

Section 18

**DC TO DC NON-ISOLATED CONVERTERS  
1KW TO 5.2KW**

Pioneer Magnetics introduces new isolated high power DC to DC Power Conditioning System (PCS) that are geared towards Fuel Cell Technology. These are specifically designed for soft DC voltage source generated from Hydrogen. The Unregulated DC voltage generated from Hydrogen Fuel Cell Stack is conditioned by the PCS to provide a regulated DC voltage output that can be used in Telecom Applications in place of conventional UPS systems. The PCS design is rugged and can also be used in conventional Industrial Utility Vehicles replacing the huge and heavy batteries.

Product Matrix

MODEL	PM3336	PM3339	PM33311	PM33316
POWER	1000W	2000W	3000W	5200W
INPUT	19VDC	to	30VDC	
OUTPUTS	Current	Current	Current	Current
24V	42A	84A	125A	217A
48V	21A	42A	62.5A	108A
DIMENSIONS	5.73" x 10"		x 16"	



Features:

- ◆ -10°C to +50°C at Full Load
- ◆ Input Under Voltage Protection
- ◆ Input Max Current Protection
- ◆ Input Reverse Current Protection
- ◆ Programmable Output Voltage and Current via Control Signal
- ◆ Over Temperature Protection
- ◆ Self-Contained Forced-Air Cooling
- ◆ Over Voltage Protection

Options:

- ◆ Delayed Start up time
- ◆ Conformal Coating
- ◆ Isolated Output is available at extra cost

Note: Refer to Section 26 for list of all standard options

## SPECIFICATION

### Inputs

**RANGE:** 19V to 30V. Nominal 24V  
**MAX INPUT POWER:** 6400w  
**INPUT CURRENT RANGE:** 0A TO 320A  
**FULL LOAD EFFICIENCY:** 85%

### Environmental

**AUDIBLE NOISE:** 73dbA max at 1 meter  
**TEMPERATURE:** Operating: -10°C to +50°C at full load.  
Storage: -55°C to +85°C.  
**HUMIDITY:** 20% to 95% non-condensing.  
**ALTITUDE:** Operating: 5,000 feet. De-rates to 70% at  
15,000 feet. Non-Operating: To 30,000 feet.  
**VIBRATION:** Operating: From 5 to 27 Hz, 0.02 in double  
amplitude; from 27 Hz to 500 Hz, 0.75G, 3 Axes, 3 min per  
octave sweep, dwell 15 min at resonance. Non-operating:  
From 5 to 17 Hz, 0.10 in double amplitude, from 17 to  
500Hz, 1.5G peak; 3 axes, 5 min per octave sweep; dwell  
15 min at resonance.  
**SHOCK:** Operating: 5G, half sine, 11msec, 3 axes. Non-  
Operating: 15G, half sine, 11msec, 3 axes.  
**COOLING:** Forced air, internal fan. Airflow exits at  
connector end.

### Safety

**SAFETY:** Designed to meet UL1950, CSA22.2 No 950  
and TUV to EN60950. CE Mark (LVD)

### Output

**POWER RANGE:** 0W to 5.2kW  
**VOLTAGE RANGE:** 42V to 57V, 21V to 28V  
**CURRENT RANGE:** 0A to 123A, 0A to 246A  
**STATIC REGULATION:**  
Line:  $\pm 0.5\%$  over full line range.  
Load:  $\pm 0.5\%$ , min load to full load  
**POLARITY:** Input and output negative is common  
**RIPPLE AND NOISE:**  $< 1\%$  RMS  
**TURN ON DELAY:**  $< 200$ msec after the output is enabled.  
**OVERSHOOT:** No turn-on or turn-off overshoot  
**VOLTAGE STABILITY:**  $\pm 1\%$  for 24-hour period after 30  
minutes warm up  
**TEMP COEFFICIENT:**  $\pm 0.02\%/^{\circ}\text{C}$ .  
From -10°C to 50°C

### Internal Protection

**OVER CURRENT PROTECTION:** Current Limit Point:  
Programmable