DomesticPower®

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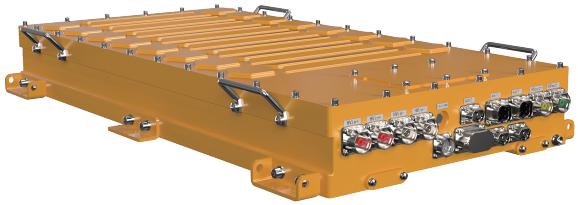
POLARIS® FUEL CELL POWER CONVERTER PD FAMILY



Introduction

Domestic Power DC/DC converters are a key element in the hydrogen fuel cell based systems. These converters provide a controlled output voltage with a wide range of input voltage from the fuel cell stack.

The high efficiency converters are used in range of applications from automotives to stationary power plants.

The state-of-the-art controls, performance, and quality allow the best performance for the end applications.

Smart Features

- Flexible configuration, applicable for various fuel cell specifications and applications, including stationary power generation, rail transport, ships, and road traffic, among others;
- Custom development, with tailored solutions for different fuel cell power and voltage requirements;
- Small size and light weight.

Protection & Performance

- **Isolation option**

  Galvanically isolated input and output provides high flexibility in end system design with simplified grounding and protection scheme.

  The converter output provides full short circuit protection to prevent stack failure.

- **Resonant soft switching technology**

  Isolated Option: Rated efficiency of 95%.

  Non-Isolated Option: SiC is used as the core component, ensuring an average efficiency of ≥ 98%.

- **Fast and good system transient response**

  With excellent dynamic regulation capability, it can swiftly respond to a wide and random variations of the output of the fuel cell stacks, and fulfill the maneuverability requirements of fuel cell vehicles.

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Specifications

TYPE	Isolated		Non-Isolated	
MODEL	PDIA150	PDIA175	PDIA160	PDIA200
LOW VOLTAGE SIDE (INPUT)				
Nominal Input Operating Voltage and Current	273V×550A	292V×600A	246V×650A	250V×800A
Input Voltage Range	150-450VDC	250-550VDC	30-500VDC	30-500VDC
Maximum Input Current	550A	600A	650A	800A
Rated Input Power	150KW	175KW	160KW	200KW
HIGH VOLTAGE SIDE (OUTPUT)				
Output Voltage Range	500-700VDC	600-900VDC	450-750VDC (Unidirectional boost)	
Efficiency	95%		98%	
AUXILIARY HIGH VOLTAGE DISTRIBUTION				
Number of Auxiliary High Voltage Distributions	5			
AUXILIARY POWER INPUT				
Input Voltage Range	18-36VDC			
Operating Power	≤ 150W		≤ 80W	
SYSTEM				
IP Level	IP67			
Operating Temperature Range	-40°C ~ 85°C			
Altitude	9800ft (above sea level)			
Cooling Method	Liquid cooling			
Communication	CAN2.0B			
Design Standards	EN 62477/ECE-R10/UL1741			
Protection	HV input undervoltage protection, HV input overvoltage protection, HV input overcurrent protection, HV output undervoltage protection, HV output overvoltage protection, HV output overcurrent protection, communication fault protection, over temperature protection			
	Short Circuit Protection		×	
DIMENSIONS & WEIGHT				
Dimensions (W*D*H, inch)	28.8*17.7*4.4	35.4*17.7*4.4	17.7*17.7*4.4	21.0*17.7*4.4
Weight	99.2±1lb	114.6±1lb	77.2±1lb	88.2±1lb

SYSTEM BLOCK DIAGRAM