

Smart Power Conversion System

PCS



Scalable. Smart. Bi-Directional PCS

Infintium Inc.'s PCS family of products is designed and built with the latest generation technology to provide a scalable platform that can meet the demands of many applications. From medium and heavy duty vehicles to solar arrays to uninterruptable power supplies, the PCS family of products can efficiently boost or buck power between different operating voltages within your power system.



Primarily designed to regulate current from a Fuel Cell engine, the system can convert a wide range of input voltages to an output with efficiencies of greater than 98% and boost ratios of over 6x. This boost ratio enables fuel cell stacks from 25-120kW to operate on high-voltage vehicle traction platforms with voltages up to 800V. For solar and UPS applications, maximum power with smaller boost ratios can reach 180kW.

Infintium's proprietary, onboard control system dynamically adjusts load internally to give a high degree of turndown with simple CAN 2.0 based controls and set points. Regulate using current or voltage on either input or output. For fuel cells, set your stack current from 2A to 300A on the input or output channel and let Infintium's PCS do the rest.

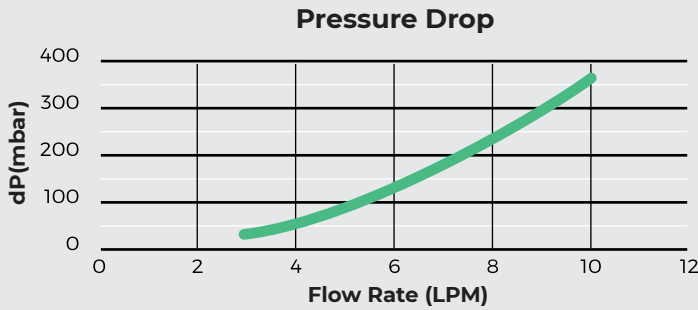
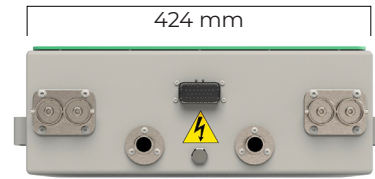
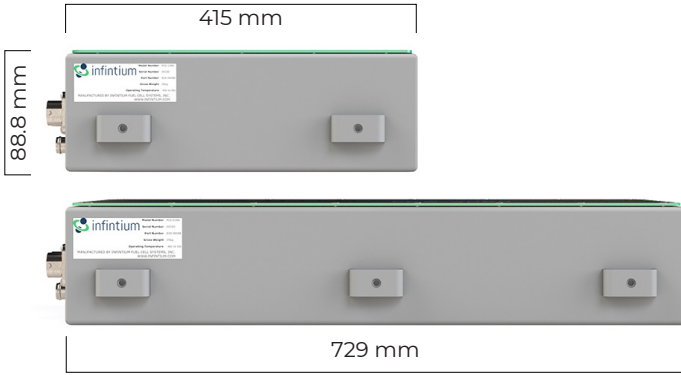
Service Features and Benefits

- Multi-Phase Spread-Spectrum Frequency Modulation (SSFM) technology for reduced EMI
- State-of-the-Art SiC (silicon carbide) high efficiency switching technology
- Heavy Duty Automotive Compliant - all AECQ-100, 125C+ rated components
- Very High Boost Ratio enabling 'Battery Dominant' Vehicle Range Extension methods
- Integrated Full-System Isolation Detection

Applications

- Fuel Cell Vehicle Power Conversion
- Onboard DC Charging
- Solar Regulation – Easy Peak Power Regulation
- Grid Storage Systems
- UPS Systems

Smart Power Conversion System (PCS) Specifications



Electrical Connections	Vendor	Part Number
High Side Power (HVIL)	Amphenol	PL082Y-301
Low Side Power (HVIL)	Amphenol	PL00W/Y-501
User Interface	MOLEX	39012245
Case Grounding	—	Chassis Mount
Isolation Detection	—	GND in User Int.

Mechanical/ Cooling	PCS-1580	PCS-3080
Weight	16 Kg / 35 Lbs	29 Kg / 64 Lbs
Dimensions (in mm)	415 X 424 X 88.8	729 X 424 X 88.8
Max Flow Rate	5 lpm	10 lpm
Max Pressure Drop	350 mbar	350 mbar
Max Inlet Temp	70° C	70° C

Communication/ Monitoring	Min	Typical	Max
CAN 2.0B Baud Rate	125kbps	500kbps	1Mbps
Voltage Accuracy		0.7%	2%
Current Accuracy		1.6%	
Temperature Accuracy		1C	3C
Supply Voltage (configurable)	9V	12V or 24V	18V or 36V

Power/Electrical	PCS-1580	PCS-3080
Max Power	90 kW	180 kW
Max Current	150A	300A
Voltage	10V—800V	10V—800V
Voltage Ratio (High/Low)	1.1x—6x	1.1x—6x

Environmental	
Galvanic Isolation	5kV
Insulation Resistance	> 500Ω/V + 1000V
Ambient Temp (operating)	-40—85C
Ingress Protection	IP67



Flexible Architecture
Supports a Wide Range of Vehicle Requirements (30kW-180kW)



Conversion Efficiency
Input to Output Voltages (>98%)



High Boost Ratio
With Voltages up to 800V (Over 6:1)



Extended Service Life
Power Cell Components (PEM Stack and Battery)



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