

ADVANCED DC POWER SUPPLY FOR GH₂ ELECTROLYSERS

PureDCH by Statcon Energiaa fulfils the most stringent power supply requirements for demanding industrial processes: a perfect stability of output voltage for the best current quality and high efficiency performance.

Engineered for precision, PureDCH ensures power consumption remains as close as possible to a sine wave with consistently high power factor. Built on a proven half-controlled B6/12 diode rectifier integrated with polarization and advanced IGBT chopper technology, it delivers reliability with innovation.

With a wide output voltage range of 50 V to 1000 V and a maximum current of 3200 A per module, PureDCH offers true scalability. Up to 8 units can be interconnected seamlessly into a single power block to meet higher energy requirements.

PureDCH also meets grid connection standards without the need for additional power factor correction or harmonic filters, cutting installation and operational costs. The result is unmatched reliability combined with long-term economic efficiency throughout its lifecycle.



Using Module and technology by AEG PS, Germany. 

BENEFITS

- Highly reliable process power supply combined with high efficiency
- High dynamics to supply different types of applications
- Low Total Costs of Ownership (TCO)
- High-quality DC output extends electrolyser lifespan
- Wide operating voltage range with hybrid Diode & IGBT technology
- Compact footprint with low cabinet depth for easy container integration
- Integrated safety circuit up to SIL3 for safe system shutdown (acc. EN 61508)
- Fully grid compliant without cost intensive filter elements reduces CAPEX, optimizes OPEX
- Integrated polarization rectifier to protect electrolyser against cell damage

FEATURES

- High quality and dynamic DC supply
- High efficiency (99 % peak)*
- High power factor (> 0.96)
- Low THDi of <3 %
- Project-specific parameter optimization possible
- Modular Design for multi MW installations
- Independent module operation with n+x redundancy capability

High efficiency at different load situations

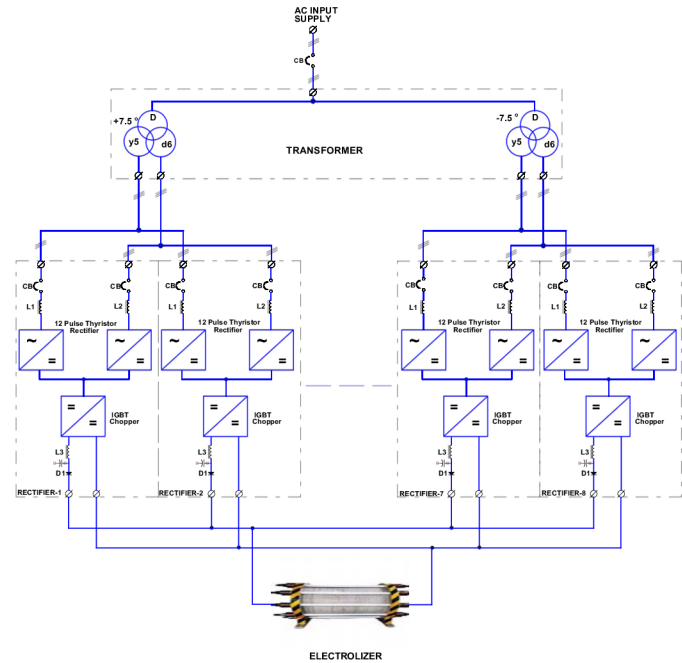
- Eco-Mode for highly efficient partial load operation
- Optimized OPEX due to decreased energy losses
- Optimal system utilization due to combination of Eco Mode and Equipment Care Mode

*Depending on point of operation

TECHNICAL SPECIFICATIONS

INPUT	
Input AC voltage	0.4 - 35 kV
System Transformer	Customized
Auxiliary input	230 VAC, 50/60 Hz
Power factor	>0.96 on system level
THDi	<3% @ rated point of operation, compliant with IEC61000, IEEE519 - 2022 and VDE-AR-N 4110
OUTPUT	
Min. load voltage	50 VDC
Max. load per single unit	600 V 3200 A 1920 MW
Max. load parallel operation	600 V 25600 A 15.3 MW
Current ripple	<3%
Efficiency (peak)	98.5%
Topology	6/12/24 Pulse
CONFIGURATION	
AC power cable	From bottom
DC output	Bottom or top
Water inlet	Bottom
Dimensions without connectors W x D x H(mm)	1500 x 800 x 2200
Weight	1300 kg
ENVIRONMENT AND PROTECTION DEGREE	
Inlet temperature of cooling fluid/air	<40°C *
IP protection degree	up to IP54
CONTROLS	
Digital voltage control	Yes
Digital current control	Yes
Digital power control	Yes
COMMUNICATIONS	
According to customer requirements	Profibus, PROFINET, Modbus TCP/IP
STANDARDS AND CERTIFICATIONS	
Conformity	EN 62477, EN 60146
EMC	EN 61000
Functional safety	up to SIL3 acc. to EN 61508

SINGLE LINE DIAGRAM



ABOUT STATCON ENERGIAA

Statcon Energiaa is an Indian power electronics manufacturer that serves vital industries such as Solar, Defence, Power, Railways, and Green Hydrogen.

We have a legacy of 37+ years of technology excellence in designing and manufacturing equipment for static energy conversion, covering a broad spectrum of power, **especially Static Converters/ Rectifiers.**

SCALABLE SOLUTIONS



≤ 2 MW RECTIFIER MODULE

To increase the power density and to allow easier installation on site, a base frame solution for two PureDCH systems is available for easier integration in larger systems. This significantly decreases the handling and installation costs on site.



≤ 4 MW Power Frame

The Power Frame option comprises 2 modules on a single base frame V3.1/V3.2: Prewired AC-paralleling cabinet allows AC connection at top or bottom and comprises a decoupling choke + optional fuse switches or circuit breakers. Optional installation of four Power Frames to form a 15 MW Power Block solution. Single base frame allows forklift handling.



≤ 15 MW Power Block

Additional scope of supply

- Transformer
- Busbar
- Cooling system
- Outdoor solution
- AC-LV-Distribution