60 Hz
Input Voltage	From 6 to 33 kV[1]
Auxiliary Voltage	400 V
Power factor	> 0,99
THDi	< 2 %[1]
OUTPUT ELECTRICAL DATA	
Voltage range	From 500 to 1500 Vdc
Max. Current	4000 A[2]
Current Ripple	< 2 %[2]
Max Efficiency	98,1 %
DIMENSIONS AND CHARACTERISTICS	
Mechanical configuration	Open Skid Container
L x P x H (mm)	12192 x 2438 x 2896 mm
Approx. mass (kg)	23.000 kg
CONTROLS	
Voltage	Digital Limit control
Current	Digital control
Communication	Modbus TCP, Profinet, Ethernet IP

[1]Derating for temperature > 40°C
[1]Derating for altitude > 1000m
[1]Standardize bushings
[1]Referred to PSU Nominal Power
[2]Considering current load from 8% to 100%
[2]Dedicated exit cable box