

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.

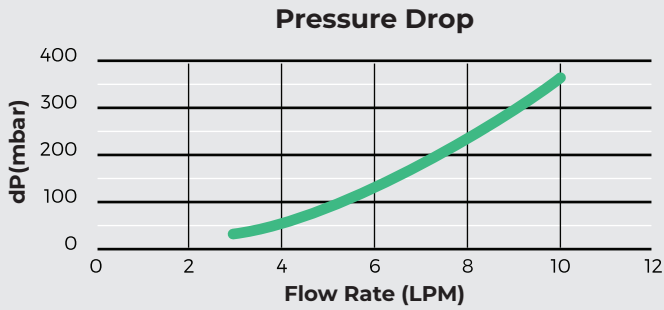
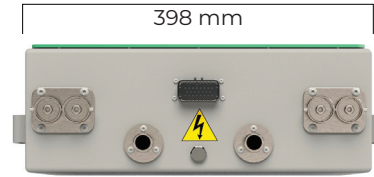
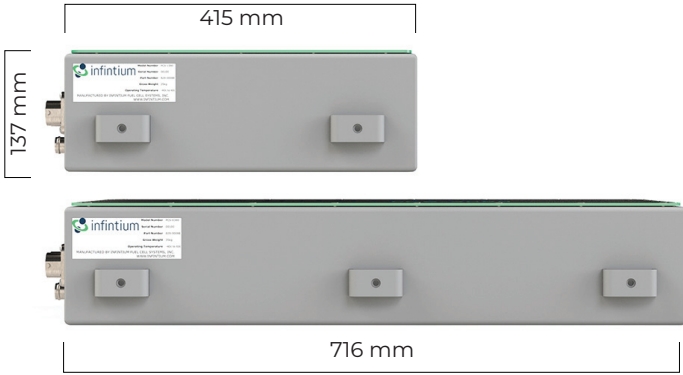
Service Features and Benefits

- 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	PL082X-301 or PL082X-121
Low Side Power (HVIL)	Amphenol	PL082Y-301
User Interface	TE Amp Seal	776228-1
Case Grounding	-	Chassis Mount
Isolation Detection	-	GND in User Int.

Communication/Monitoring	Min	Typical	Max
CAN 2.0B Baud Rate	125kbps	500kbps	1Mbps
Voltage Accuracy		0.7%	2%
Current Accuracy		2.2%	
Temperature Accuracy		1C	3C
Supply Voltage	9V	24V	36V

Environmental			
Galvanic Isolation		5kV	
Insulation Resistance		TBD-Greater than 5MΩ	
Ambient Temp (operating)		-40 – 85C	
Ingress Protection		IP67	

Mechanical/Cooling	PCS-1580	PCS-3080
Weight	20 Kg / 44 Lbs	35 Kg / 77 Lbs
Dimensions (in mm)	415 X 398 X 137	716 X 398 X 137
Max Flow Rate	5 lpm	10 lpm
Max Pressure Drop	350 mbar	350 mbar
Max Inlet Temp	70° C	70° C

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



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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